

A Case Study on Pseudo-Demand of Document Delivery and the Strategies

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ABSTRACT

This paper finds out various types of pseudo-demands in the process of document delivering through investigating the pseudo-demands from users of document delivery service in the Northeast Normal University Library in 2017 by statistical analysis and comparative analysis. After deeply exploring the underlying causes of the large number of pseudo-demands, this paper proposes ways to reduce the pseudo-demands in order to improve the efficiency of document delivery services and help users make more efficient use of library resources.

Keywords: document delivery, pseudo-demand, strategy

I. INTRODUCTION

With the rapid development of information technology, the amount of information resources has shown a massive growth, and the way in which information resources are produced, stored and delivered has undergone profound changes. This makes it impossible for any single library to collect all the information resources. The contradiction that the collection is limited and the user's demand is unlimited is increasingly prominent. Therefore, the document delivery service, with the main purpose of making up for the shortage of the library's resources, has become increasingly important, and it has gradually become one of the main channels for satisfying the niche user's personalized needs.

At present, document delivery systems in China mainly include CALIS (China Academic Library & Information System), CASHL (China Academic Humanities and Social Sciences Library), NSTL (National Science and Technology library), and MedaLink. And each of the systems has its own document delivery platform. In principle, after users register on the platform, they can complete the process of document delivery on their own without library intervening. However, in order to ensure the quality of document delivery services and reduce invalid requests, some libraries will restrict the document delivery system and allow librarians to intervene in the service. The main document delivery systems applied by Northeast Normal University Library (hereafter, NENU library) are CALIS and CASHL. Compared with the two, CALIS requires the intervention of librarians to help users complete document delivery, while users can do it on their own without librarians' assistance by

using CASHL. The basic workflow of document delivery through CALIS system is as follows:

- The user submits document requests through CALIS system or by other ways;
- The librarian reviews the requests and then rejects the ones that does not meet the qualification;
- For the qualified requests, the librarian submits the requests to the document owner, usually a member of CALIS, through CALIS system;
- The librarian delivers the obtained document to the user by email or other ways.

As a librarian worked on document delivery services for several years, the author notices that there are a large number of pseudo-demands in the user's document delivery request. The so-called pseudo-demand refers to the document delivery requests that do not complete the whole process mentioned above, which divided into the following situations: First, the user submits a document delivery request, and then cancels it; Second, the user's request does not meet the qualification of document delivery services, that is, the required document is collected in our own library, or it is open access resource which has no need to obtain from other libraries; Third, after the librarian gets the document, the user gives it up for various reasons.

The large number of pseudo-demands not only reduces the efficiency and quality of librarians' service to those real demands, but also wastes the limited funds of document delivery. In addition, it reflects that some users lack skills and abilities in information resources retrieval and acquisition. Therefore, it is necessary to analyze the reasons of pseudo-demands in order to

improve the efficiency of document delivery services and promote users' satisfaction, and to know users' troubles in information obtaining, and then the library can improve relevant services in a targeted way.

II. RESEARCH METHODS

This study takes all users' document delivery requests of NENU library between January 1st, 2017 and December 31st, 2017 as a sample to study by using the methods of statistical analysis and comparative analysis. There are a total of 1052 items, of which 37 items are from CASHL system, and 1015 items are from CALIS system. Of those from CALIS system, 73.2% are from the registered users themselves, while the other 26.8% are from the librarian who receives the requests from the unregistered users by other ways, and submits the requests through the system for them. In addition, the author interviews 14 users who have typical behaviors by telephone, instant messaging tools(QQ or WeChat) and face to face.

III. STATISTICS AND ANALYSIS

A. Overall situation

In 2017, a total of 139 users from schools and research institutes, such as Faculty of Education, School of History and Culture, School of Foreign Languages, Administrations and Affiliated Units, Faculty of Chemistry, School of Mathematics and Statistics, School of Environment, School of Information Science and Technology, School of Physical Education, School of Life Science, School of Physics, School of Chinese Language and Literature, School of Business, School of Politics and Law, School of Economics, School of Marxism, Institute of Japanese Studies, Fine Arts Academy, School of Geographical Science, submitted 1,052 document delivery requests. Among them, 30 users from Faculty of Education submitted 480 items; 29 users from School of History and Culture, 166 items; 17 from School of Foreign Languages, 139 items. That is these three liberal arts schools account for 54.68% of the total number users and 74.62% of items. And 37 users, about 26.62% of the total number, from science schools including Faculty of Chemistry, School of Mathematics and Statistics, School of Environment, School of Information Science and Technology, School of Life Science and School of Physics submitted 149 items together accounting for 14.16% of the total. As the data show, the main users are from liberal arts schools, and the demands of users from science schools are relatively low. This, of course, is closely related to the teaching and researching methods of each discipline; Meanwhile, it is also influenced by various other factors, such as academic strengths and atmosphere of

the discipline, the development of the school, and the related library resources.

