

## IMPORTANCE OF SUBJECT GATEWAYS IN SOCIAL SCIENCE RESEARCH: AN ANALYTICAL STUDY

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**ABSTRACT -**

Internet is one of the valuable and probably most used information resources nowadays and gaining popularity not only among the general public but also among the researchers. Unfortunately, Internet is not well organized and information retrieval often can be difficult and annoying process. Sometimes, internet resources lack quality, authenticity, relevancy and accuracy features. To resolve these issues researchers need more authentic, reliable and effective information system to access networked information, e.g. Subject Gateways, designed to help users to locate high quality information available on the Internet. The present article analyses the awareness among the researchers regarding the use and effectiveness of subject gateways in social science research.

**Keywords :** Information explosion, Internet, information resources, Information retrieval, social science research, subject gateways

### INTRODUCTION

The introduction of digital information resources on Internet has revolutionized the academic world. The Internet is paving way for a great leap in the field of higher education and research (Babu, Sarda and Ramaiah, 2010). Unfortunately, Internet is not well organized and information retrieval often can be difficult and annoying process. With large amounts of information available on the Internet, users are finding it more and more difficult to access the desired information. Several tools are being designed to help users overcome the problem of ‘finding requisite bit of information’. Subject gateways are one such tool designed for a specific user group with interests in a specific subject area. Subject gateways are gaining popularity, as their design arises from the combined efforts of the subject specialists who give their expert advice on subject details (Munshi 2009).

Subject gateways are already familiar features of the world information landscape and fulfill a useful role in directing Internet users to quality information. Subject gateways are online services and sites that provide searchable and browseable catalogues of Internet-based resources. The gateways typically focus on a related set of academic subject areas. These sources are online and often linked up with other relevant and related sites for more information on the same area. The gateways do not “aim to replace other available tools”, but “hope to offer a complementary service which will provide a targeted and focused area for resource discovery for the ... academic community” (Moffat, 1996). Subject gateways perform an important role as a “middle-ware” agent. They sit between the user and the Web, helping the user discover relevant resources and delivering them in a usable format. The fundamental strength of gateways lies in human expertise and judgment in the selection of resources and the manual creation of metadata records. In essence they assist the information seeker to make sense of and to navigate an increasingly vast and dispersed array of information resources (Clark and Radcliffe, 2003).

### **Importance of Subject Gateways in Social Science research**

According to The National Institute of Social Sciences “the **Social Sciences** are as varied as the interests of humankind, but they share a fascination with human behavior and organizations. From the beginning of recorded history, humans have organized their societies using myriad systems-political, religious, economic, and social. Those organizational systems, and our understanding of human

behavior, evolve as we learn from the past and study the present”. (<https://www.socialsciencesinstitute.org/what-is-social-science>).

As per Indian Council of Social Science Research (ICSSR) the broad disciplines of study, within the domain of social sciences, are: (<https://www.icssr.org/research-projectsmajor-and-minor> )

- (i) Sociology and Social Anthropology;
- (ii) Political Science / Public Administration;
- (iii) Economics;
- (iv) International Studies;
- (v) Social Geography and Population Studies;
- (vi) Commerce and Management;
- (vii) Social Psychology;
- (viii) Education;
- (ix) Social Linguistics / Socio-Cultural Studies
- (x) Law / International Law
- (xi) National Security & Strategic Studies;
- (xii) Other allied Social Science disciplines (Library Science, Social Work, Media Studies, Modern Social History, Health Studies, Gender Studies and Environmental Studies, Diaspora Studies, Area Studies, Sanskrit-Society & Culture, etc.) to promote interdisciplinary and multidisciplinary research.

Social science researchers constitute a major component of the user’s community of library and information centers. As observed, they are major consumer and generator of social science information. They suppose to have a significant role in the growth of the society as well as in the process of further growth and development of the discipline i.e. the social sciences. Research in social sciences deals with the behavior of people in their different roles, such consumers,

competitors, producers, executives, salespersons, leaders, workers, followers, teachers, students, opinion-makers, etc. Social research is a tool for social planning, prediction and control. Social research is generally normative emphasizing what is and what is not good for the economy, for the industry, for the consumers, for the students, for the stock-market and the like, and helps to contribute to social welfare (<https://www.mbaknol.com/research-methodology/significance-of-research-in-social-sciences/>).

