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Textbooks and Their Free Availability on WWW: A Case Study of University of Delhi

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1 INTRODUCTION

New normal: online teaching, online/open-book examination, and lockdownlike frequent lock down, work from home etc.,after COVID-19 pandemic has forced educational institutions to revisit their policies for imparting education to their students. Physical classroom teaching is being replaced with online instruction. Paper pen examination mode is being replaced by online examination. Libraries have been giving more impetus on online services rather than traditional services. The pandemic forced millions of students and faculty members to pursue their studies from their respective homes. This new normal has also demanded that the libraries prioritize providing digital access to textbooks and academic materials. The new normal have compelled the libraries to shift their focus from traditional print to digital resources. Within the digital resources, the libraries are focusing more on e-textbooks listed in syllabus to meet the demands of students for continuing their studies.

2 E-TEXTBOOKS – ISSUES

The following are significant issues related to syllabus textbooks in digital format:

2.1 NON-AVAILABILITY

Most textbooks are not available in e-book format as publishers prefer to sell these titles in print format.

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2.2 EXORBITANT PRICE

In case of availability, the institutional license price is too high for a library to buy/subscribe to them. The primary reason for this hyperbolized price is a lack of competition. The extremely high cost of e-textbooks makes them unaffordable and unsustainable for academic libraries. Angered by the unexpected hike in price during the pandemic, academicians, students, and librarians have been raising their voices against the unjustifiable pricing of e-textbooks.

In an open letter to the UK Government, thousands of academicians, including librarians, demanded an investigation into the academic e-textbooks market during the pandemic. The letter stated that

- “Copyright law disallows educational establishment from whole scanning books they own in print.”
- “Price rises are common, sudden and appear arbitrary. Recently two well-known academic publishers raised the cost of a single-user e-book by 200% or more with no warning earlier this year”¹

A subject librarian, Johanna Anderson, lambasted the publishing industry while saying, “Publishers are manipulating the market and price gouging from COVID. We are trying to support students during an unprecedented public health crisis, and they are making it so much harder.”² Supporting the argument, Shankar, a prominent Indian scientist, says, “The commercial publishers, who run scientific publishing like a fiefdom, charging exorbitant subscriptions or publishing fees making exponential profits, and treating the intellectual output of scientists and institutions as if it was all their personal property.”³

3 FREE ACCESS TO E-TEXTBOOKS

During the pandemic, some of the leading publishers offered a free trial of their e-textbooks, including referenced textbooks but then withdrew after a short period. The new normal “library-access-from-home” and an unprecedented price increase of e-textbooks compelled users to visit the World Wide Web (WWW) to access freely available full-text of these e-textbooks.

4 OBJECTIVES

The objectives of the study are to find out availability of free PDF version of:

- Textbooks listed in the syllabi of all courses offered at undergraduate and post graduate level by the University of Delhi.
- Faculty wise analysis of available e-textbooks listed in the syllabi of undergraduate and postgraduates’ courses offered by different faculties at the University of Delhi.

- Unique titles of textbooks listed in the syllabi of all courses offered by the University of Delhi.

5 LITERATURE SURVEY

Open/free digital sources have become a thing of routine. Scholars/ academicians have entering into an agreement for Creative Common CC) Licensed. “CC copyright licenses and tools forge a balance inside the traditional all rights reserved setting that copyright law. The combination of our tools and our users a vast and growing digital commons, a pool of content that can be copied, distributed, edited, remixed, and build upon, all within the boundaries of copyright law”.⁴ Libraries have been providing links to the websites for obtaining free and low-cost e-textbook.