"Table I" shows that there are a total of 139 document delivery users in 2017, of which 92 submitted pseudo-demands unexpectedly, accounting for 66.19%, and only 47 users, about one third of the total, never submitted pseudo-demand. From the perspective of the items, there are 603 pseudo-demands, accounting for 57.32%, that is, more than half of the document delivery requests are inefficient. The per capita pseudo-demands is 4.34 items that means users' pseudo-demands become normal in document delivery services.

TABLE I. GENERAL SITUATION OF USERS' REQUESTS IN 2017

	Total requests	pseudo-demands
<i>User</i>	139	92
<i>Item</i>	1052	603

"Table II" shows that there are three types of pseudo-demands. The first case is that the users cancelled the requests by themselves. Through interviewing with the three users, the author finds that two of them given up the requests for the reason of the high cost, while the other got the article he needed from some other way. The second case which occurred most frequently is that the item user submitted is actually collected by our own library, occupying 79.93% of the total pseudo-demands. The statistics shows that the 482 pseudo-demands can be obtain from the 17 databases and the collection of paper journals that NENU library has purchased ("Table III" shows the specific statistics). The third case is also very common, that is, the items belong to open access resources and can be obtain on the internet for free, accounting for 19.57%.

TABLE II. TYPES OF PSEUDO-DEMANDS

	Canceled by user	NENU library resources	Open access resources
<i>item</i>	3	482	118
<i>proportion</i>	0.50%	79.93%	19.57%

TABLE III. PSEUDO-DEMANDS CAN BE OBTAINED FROM NENU LIBRARY

source	EBSCO	JSTOR	SpringerLink	SAGE	CUP	MUSE	ACS	WILEY	CNKI
number	235	61	12	41	9	5	8	13	6
source	Emerald	SD	ProQuest	OUP	Paper Collection	PQDT Dissertation	IOP	PAO	Gale
number	5	49	4	7	6	3	4	11	3

B. Distribution of pseudo-demands

The distribution of pseudo-demands in various schools is shown in "Table IV". The top three schools submitted most pseudo-demands are Faculty of Education with 355 items, accounting for 58.87% of the total number, School of History and Culture 101 with

items, accounting for 16.75%, and School of Foreign Languages with 48 items, accounting for 7.96%. The other eleven schools have 99 pseudo-demands in all, accounting for 16.42%. Besides, three of the schools, School of Marxism, School of Chinese Language and Literature, and Institute of Japanese Studies, have no pseudo-demand at all.

TABLE IV. PSEUDO-DEMANDS DISTRIBUTION IN SCHOOLS

school	user number	total requests number	efficient request number	pseudo-demand number	proportion of pseudo-demand (pseudo-demands/total requests)	per capita pseudo-demands number
Faculty of Education	30	480	125	355	73.96%	11.83
School of Foreign Languages	17	139	91	48	34.53%	2.82
School of History and Culture	29	166	65	101	60.84%	3.48
School of Information Science and Technology	5	37	23	14	37.84%	2.8
School of Environment	8	38	21	17	44.74%	2.13
School of Marxism	1	1	1	0	0	0
School of Politics and Law	2	11	5	6	54.55%	3
School of Economics	2	9	4	5	55.56%	2.5
School of Business	1	5	1	4	80%	4
School of Chinese Language and Literature	3	14	14	0	0	0
School of Mathematics and Statistics	10	39	14	25	64.10%	2.5
School of Physics	4	4	1	3	75%	0.75
School of Life Science	7	17	11	6	35.29%	0.86
Faculty of Chemistry	3	14	11	3	21.43%	1
Administrations and Affiliated Units	15	70	61	9	12.86%	0.6
Fine Arts Academy	1	7	0	7	100%	7
Institute of Japanese Studies	1	1	1	0	0	0
Total	139	1052	449	603	57.32%	4.34