Researchers of social science discipline are in search of quality information for their scholarly works and subject gateways came into existence to offer this prospect. Subject Gateways provides search facilities of relevant information sources on the Internet and are created, designed, maintained and reviewed by librarians/information professionals and/or subject experts with the aim of providing access to high quality sources of information and contain the full range of subject oriented internet material which negate the possibility of repetition in the search results. Following are some of the important aspects of subject gateways in social science research:

- One of the primary objectives of subject gateways is to assist information seekers to make sense of the "chaotic repository for the collective output of the world's digital printing presses", (Lynch, 1997)
- The subject gateway assures the user of quality by discovering; evaluating and describing selected resources from an otherwise chaotic universe of information, including both the "surface" and "deep" web. (Clark and Frost, 2002)

- The core-business of subject gateways to add value to third-party created Web resources.
- Databases are smaller and much more focused than the search engines.
- Subject gateways are valuable sources of information for users since they are subject-specific in nature.
- Subject experts and information professionals select, classify and catalogue Internet resources to aid search and retrieval for their users.
- Availability of adequate resource description helps users to assess the origin, content and nature of Internet resources, enabling them to decide if it is worth investigating further.
- Provide access to a quality-controlled collection of resource descriptions which users can search by keyword or browse by subject area.
- It provides categorization, classification or indexing of the collection which are useful to the user.
- Subject gateways apply strict, usually formalized selection criteria to resources included in their repositories, taking into account such as the authority, accessibility, currency and subject relevance of the resource.

## REVIEW OF LITERATURE

The proliferation of information available on Internet raised a number of issues in relation to the quality of information and access to it. According to Pitschmann (2001)(as in Poonkothai, 2007) Internet search results can be so overwhelming that the user cannot be expected to evaluate them in a reasonable length of time.... even the artificial intelligence technologies employed by the major Web discovery tools are

insufficient to retrieve and adequately evaluate scholarly content. Kerr and MacLeod (1997) also argued that 'as the indexes of large search engines are created by indiscriminate trawling of the Internet, there is no emphasis on quality of resources retrieved.' The explosion of information on the Internet, then, and the need to tame the potential chaos, was one of the reasons why gateways became so popular and prevalent; as Dempsey points out, there are now 'portals everywhere,' (Dempsey, 2000).

Dempsey (2000) says that, "Subject gateways are Internet services which support systematic resource discovery. They provide links to resources (documents, objects, sites or services) predominantly accessible via the Internet. The service is based on resource description. Browsing access to the resource via a subject structure is an important feature".

Development of the internet and the world wide web has made impact on the libraries like never before. Ownership of documents has given way to access, forcing a rethinking of the functions and services to be performed by libraries for providing the specific documents/information needed by users from the ocean of digital resources. One such service designed to provide access to evaluated, and selected information resources pertaining to a particular subject field is the subject gateway service. (Kanetkar, 2014). A subject gateway allows libraries and related organizations to explore the usefulness of their subject expertise in the organisation of knowledge in the word of network -based, digital information. (Patel and Patel, 2011).

Internet based subject gateways are concerned both with taking advantages and opportunities

offered by the Internet, and also acting as one possible solution to the problem of information retrieval and quality control which will be more effective than other solutions such as search engines (which lack discrimination), metadata (which have to be added by authors), classification schemes, catalogue entries or the use of PICS (Platform for Internet Content Selection). (Mackie and Burton, 1999).

Maharana and Panda (2003) provides an insight into the concept of "quality-controlled subject gateway". They analyse 4,215 out of 19,765 records available in 19 major forms covering 17 broad subject headings in the field of social sciences on the Net through Social Science Information Gateway (SOSIG) Web site. Through this article they discusses the growth, salient features, search facilities, and subject-wise collections of SOSIG.

Ferguson (1995) describes experience gained through working with UK social scientists, in the training and raising awareness of the uses of networked information. He further explains the efforts to address the problems associated with information discovery and retrieval by the setting up of the World Wide Web (WWW) based Social Science Information Gateway (SOSIG).