Das and Hazara conducted a study on four online databases providing free access to electronic resources i.e., Education Resource Information Centre (ERIC); ConnectingREpository (CORE); PDF Drive; and Project Gutenberg. One of the major conclusions of the study is that “in search type category PDF Drive achieved highest score whereas CORE got the lowest score”.⁵ In another study an overview has been given about the open access resources in science and technology. In the study they have categorized PDF Drive as a source for open access books.⁶ Anyira and Idubor also listed PDF Drive as an “open Access Books and Journals”⁷

The academic community does not demand textbooks to be available free of cost. Still, they expect a reasonable price that makes it profitable for all parties - students, libraries, and publishers. Efforts are being made to make textbooks affordable.⁸ To support the open e-textbook movement, the US Department of Education has distributed \$7 million in grants in 2020 to help open textbook creation.⁹ Another notable effort is from Open Educational Resources (OER) Commons. OER Commons is a platform for educational resources. The main objective of OER Common is to “explore, create, and collaborate with educators around the world to improve curriculum”.¹⁰

Ramaiah mentioned that “in the US several state governments have started free digital textbooks to save money and improve twenty-first century learning. A few non-profitable organizations have started offering free opensources as an initiative”.¹¹ In 2008 Arunachalam mentioned a brief list of sources of open access books.¹²

The authors have not been able to find any study keeping in view the open e-textbooks sources specific for titles listed in syllabus of an academic institute.

6 METHODOLOGY

The University of Delhi offers 76 postgraduate and 75 undergraduate courses through 10 faculties and 19 Academic Centers. A database of references

listed in 173 syllabi/papers available on www.du.ac.in¹³ has been compiled in Microsoft Excel. There were approximately 49,691 references, including various types of documents in different languages. These references were segregated according to the kind of documents like textbooks, serials, and other resources. The textbooks were further segregated as per their languages.

After said segregation, the textbooks in the English language were searched on WWW for the availability of their free PDF versions. To verify the PDF availability, retrieved URLs of the references were noted and analyzed. While analyzing, it was observed that a major part of the textbooks was found through a search engine called PDF DRIVE. After considering it, all the references found on WWW were categorized into two categories, i.e., Open Source and PDF DRIVE. Open sources include websites like www.archive.org, www.gutenberg.org, www.ignca.org, etc.

PDF Drive established in March 2017 with the sponsorship of Asaha Inc., San Diego, United States is a free search engine which allows to search, preview, and download millions of PDF files. Its crawlers are constantly scanning the WWW to add pdf files to its database. PDF Drive respects the intellectual property rights of others and expects its users to do the same. In the case that PDF files are withdrawn from the web, then they are also immediately withdrawn from PDF Drive search results.¹⁴

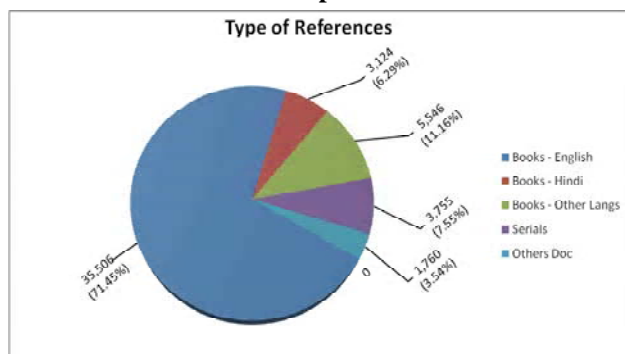
The results have been presented in the form of tables and graphs with their analysis.

7 ANALYSIS

7.1 TOTAL REFERENCES

The total references have been categorized on various parameters like language, type of documents, and presented through Tables and Graphs. References in English language books have been analyzed in detail.

Graph-1



Graph-1 depicts the various type of references listed in 173 syllabi of courses/papers offered by the University of Delhi at undergraduate and postgraduate levels. The graph reveals that there are 49,691 total references of various types of documents. The graph also indicates that out of these 49,691 references, 35,506 (71.45%) belong to books in the English language, 3,124 (6.29%) to books in the Hindi language, and 5,546 (11.16%) to books in other languages. The references of other documents include websites and YouTube etc., account for 1,760 (3.54%). Various courses/papers also have references from serial publications accounting for 3,755 references (7.55%).

