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## Review Article

# Evaluating the factors of GSDL using Delphi for the Academic Libraries

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### ABSTRACT

Based on the opinions of experts, this study aims to identify the key GSDL implementation-relevant factors for academic libraries. In the field of libraries, MCDM techniques are rarely used. The authors of this study employed the Delphi technique to assess the elements that are crucial for software implementation. As part of a review of the literature, many research relating to the use of MCDM are examined. By applying the Delphi method, the study's findings show which factors are most important. The findings will be useful from a theoretical and management perspective when making decisions about the software's implementation.

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## 1. Introduction

In spite of the fact that the Delphi strategy has existed as an authentic exploration technique for more than fifty years, there is limited information about the Delphi Technique among the Library domain professionals and a few specialist, academician from the library field used this technique. A few know about how the technique has been utilized in the Library and Information Science research field and how the information may control future LIS Delphi uses.

The reason is also that a few review articles are available to introduce the significance of Delphi use in LIS. Doubts made by researchers who use the Delphi strategy suggest that the contemplations created by experts are generally the best musings that the examiner can lead this assessment without carrying precarious inclination into the iterative association, and that sufficient response rate can be cultivated for this kind of study.

As found in industry and entertainment, as often as possible an outsider's perspective can truly convey the most supportive novel musings. In any case, perceiving potential untouchables that would be prepared for giving important analysis is fundamentally more irksome than recognizing the experts in a given region. The peruser of an assessment that utilizes Delphi should be pleased that the researcher unflinchingly accumulated the responses in a strange and sporadic solicitation as to decrease tendency. The amount of investigation individuals for the first round of the Delphi should be extremely tremendous (particularly assuming that the survey will be scattered on the web or through mail). This is a result of an unquestionable level of consistent misfortune that routinely occurs between emphasis of the methodology as respondents lose income in reliably completing a comparable study.

## 2. Objectives of the Present Study

The target of the current work is to assess significant Open Source Digital Library Software (OSS-DL) accessible

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free and ideally under Open Source License terms and conditions. The principle objective or objective of the current work can be additionally partitioned into the accompanying sub-objectives or auxiliary goals:

1. To identify of important factors of the GSDL digital library softwares
2. To find out the prioritization of softwares based on the factors

### 3. Scope of Present Work

There are couples of OSS-DL accessible today. Every product satisfies a specific need. Since every one of the product has diverse configuration, have utilized various principles, satisfies various requirements for making DL, it was felt important to concentrate all the major right now accessible Open Source Software for Building Digital Libraries with different elements which will help libraries particularly from non-industrial nations what highlights are upheld by every software, what are the establishment steps, which programming has maintainability to remain in future, what are the benefits/ weaknesses of utilizing every software, the number of clients are utilizing the software.

### 4. Literature Review

It is assumed that DEMATEL method, one of the decision making methods with various criteria may be used to determine the relationship between the factors with the analytical and matrix-based decision-making method (Kaushik & Somvir, 2015; Liu, et al.,2018; Govindan, et al.,2016; Sarioglan & Avcikurt, 2022).<sup>1-4</sup> Rathee et al. (2020) briefed about the prominent features of efficient libraries that entailed content management, better usability, easy techniques of information retrieval and search as well as a user-friendly interface. Along with it, authorization and authentication features, privacy policy, metadata, content classification, acquisition are significant to install an efficient and state of the art library. They asserted that library softwares are efficient to use as the first priority for staff, students, and researchers. The institutions emphasize implementation of best practices in a centralized library management.<sup>5</sup> Human resources, competent workforce is the most crucial factor in establishing and running a project. Budget allocation considering all expected cost components for setting up and operating to maintain the online library/ repository is a prerequisite for establishing the project (Rathee, 2019).<sup>6</sup> Lata & Somvir (2019) made a study regarding creation of the digital library to assimilate and disseminate the information using the famous OSS GSDL. In the study the literature related to digital library and GSDL, documents related to software and practical approaches of creation of digital library at GITAM are used.<sup>7</sup>

### 5. Materials and Methods

An institution must make progress and show that its efforts are beneficial in order to guarantee the success of excellent library services (Anunobi and Ezeani, 2011).<sup>8</sup> Software selection is never an easy task. The library staff has a duty to treat the institution's stakeholders with the utmost respect (e.g. staff, students). As a result, they ought to make every effort to make using the library as easy and seamless as feasible. It is impossible to ignore the numerous difficulties that arise in the creation of digital libraries (such as content and administrative support). But despite these difficulties, the implementation of any programme in a library must take into account personnel, quality, content, users, policies, technology, and functionality (Anunobi and Ezeani, 2011; Xi et al., 2018).<sup>8,9</sup>

Delphi is the most widely used technique found in the current literature to solve complex problems (Kumar and Dash, 2017; Kumar et al., 2017, 2018; Hu et al., 2018; Hatefi and Tamosaitiene, 2019).<sup>10-14</sup> When specialists have a wide range of options to consider, they could struggle to choose the optimal option (Hsu et al., 2010).<sup>15</sup> An efficient strategy must be used for the task of analysing the possibilities, which can quickly become laborious. The Delphi approach can effectively complete this tiresome task (Hsu et al., 2010; Kumar et al., 2017).<sup>11,15</sup> The consistency of the responses and the feedback mechanism distinguish the group judgments made using the Delphi method from those made using other methodologies; this is a challenge that all researchers encounter (Kumar et al., 2017).<sup>11</sup>

### 6. Analysis of Data GSDL

The responses for the different factors of GSDL software is given in the below table.