## **OBJECTIVES OF THE STUDY**

The study is pursued to analyze the role, value and effectiveness of existing Subject Gateways in current Social Science research. This study is also aimed at understanding the information seeking behavior of the social science researchers which will enable the investigators to discover the extent of awareness and patterns of use of subject gateways, to analyze the relevance of services, to

measure service efficiency level and identify what adjustments are needed in successful delivery of services through subject gateways.

## METHODOLOGY

The methodology for the present study involves three approaches:

i. Literature Review

A chunk of available literature on ‘subject gateways’ and ‘social science research’ has been studied and reviewed to analyse and evaluate the development, role, value and effectiveness of Subject Gateways in Social Science Research.

ii. Case Study

The case study method is a very popular form of qualitative analysis and involves a careful and complete observation of a social unit, be that unit a person, a family, an institution, a cultural group or even the entire community. The present study involves case studies of following 6 renowned Subject Gateways in Social Sciences:

- SSRN <https://www.ssrn.com/index.cfm/en/>
- SocioSite <https://www.sociosite.net>
- INFOPORT  
<https://infoport.inflibnet.ac.in/index.aspx>
- The WWW Virtual Library <http://vlib.org>
- The Free Library  
<https://www.thefreelibrary.com>
- H-Net: Humanities and Social Science Online <https://www.h-net.org>

Official websites of these Subject Gateways are visited and an exhaustive study has been conducted by analyzing their objectives, collection, classification schemes used, services, quality, currency, and effectiveness in Social Science research.

iii. User survey

In this present study, user survey method was adopted to assess the use and effectiveness of Subject Gateways in Social Science Research. A structured questionnaire was used to collect data from Social Science researchers. As the institutions are closed due to Covid-19 pandemic situation it becomes impossible to interview the researchers physically. Survey questionnaire was designed in Google form and circulated through WhatsApp Group. Altogether, 30 questionnaires were distributed to respondents and 24 were returned successfully with a response rate of 80 %.

## ANALYSIS AND DISCUSSION

### Demographic information

The demographic profile of respondents reveals gender, and age group which are summarized below:

### Demographic Information – Gender

Total 24 participants responded, majority of which are female 14 (58.3%) followed by 10 (41.7%) male.

**Table 1: Demographic information - Gender**

Variable	Category	Frequency (N=24)	%
Gender	Female	14	58.3
	Male	10	41.7
	Others	0	0
<b>Total</b>		24	100

**Demographic Information – Age Group**

Age wise break-up depicts that 4(16.67%) respondents belongs to the age group of 20-25 years followed by 9 (37.5%) are in the age group

of 25-30 years, 8 (33.33%) are in 30-35 years while 4(12.5%) falls in the range of 35-40 years. So the majority of the respondents fall under the age group of 25-30 years.

**Table 2 : Demographic information - Age group**

Variable	Category	Frequency (N=24)	%
Age Group	20-25	4	16.67
	25-30	9	37.5
	30-35	8	33.33
	35-40	3	12.5
<b>Total</b>		24	100

**Table 3: Types of respondents**

Variable	Category	Frequency (N=24)	%
Primary role of the respondents	UG Student	1	4.2
	PG Student	14	58.3
	M.Phil Scholar	2	8.3
	Ph.D. Scholar	1	4.2
	Lecturer	5	20.8
	Librarian	1	4.2
<b>Total</b>		24	100

Majority of the respondents are Post Graduate Students 14 (58.3%) followed by Lecturers 5 (20.8%), M. Phil. Scholar 2(8.3%) and 1 (4.2%) respondent each from the groups of Ph.D. Scholars, Lecturers and Librarian. This shows the diverse categories of respondents.