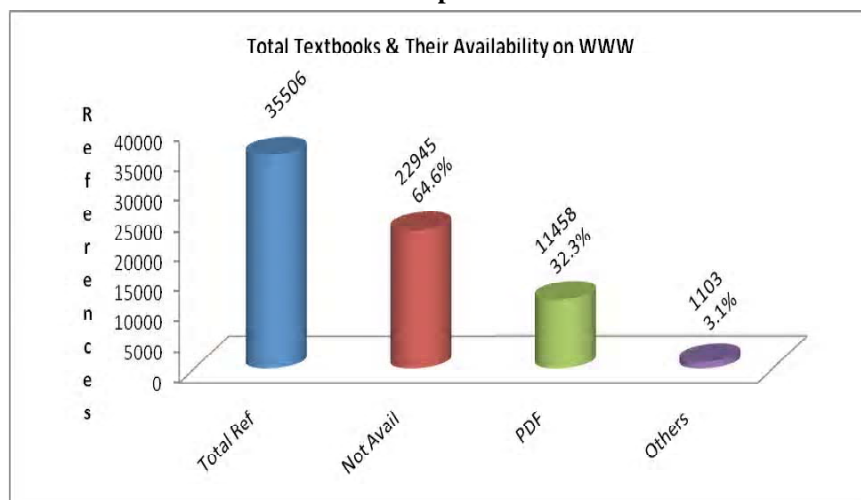
Inference: Graph-1 reveals that majority of references belong to books in the English language (71.45%), followed by books in other languages (11.16%) Hindi language (6.29%). References from serials constitute 7.55%, followed by references from numerous websites (3.54%).

7.2 TOTAL TEXTBOOKS AND THEIR FULL-TEXT PDF AVAILABILITY ON WWW

Tables and Graphs from data related to textbooks in English language have been created to depict the availability of full-text PDF versions of UG and PG courses offered by the University of Delhi. There are some courses/papers where no English language books have been listed in the references. An analysis of the available full-text PDF versions of textbooks has also been carried out based on the faculties offering these UG and PG courses.

Table-1: Total Textbooks and Their Full-Text PDF Availability

Faculties	Undergraduate (UG)					Postgraduate (PG)					Total Ref (UG+PG)
	No of Courses	Open Sources	PDF Drive	Not Found	Grand Total	No of Courses	Open	PDF Drive	Not Found	Total	
Applied Social Sciences and Humanities	12	19	472	1,197	1,688						1,688
Arts	34	153	859	1,521	2,533	26	131	1,270	2,406	3,807	6,340
Cluster Innovation Centre	2	24	61	115	200	1	1	46	60	107	307
Commerce and Business Studies	5	11	271	987	1,269	4	33	328	684	1045	2,314
Education	1	15	18	74	107						107
Inter-Disciplinary and Applied Sciences	5	4	501	1,076	1,581	7	3	451	277	731	2,312
Law						2	150	153	804	1,107	1,107
Management Studies						3	27	565	988	1,580	1,580
Mathematical Sciences	15	8	530	411	949	3		250	226	476	1,425
Music and Fine Arts	5	4	18	320	342	3	12	2	222	236	578
Science	20	129	1,020	2,663	3,812	10	11	982	1,132	2,125	5,937
Social Science	13	86	778	2,432	3,296	7	282	2,883	5,350	8,515	11,811
Grand Total	112	453	4,528	10,796	15,777	66	650	6,930	12,149	19,729	35,506

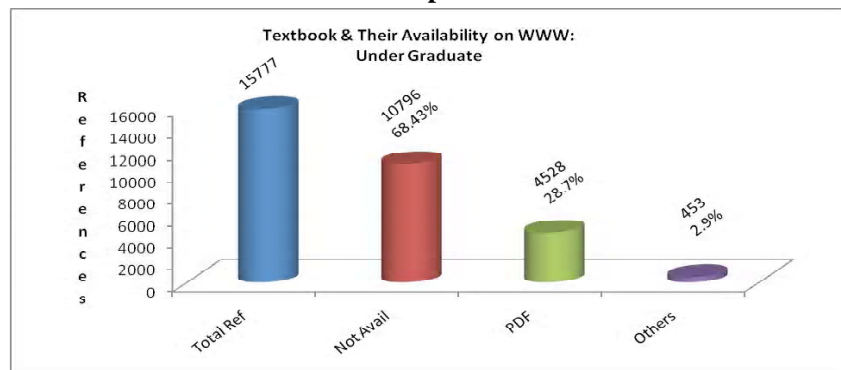
Graph-2

An analysis of Table-1 and Graph-2 reveals that full-text PDF versions of 35.4% (12,561) of total textbooks (35,506) are available on WWW. Out of the available full-text textbooks, 32.3% (11,458) are available from PDF DRIVE and 3.1% (1,103) from other open sources.