#### 6.1. Interpretation

After calculation, the alpha value for the GSDL is 3.73 calculated. The average value of factors is highlighted which have the value greater than alpha i.e. 3.73. As per the calculation factors Content Acquisition F1, Content Management F2, Meta Data Submission and Support F3, Information search and retrieval F5, Customization, System Support/ Maintenance F10, Security F12, Storage F14, Backup and Res tore F15, Copyright issues F17, Usability F20.

Content Acquisition is the most important factor with score 4.20, after that Copyright issues with score 4.05, than Usability with 3.95, than Information search and retrieval, Meta Data Submission and Support and Storage with same value of 3.90, than Content Management and Security with same score of 3.80, than Backup & Restore and Customization, System Support/ Maintenance with same score of 3.75.

**Table 1:** Perception about GSDL

	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10	F11	F12	F13	F14	F15	F16	F17	F18	F19	F20
E1	5	4	4	5	4	4	3	4	4	3	4	5	4	4	3	5	3	4	2	5
E2	5	4	3	4	5	4	4	3	4	4	2	5	4	4	5	4	5	3	3	3
E3	3	5	4	5	4	4	4	4	4	3	3	4	4	3	4	5	4	5	5	5
E4	5	4	3	4	4	3	4	4	4	4	4	4	3	4	2	3	5	2	3	4
E5	5	3	5	4	3	3	5	2	3	3	5	4	5	3	5	4	3	3	4	5
E6	4	3	3	2	2	4	4	3	3	3	2	2	2	3	3	2	2	3	3	2
E7	4	5	4	5	5	3	5	3	3	3	3	3	4	5	4	5	4	3	4	3
E8	4	4	5	3	4	3	4	3	5	5	5	5	4	4	5	4	4	4	4	3
E9	5	4	4	4	4	5	3	3	2	5	3	4	5	4	4	4	2	5	3	3
E10	5	3	5	5	4	3	5	5	4	4	4	3	5	3	5	5	4	4	3	3
E11	3	4	4	2	4	3	4	5	1	3	5	4	3	5	5	3	4	4	4	5
E12	4	4	3	4	4	3	4	3	2	4	5	5	4	5	3	4	4	3	5	3
E13	3	3	4	4	4	4	3	4	5	3	4	3	3	3	4	4	4	4	3	4
E14	4	5	4	2	3	3	4	3	2	5	3	4	4	5	4	2	3	5	4	4
E15	5	3	4	3	5	4	3	5	2	3	3	3	3	4	4	4	4	3	5	5
E16	4	5	2	5	4	3	2	4	3	4	3	3	3	4	2	5	3	5	1	5
E17	4	3	5	3	3	4	3	3	5	5	2	4	2	3	1	1	5	4	2	4
E18	3	4	4	2	3	3	4	3	4	2	3	4	4	3	5	4	2	3	5	5
E19	5	4	3	4	4	4	3	5	3	5	4	3	3	4	3	3	4	5	5	4
E20	4	2	5	3	5	3	4	2	1	4	3	4	4	5	4	4	5	3	5	4
Total	84	76	78	73	78	70	75	71	64	75	70	76	73	78	75	75	74	75	73	79
Average	*4.20	*3.80	*3.90	3.65	*3.90	3.50	*3.75	3.55	3.20	*3.75	3.50	*3.80	3.65	*3.90	*3.75	*3.75	3.70	*3.75	3.65	*3.95
Alpha	3.73																			

The most considered factor is Content Acquisition and less is Software Installation with descending values as Content Acquisition > Copyright issues > Usability > Information search and retrieval > Metadata Submission and Support > Storage > Content Management > Security > Backup and Restore > Customization, System Support/ Maintenance > User friendly > Classification > Extensibility > Architecture of Software > Advanced Feature > Interoperability > Hardware/ Software Requirements > Authorization and Authentication > Privacy and Management > Software Installation.

## 7. Findings

After analyzing the data using Delphi Approach and comparing it, there are some findings. GSDL has the most considered factor is Content Acquisition and less is Software Installation with descending values as Content Acquisition > Copyright issues > Usability > Information search and retrieval > Metadata Submission and Support > Storage > Content Management > Security > Backup and Restore > Customization, System Support/ Maintenance > User friendly > Classification > Extensibility > Architecture of Software > Advanced Feature > Interoperability > Hardware/ Software Requirements > Authorization and Authentication > Privacy and Management > Software Installation.

## 8. Implications

### 8.1. Theoretical implications

These implications are used for the further research work, study and creating model. From a theoretical perspective the study contributes a lot in the library science domain for this researcher to complete the research based on decision making approach Delphi through extensive literature review and experts' opinion.

### 8.2. Practical implications

The GSDL software Content Acquisition, Copyright issues, Usability, Information search and retrieval, MetaData Submission and Support, Storage, Content Management, Security, Backup & Restore and Customization, System Support/ Maintenance are the important factors.

## 9. Conclusion

For knowledge management and disseminating the same, digital libraries are the best way. For creation and success of the project, the right software selection is very important. For selection of software the different factors should be kept in view, and for this the decision making approaches are the best way for the same. Delphi is one of the methods which is very helpful for the success of a project.

While selecting the software the librarians / managers should be noted that for the GSDL software Content Acquisition, Copyright issues, Usability, Information search and retrieval, MetaData Submission and Support, Storage,

Content Management, Security, Backup & Restore and Customization, System Support/ Maintenance are the important factors.

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None.

## 11. Conflict of Interest

None.

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