Taking per capita pseudo-demands number and Proportion of pseudo-demand as indexes to measure, the top three pseudo-demand submitting schools are Fine Arts Academy with 7 pseudo-demands per capita of which are all pseudo-demands, Faculty of Education with 11.83 pseudo-demands per capita taken 73.96% of the total requests, and School of History and Culture with 3.48 pseudo-demands per capita taken 60.84%. It is necessary to note that although all the requests from Fine Arts Academy are pseudo-demands, they

submitted by the same user. Therefore, it only reflects the certain user's individual information literacy, and cannot be used to measure the overall level of the school. The same situation goes for School of Marxism, School of Chinese Language and Literature and Institute of Japanese Studies. In contrast, there are only 12.86% of pseudo-demands from 15 users of Administrations and Affiliated Units, of which 13 are librarians, reflecting their familiarity with information resources, and their capacity of information retrieving.

C. Users of pseudo-demands

Users of document delivery services include faculty, staff and postgraduates (including masters, doctors, and post-doctors), among which postgraduates are the main

users. "Table V" shows in 2017 there are 104 postgraduates submitted document delivery requests, accounting for 74.82% of the total number of users. The number of faculty and staff are 20 and 15, respectively, accounting for 14.39% and 10.79%.

TABLE V. USERS OF PSEUDO-DEMANDS

	faculty			staff			postgraduate		
	user number	pseudo-demand user number	pseudo-demand number	user number	pseudo-demand user number	pseudo-demand number	user number	pseudo-demand user number	pseudo-demand number
<i>Faculty of Education</i>	0	0	0	0	0	0	30	27	355
<i>School of Foreign Languages</i>	6	4	23	0	0	0	11	6	25
<i>School of History and Culture</i>	4	2	9	0	0	0	25	17	92
<i>School of Information Science and Technology</i>	2	1	8	0	0	0	3	2	6
<i>School of Environment</i>	2	2	3	0	0	0	6	4	14
<i>School of Marxism</i>	0	0	0	0	0	0	1	0	0
<i>School of Politics and Law</i>	0	0	0	0	0	0	2	1	6
<i>School of Economics</i>	0	0	0	0	0	0	2	2	5
<i>School of Business</i>	0	0	0	0	0	0	1	1	4
<i>School of Chinese Language and Literature</i>	0	0	0	0	0	0	3	0	0
<i>School of Mathematics and Statistics</i>	3	3	6	0	0	0	7	5	19
<i>School of Physics</i>	2	2	2	0	0	0	2	1	1
<i>School of Life Science</i>	1	1	1	0	0	0	6	4	5
<i>Faculty of Chemistry</i>	0	0	0	0	0	0	3	2	3
<i>Administrations and Affiliated Units</i>	0	0	0	15	4	9	0	0	0
<i>Fine Arts Academy</i>	0	0	0	0	0	0	1	0	0
<i>Institute of Japanese Studies</i>	0	0	0	0	0	0	1	1	7
total	20	15	52	15	4	9	104	73	542

15 of the 20 faculty who had submitted pseudo-demands accounted for 75% of the total number of faculty. They submitted 52 pseudo-demands, that is, 3.47 items per capita. Among the staff, 4 out of 15 users, which accounted for 26.67% of the total number, submitted 9 pseudo-demands, that is, 2.25 items per capita. And among the 104 postgraduate users, 73 of them submitted 542 pseudo-demands, accounting for

70.19% of the total postgraduate users, 7.42 items per capita. The faculty takes the highest proportion of user who submitted pseudo-demands, followed by postgraduates, and the staff is the lowest. Comparing efficient request number with pseudo-demand number of different types of user ("Table VI"), we see that the postgraduate have the highest pseudo-demands, followed by the faculty, and the staff takes the lowest.

TABLE VI. PSEUDO-DEMANDS OF DIFFERENT USER TYPES

user type	total requests number	efficient request number	pseudo-demand number	proportion of pseudo-demand (pseudo-demands/total requests)
<i>faculty</i>	158	106	52	32.91%
<i>staff</i>	70	61	9	12.86%
<i>postgraduate</i>	824	282	542	65.78%
total	1052	449	603	57.32%