Inference: Full-text PDF of nearly one-third of the textbooks listed in UG and PG courses in the English language are available on WWW.

7.3 UG TEXTBOOKS AND THEIR FULL-TEXT PDF AVAILABILITY ON WWW

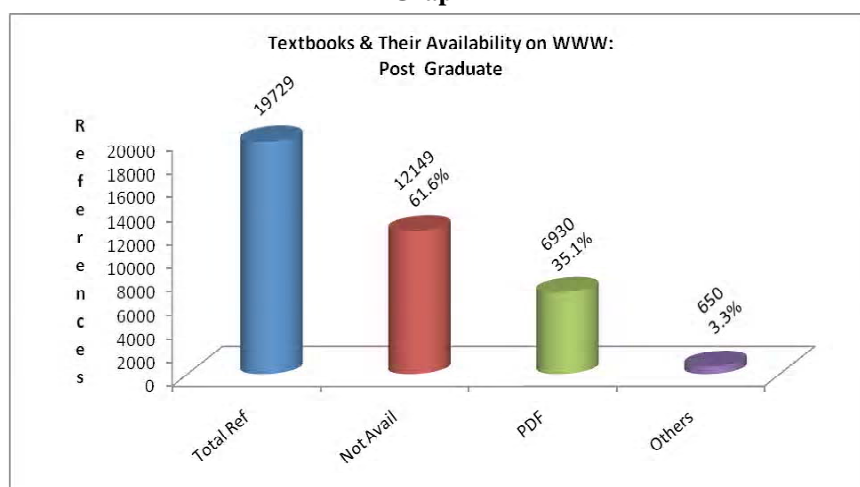
Data has been further analyzed based on courses offered by various faculties at UG and PG levels. Graph-3 given below provides a glimpse of the availability of full-text PDF versions of textbooks for UG courses offered by the University of Delhi.

Graph-3

An analysis of Table-1 and Graph-3 reveals that there are 15,777 textbooks in the English language listed in various courses/papers offered by the different faculties at the UG level. While analyzing their availability on WWW, it has been found that full text PDF versions of 31.6% (5,035) of total UG textbooks are freely available. However, the most accessible UG textbooks are available on PDF DRIVE (28.7%), and the remaining (2.9%) are available on other open sources.

Inference: Full-text PDF of 31.6% textbooks listed under UG courses/papers offered by the University of Delhi are available on WWW.

Graph-4



In-depth analysis of Table-1 Graph-4 further reveals that out of 35,506 textbooks, 19,729 are listed in PG courses offered by the various faculties of the University of Delhi. While analyzing the availability of full text PDF versions of these PG textbooks, 38.4% (7,560) of the total are available on WWW. Further analysis of available textbooks shows that 35.1% (6,930) PG textbooks are available on PDF DRIVE and 3.3% (650) on other open sources.

Inference: Full-text PDF of 38.4% textbooks are available on WWW. Further generalization of the analysis is concluded that there are more chances of full text PDF availability of PG textbooks (38.4%) than UG (31.6%).