**Preferred format of Information**

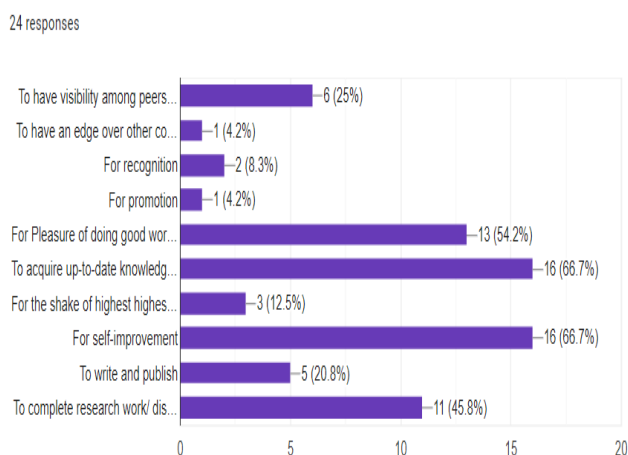
Following table illustrates the preferred format of information by the Social Science researchers. Out of 24 respondents, 17 (70.8%) preferred information both in print and electronic format. Among the remaining, 6 (25%) preferred information only in electronic format and 1 (4.2%) preferred information in print format.

**Table 4 : Preferred format of Information**

Variable	Category	Frequency (N=24)	%
Preferred format of Information	Print	1	4.2
	Electronic	6	25
	Both	17	70.8
<b>Total</b>		24	100

**Motivation behind seeking information**

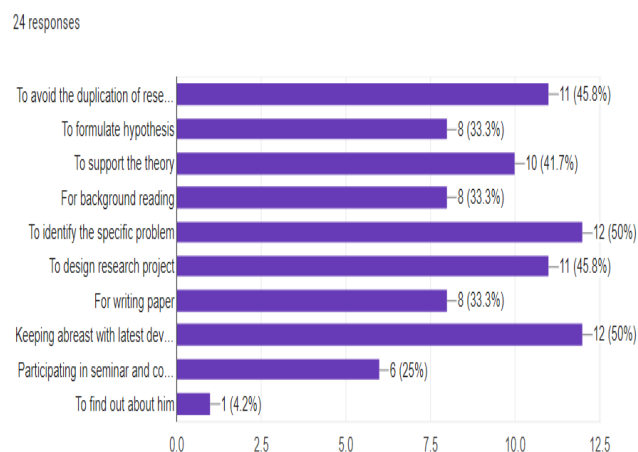
Following figure reflects the motivational reasons behind collecting or seeking information by the social science researchers. According to 16 (66.7%) respondents, motivation behind seeking information is to acquire up-to-date knowledge and for self-improvement.



**Figure 1: Motivation behind seeking information**

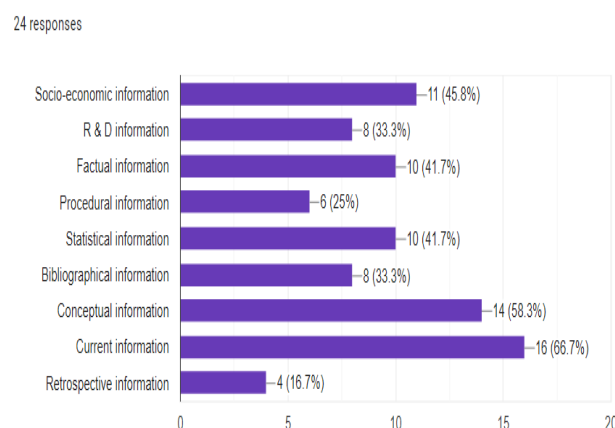
**Purpose of collecting information**

Respondents are asked about the purpose for which they collect information or use the collected information. Out of 24 respondents, 12 (50%) voted for the issue of identifying specific problem and keeping abreast with latest developments in the specific subject field. This will help us to assess the information seeking behavior of the social science researchers.



**Figure 2: Purpose of collecting and using information**

**Which type of information you required for your research?**



**Figure 3: Types of information required for social science research**

Above chart reflects the information need of the respondents. 16 (66.7%) out of 24 seek current information for their research. 14 (58.3%) out of 24 preferred conceptual information. Socio-economic information plays vital role in the research as stated by 11 (45.8%) respondents. Factual information and statistical information are

preferred by 10 (41.7%) respondents out of 24. 8 (33.3%) out of 24 required R&D information and bibliographical information. In case of procedural information, 6 (25%) out of 24 respondents voted for this category. Only 4 (16.7%) out of 24 respondents need retrospective information for their research.