IV. DISCUSSIONS

A. Information retrieval ability

Most of the users' pseudo-demands (482 items in total, accounting for 79.98% of all the pseudo-demands, and 45.82% of all the requests) can be retrieved from the 17 commonly-used databases that the library has already purchased. The causes of these pseudo-demands are as follow: Firstly, some users, especially a small number of elder users who are used to using paper document and have never tried the electronic resources, will blindly submit document delivery requests once their required resources beyond paper form; Secondly, the library's one-stop knowledge discovery system is still imperfect, thus users have to enter each database one by one to retrieve certain resources repeatedly. However, most of the uses are not very familiar with each database, and cannot judge which of the many databases has the relevant resources he needs. Taking Faculty of Education as an example, 167 items of all its pseudo-demands can be obtained from EBSCO database, accounting for 70.17% of all the pseudo-demands that can be found in EBSCO, and 47.04% of all the pseudo-demands from Faculty of Education (167 items/355 items). It shows that, on the one hand, EBSCO database plays an important role in supporting teaching and researching in Faculty of Education. On the other hand, combining with that Faculty of Education has most pseudo-demands and its users are mainly postgraduates mentioned above, the postgraduates of Faculty of Education as a whole have poor information retrieval ability. Thirdly, although some users chose the right database, they still miss the relevant resources because of the improper choice of search terms and lack of search skills. They mistakenly believe that the unfound resources are not collected in the library and can only be obtained by document delivery services. Fourthly, users confuse a certain database with others. For instance, in NENU Library when users recommend foreign dissertations they retrieve the information through ProQuest database, however, after purchasing, users should obtain the full text from PQDT dissertation full-text database instead of ProQuest database. Some users often ignore that these two databases are different and cannot achieve cross-database download, thus after recommending they still enter ProQuest database to download the full text and not surprisingly they fail, which leads to misunderstanding of library never purchasing the dissertations. Therefore, they submit the dissertations again, actually pseudo-demands, through document delivery services.

B. Research ability

For the vast majority of Chinese users, the first database they start to know and use is CNKI (China

Knowledge Network), which should be the most basic, familiar and commonly used to users. However, there are still 6 pseudo-demands found in CNKI. One of them titled "Growth vitality and pollutants-removal ability of plants in constructed wetland in Beijing region" in English was not recognized by the user that in fact it is a Chinese article titled "Plant Activity and Pollutant Removal Capacity of Constructed Wetlands in Beijing", therefore, was not searched in CNKI. The other 5 were submitted are all because the users (5 postgraduates) have never used CNKI. Through further interviewing, the author finds that some postgraduates, especially new students, are accustomed to using Baidu search engine as their primary approach for academic resources searching, and they will no longer conduct further searches for more innovative and more professional resources in databases according to information clues provided by Baidu. It shows that these users are not only poor in information literacy, but also in researching ability.

C. Knowledge of OA

There are 118 pseudo-demands can be obtained from open access (OA) resources, accounting for 19.57% of all pseudo-demands. Firstly, such kind of pseudo-demands is mainly caused by users' lack of awareness of OA resources. Some users have never even heard of "open access resources", not to mention search and obtain OA. Secondly, the library website does not fully reveal OA resources. Although there is an "OA/Free Resources" tag in the database navigation, users still confuse about what resources OA can provide without a specific introduction. Clicking on the "OA/Free Resources" tag, no further explanation will be given, but only 36 OA database links in alphabetical order, including ASABE Journals, CSHL Online Journals, HighWire Press, China Science and Technology Online, etc., that are not classified according to disciplines, languages, or literature types. It is the library's failure of OA promotion and exploration that caused troubles for users when faced with a wide range of OA resources. Thirdly, although theoretically OA resources can be obtain freely on the internet, when facing a massive amount of network resources with no specific OA resources search engines, users with low search ability are just like finding a needle in a haystack.

D. Fees

There are only two users canceled the requests for the reason of the fees, but in the long term work the author finds that some users are really concerned about the cost of document delivery services. Although most users do not hesitate to submit requests despite the high cost, there are individual users who may cancel their requests for economic reasons. At present, NENU Library has made some subsidy policies for document

delivery users, such as, providing full subsidies for journal articles and conference papers, half-price subsidies for copies of dissertations and microfilms. However, the costs of some special documents are still relatively high. Taking electronic newspapers from the National Library as an example, text only is 10 yuan (black and white) or 20 yuan (colored) per photo, and picture is 30 yuan per photo that is not a small expense for users need many pictures.