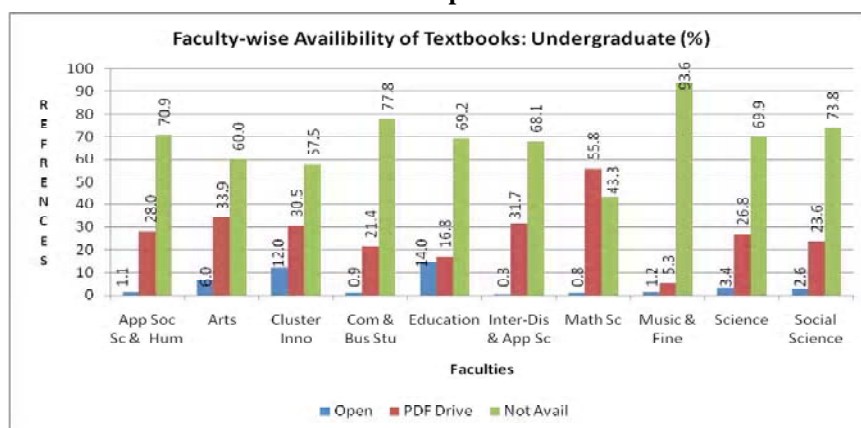
7.4 FACULTY-WISE AVAILABILITY OF TEXTBOOKS AT UNDERGRADUATE LEVEL

The study on the availability of full text PDF versions of textbooks has also been done based on courses offered by different faculties of the University of Delhi. This analysis has been based on courses offered at UG and PG levels.

Graph-5, given below, analyses the availability of textbooks from UG courses. The Graph shows an exciting picture in the case of the Faculty of Mathematical Sciences. It reveals that full text PDF versions of more than half of the textbooks (56.7%) given in various UG courses offered by the Faculty of Mathematical Sciences are available on WWW. The Faculty of Mathematical Sciences is followed by Cluster Innovation Centre (42.5%) and Faculty of Arts (40%) for the availability of full text PDF versions of textbooks for UG courses available on WWW. The textbooks of UG courses/papers offered by the Faculty of Music and Fine Arts has the lowest (6.4%) availability of full text PDF versions on WWW.

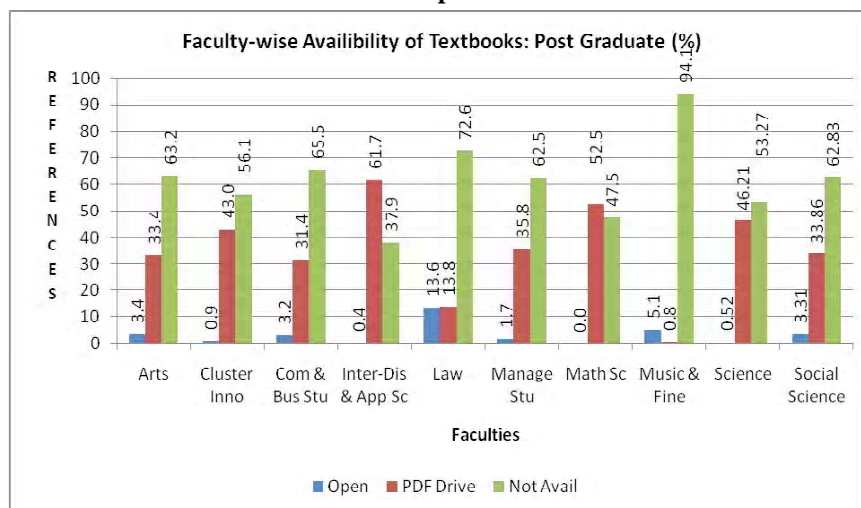
The faculties where availability of full text PDF versions of textbooks ranges between 26% to 32% are the Faculty of Inter-Disciplinary and Applied Sciences (32%), the Faculty of Sciences (31.1%), the Faculty of Education (30.8%), the Faculty of Social Sciences and Humanities (29.1%), and the Faculty of Social Sciences (26.2%).

Graph



7.5 FACULTY-WISE AVAILABILITY OF TEXTBOOKS AT POSTGRADUATE LEVEL

Graph-6 below describes the faculty wise availability of full text PDF versions of textbooks listed in postgraduate courses/papers offered by various faculties of the University of Delhi.

Graph-6

While analyzing the availability of full text PDF versions of textbooks listed in PG courses/papers from various faculties of the University of Delhi, an almost similar trend as that with the references of UG courses has been observed as depicted in Graph-6. However, compared to the UG courses, a more significant percentage of full-text PDF versions were found to be available on WWW of textbooks listed for PG courses/papers.