**Table 5: Informal and interpersonal sources of information**

Variable	Category	Frequency (N=24)	%
Informal and interpersonal sources	Research guide/ Supervisor	13	54.1
	Fellow research scholars	1	4.2
	Subject Experts	7	29.2
	Superiors	0	0
	Subordinates/Juniors	0	0
	Colleagues (within the institution)	1	4.2
	Colleagues (outside the institution)	2	8.3
<b>Total</b>		24	100

**Preferred sources of information - Informal and interpersonal sources**

Information, be it from formal or informal sources, it must be authentic, reliable and accurate. In case of informal or interpersonal sources of information, 13 (54.1%) respondents preferred to get it from his/her Research guide or Supervisor followed by 7 (29.2%) from Subject experts. 2 (8.3%) respondents collect information from colleagues outside of their institution. 1 (4.2%) respondent selected colleagues inside of his/her institution for getting information. Remaining 1 (4.2%) respondent likes to collect useful information from his/her fellow research scholars.

**Difficulties of collecting information**

Respondents are asked about difficulties they are facing while collecting information. From the above chart we can infer that, 13 (54.2%) respondents are facing problems while collecting

information due to lack of time. 12 (50%) out of 24 respondents are unable to locate suitable information sources for their research. Sometimes materials are available in different languages, which in turn create problems for the 11 (45.8%) respondents to retrieve required information from these documents. 9 (37.5%) out of 24 respondents are unable to retrieve current information required for their research work. 8 (33.3%) among 24 respondents are lacking skill and competence to understand the research reports and statistical data which in turn create hindrance to retrieve information from these documents. As stated by 7 (29.2%) respondents, they are unaware about how to use abstracts and indexes to retrieve information from these documents. Researchers always prefer to have information as quickly as possible to conduct research, but 4 (16.7%) are complaining about not getting

required information on time. Sometimes library procedures are so complex that it creates obstacle for the researchers to collect information as pointed out by 3 (12.5%) out of 24 respondents.

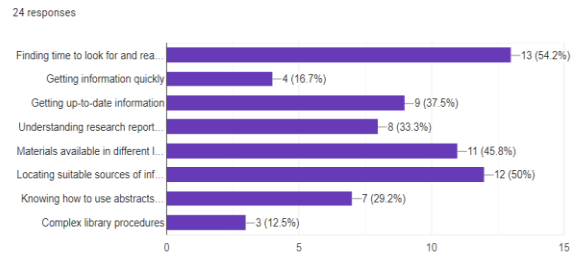


Figure 4: Difficulties of collecting information

Table 6: Frequency of Internet Usage

Variable	Category	Frequency (N=24)	%
Internet usage	Everyday	23	95.8
	2-3 times a week	1	4.2
	Once in a fortnight	0	0
	Once in a month	0	0
	Rarely	0	0
<b>Total</b>		24	100

**Frequency of Internet Usage**

Out of 24 respondents, 23 (95.8%) are using Internet on a daily basis and remaining 1 (4.2%) is accessing the Internet 2-3 times a week. This illustrates the growing importance of the Internet

in our information structure and the preference that people now have for finding information online.

Table 7: Awareness about Subject Gateways

Variable	Category	Frequency (N=24)	%
Awareness about Subject Gateways	Yes	12	50
	No	4	16.7
	May be	8	33.3
<b>Total</b>		24	100

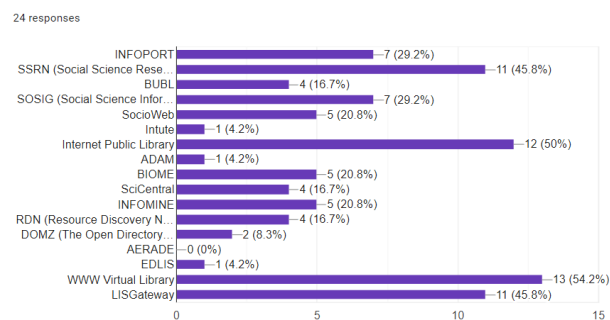
**Awareness about Subject Gateway**

For the present study, respondents are asked about whether they possess any awareness regarding Subject Gateways or not. 12 (50%) among the respondents replied ‘yes’ they have knowledge about the Subject Gateways. 8 (33.3%) possess vague concept about the

existence of Subject Gateways while 4 (16.7%) respondents stated that they have no knowledge about Subject Gateways.