V. CONCLUSION

The reason why users submitted so many pseudo-demands is because they will meet four difficulties in the process of obtaining documents themselves. Firstly, unawareness, that is, users do not know what resources the library already has (including OA resources), or users do know that the library has purchased a variety of databases, but are not familiar with which databases have resources related to their own research fields. Secondly, inability, due to the low information literacy, users can not select search terms or retrieval paths accurately. Thirdly, inconvenience, this is mainly due to that the library has not completed revealing and integrating all databases so that users do not have a precise navigation system to conduct a one-stop search. Lastly, unaffordability, the cost of some documents goes beyond the users' acceptance.

In view of the above situations, the library should make solutions from the following aspects to help users overcome the difficulties.

A. Awareness

In order to provide users with a comprehensive understanding of the library's various databases (including OA resources), the library should conduct long-term, extensive and multi-dimension advocacy of databases through various means and channels, for example, setting up a floating window of a recommended database at the library homepage, pushing databases' profiles to users through the library's official WeChat or E-mail regularly, hold databases knowledge context with prizes in the due course.

More importantly, it is necessary for the library to targetedly promote the certain databases to the relevant school with related disciplines. For instance, 40 items of all 61 pseudo-demands obtained from JSTOR are submitted by users of School of History and Culture, accounting for 65.57% of all JSTOR pseudo-demands, and 39.60%(40 items/101 items) of all pseudo-demands of School of History and Culture. It shows that on the one hand users of School of History and Culture should be the main users of JSTOR database. On the other hand, they do not know JSTOR very well so that they cannot make full use of JSTOR. Otherwise, the pseudo-demands of School of History and Culture can be reduced by one third. Therefore, the library should pay

attention to such situations, and provide specialized services to improve awareness of databases by different user groups.

B. Ability

Good information literacy, such as retrieval ability, discriminant ability, and acquisition ability, guarantees better teaching and research. However, many users lack these abilities. Therefore, the library should adopt some strategies to help users improve their ability in this area. First, the library should set up information literacy course based on academic research. At present, although many libraries offer such courses to introduce databases and the process of using them which are always quickly forgotten by users, few libraries guide users to retrieve and acquire information from the perspective of academic research such as how to select a topic, how to discover a hot topic, and how to do a literature review. The library should pay attention to the actual needs of users and effectively improve the user's ability to retrieve documents. Second, the library should develop multi-forms and multi-channels of information literacy education according to the different needs of users such as setting up for regular training as well as for appointment training, combining regular database trainings with lectures, embedding the training in the classroom and so on. Third, the library should make full use of online social networking platform to expand training. For example, librarians could establish a QQ group as a way for the users to communicate with the librarians or other users about the experience of the usage of databases, or search skills, etc. at any time. In addition, the library could regularly send search tips, micro-videos, micro-lessons, micro-magazines, etc. through its public WeChat.

C. Convenience

As we know, the one-stop knowledge discovery system is the best way for users to quickly acquire library resources. Therefore, the library should try its best to perfect the digital resource discovery system, solve the problems of delays in updating and inaccuracy in description of databases, and simplify the process of library resources acquisition for users.

Moreover, with the increasing variety of library resource, the library should integrate its self-built databases, trial databases, institutional repository, especially OA resourced and other high-quality online academic resources into a unified one-stop resource discovery system, so as to realize one-stop search for all resources of the library by users to reduce the pseudo-demands in document delivery services. Of course, it is a tedious and heavy work which not only involves the seamless integration of multiple databases and multilingual literatures, but also realizes the unified retrieval of all data formats and methods. Meanwhile, it also requires the technology of one-stop search for

human-computer interaction and multimedia format information based on natural language understanding which still needs further breakthroughs.

D. Affordability

Although there are only two users who canceled the requests due to the high cost of document delivery, it is undeniable that the fee is one of the user's concerns. According to the statistics, in 2017, CALIS and CASHL launched a total of 11 promotions to NENU library, and each time, both the number of new users and the number of document delivery requests increased in a small amount. It shows that the cost do have an impact on users, especially to the postgraduates. Therefore, the library should increase the subsidy to users as much as possible, and make it routine to achieve user-oriented services. For example, the People's University of China Library implements a full subsidy policy for document delivery.

Libraries with financial difficulties in implementing full subsidy can make full use document delivery promotions of CALIS, CASHL, and NSTL to reduce users' cost as much as possible. On the other hand, libraries should also actively seek the support from relevant schools and related departments within the universities. Only in this way, it can meet the user's information needs and ensure that the document delivery services truly serve the teaching and researching of the university.

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