The analysis revealed that 62.1% of full-text PDF versions of textbooks of PG courses/papers of the Faculty of Inter-Disciplinary and Applied Sciences are available on WWW. It has been followed by the Faculty of Mathematical Sciences (52.5%), and the lowest available number of textbooks belonged to the Faculty of Music and Fine Arts. In other words, two-third of total textbooks of PG courses offered by the Faculty of Inter-Disciplinary and Applied Sciences are available either on PDF Drive (61.7%) or on Open Sources (0.4%). It is also worth noticing that more than half the textbooks of the PG course offered by the Faculty of Mathematical Sciences are available on WWW. The lowest availability of full text PDF versions belongs to the Faculty of Music and Fine Arts in UG and PG.

The availability of full text PDF versions of textbooks listed in PG courses/papers offered by different faculties are as follows: the Faculty of Sciences (46.7%), the Cluster Innovation Centre (43.9%), the Faculty of Management Studies (37.5%), the Faculty of Social Sciences (37.2%), the Faculty of Arts (36.8%), the Faculty of Commerce and Business Studies (34.6%), the Faculty of Law (27.4%).

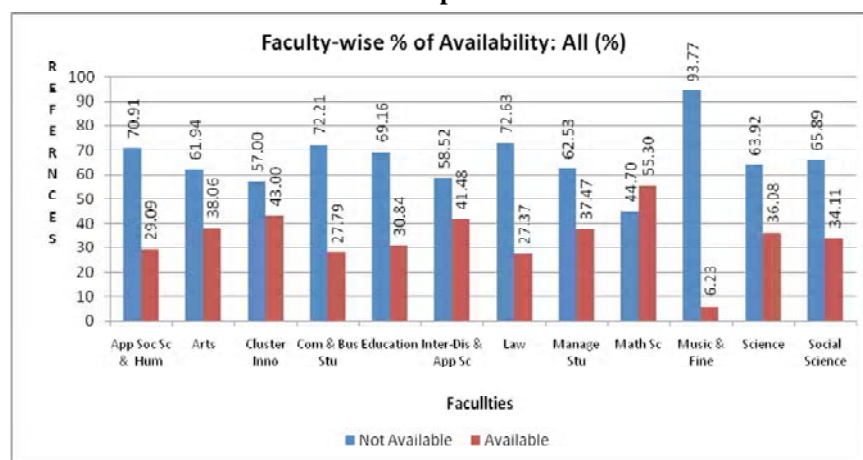
Inference: There is more possibility of finding full-text PDF versions of references listed in PG courses than UG courses offered by the University of Delhi. The full text PDF versions of textbooks of the courses/papers offered

by the Faculty of Inter-Disciplinary and Applied Sciences are most likely to be found on WWW. In contrast, in the case of the Faculty of Music and Fine Arts it is least likely.

7.6 TOTAL AVAILABILITY OF FULL-TEXT PDF VERSIONS ON WWW

A comprehensive analysis, faculty-wise, of all the full text PDF versions of textbooks available on WWW (PDF Drive+Open Sources) irrespective of UG level or PG level, has been carried out. This result for the same has been depicted in the form of given below Graph-7.

Graph-7



An analysis of Graph-7 shows that full text PDF versions of textbooks on WWW from all the sources are highest in the Faculty of Mathematical Sciences, where available resources (55.3%) have surpassed the non-available (44.7%). The Faculty of Mathematical Sciences is followed by the Cluster of Innovation Centre (43%) and the Faculty of Inter-Disciplinary and Applied Sciences (41.48%). Subsequently, these are followed by different faculties, including the Faculty of Arts (38.06%), the Faculty of Management Studies (37.47%), the Faculty of Sciences (36.08%), the Faculty of Social Sciences (34.11%), the Faculty of Education (30.84%), and the Faculty of Law (27.37%). The lowest availability of full text PDF versions of textbooks has been accounted to the Faculty of Music and Fine Arts, where only 6.23% of textbooks are available on WWW.

Inference: Full-text PDF versions of textbooks listed by the Faculty of Mathematical Sciences and the Faculty of Inter-Disciplinary Applied Sciences in their different courses/papers offered are more like to be found on WWW than Social Sciences or Arts faculties.

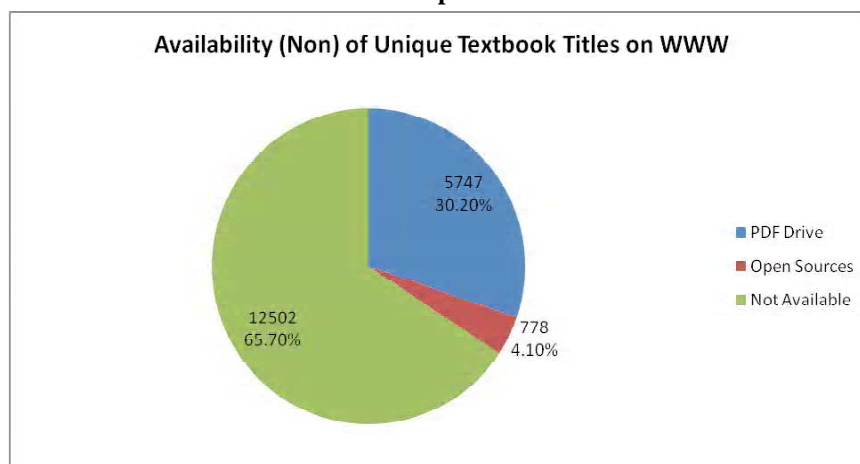
7.7 TOTAL UNIQUE TEXTBOOKS TITLES AND THEIR AVAILABILITY ON WWW

Table-2 below depicts those 19,027 unique textbooks titles cover 35,506 English language book references listed in all the courses/papers and their availability on WWW. This means that a single textbook title may have been listed as a reference in more than one paper/course.

Table-2: Availability (Non) of Unique Titles

Source	Availability(Non) of	% Of Availability (Non) of
	Unique Titles	
PDF Drive	5747	30.2
Open Sources	778	4.1
Not Available	12502	65.7
Total	19027	100

Graph-8



Analysis of Table-2 and Graph-8 reveals that out of 19,027 unique textbooks titles, 5,747 (30.2%) are available as full text PDF versions on PDF Drive, whereas 778 (4.1%) are available on other open sources. In total, the full text of 6,525 (34.4%) unique textbooks titles are available on WWW. These 6,525 titles cover 12,561 references in English language books, accounting for 35.38% of the English language references.

Inference: Almost one-third of total references of textbooks in the English language listed in various courses of UG and PG are available on WWW.

8 CONCLUSION

Full-text PDF versions for more than one-third of textbooks (12,561, 35.4%) in the English language listed in UG and PG courses/papers of the University of Delhi are available on WWW. The primary source of free pdf full text is PDF Drive, accounting for 32.3% (11,458) of total textbook. Other open sources contribute 3.1% (1,103). Full-text PDF of 31.6% of textbooks listed under UG courses/papers and 38.4% of textbooks of PG references offered by the University of Delhi are available on WWW. It is further concluded that there are more possibilities of finding Full-text PDF of PG courses than UG courses offered by the University of Delhi. Full-text PDF of textbooks of the courses/papers offered by the Faculty of Mathematical Sciences (55.3%) and Faculty of Inter-Disciplinary and Applied Sciences (41.5%) are more likely to be found on WWW. In contrast, in the Faculty of Music and Fine Arts case, it is least (6.3%) likely. Out of a total (19,025) unique textbook titles, full text PDF versions of 6,525 (34.4%) accounting for 12,561 references are available on WWW. PDF Drive accounts for 30.2% (5,747) of total unique textbooks titles, whereas other open sources contribute 4.1% (778).

9 SUGGESTIONS

The non-availability of listed textbooks in digital format and skyrocketing prices, if available have made it very difficult for academic institutions to acquire these e-textbooks. Keeping these in view, the following suggestions are being put forward:

- The faculties should recommend alternative titles available on open sources.
- The faculties should concentrate on creating their academic material fulfilling the demands of the students for syllabus textbooks and make them available on open sources.

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