As some of the respondents are not aware about Subject Gateways, surveyor asked them whether they have heard about Subject Gateways by

giving some examples. All responded that have came across some of these names but are not aware that these are called Subject Gateways. So there is some confusion regarding the terminologies used in this field. 13 (54.2%) respondents have acquaintance with WWW Virtual Library. 12 (50%) respondents heard about Internet Public Library and accessed it. LisGateway is another known Subject Gateway to 11 (45.8%) respondents. 11 (45.8%) came across SSRN during their research work, while 7 (29.2%) heard about SOSIG and INFOPORT respectively. 5 (20.8%) respondents are familiar with the name SocioWeb, BIOME and INFOMINE subject gateways respectively. BUBL, SciCentral, RDN are familiar to 4 (16.7%) respondents respectively. DOMS is known to 2 (8.3%) respondents. 1 (4.2%) respondent have familiarity with Intute, ADAM and EDLIS gateway respectively. AERADE is no recognizable to any of the respondents.



**Figure 5: Subject Gateway knowledge**

Respondents are asked about how they get information on subject gateways. In reply, 6 (25%) respondents found the concept of Subject Gateway while browsing documents (print or electronic), while 5 (20.8%) respondents gained knowledge from the research guide and another 5 (20.8%) from the professors. 4 (16.7%) respondents came across the concept of Subject Gateways while browsing Internet. 2 (8.3%) respondents hard about Subject Gateways during their visit to library. 1 (4.2%) respondent learnt about it in a seminar and remaining 1 (4.2%) selected ‘others sources’ option.

**Table 8: Sources of information about Subject Gateways**

Variable	Category	Frequency (N=24)	%
Information about Subject Gateway	Research guide	5	20.8
	Professors	5	20.8
	Browsing the Internet	4	16.7
	Documents (Print or electronic)	6	25
	Seminars/ Conferences	1	4.2
	Library	2	8.3
	Colleagues	0	0
	Others	1	4.2
<b>Total</b>		24	100

Beneficial features of Subject Gateways Subject Gateways have some features for which they are a reliable source to the researchers. According to

13 (54.2%) respondents Subject Gateway provide search, browse and access facilities. As per 12 (50%) respondents, they preferred Subject

Gateways as these supplement library website and are user specific. 11 (45.8%) respondents preferred Subject Gateways as the search results are specific, precise and provide links to relevant documents. To 10 (41.7%) respondents Subject Gateways includes only high quality, relevant resources which are very useful for their research. 8 (33.3%) respondents replied that as the Subject Gateways are prepared by the subject experts it is

a valuable source of information and very effective for their research. Subject Gateways are authentic that is why it is beneficial to 7 (29.2%) respondents. Continuity of links provided is ensured as an expert team working on Collection Management supports maintenance and updating of such links this is why 6 (25%) respondents are selecting Subject Gateways.

**Table 9: Preferred source of information for research**

Variable	Category	Frequency (N=24)	%
Which of the following you prefer to consult for your research?	Library collection	11	45.8
	Internet	4	16.7
	Subject Gateways	9	37.5
<b>Total</b>		24	100

**Preferred source of information for research**

Research is highly an intellectual activity. To conduct research one needs right information at the right time. To support their research work one have to produce documentary evidences for which the researcher must select the information sources judiciously. Above chart illustrates the preferences of a researcher while selecting an information source. 11 (45.8%) respondents preferred library collection over other sources. Subject-Specific Information Gateways are favoured by 9 (37.5%) respondents. Only 4 (16.7%) respondents preferred free Internet resources which is available through search engines.

**FINDINGS**

After selective literature review, analysis of information available on official websites of several Subject Gateways and studying the user’s

information need through user survey, we can observe following findings:

- Information needs of the users depend upon many factors, which may include activity, discipline, availability of information sources, social, political and economic surroundings, background, motivation, individual characteristics of the users. In pursuit of new knowledge, researcher would require a variety of new information on scientific, social, political, economic, cultural, linguistic, etc. areas to keep themselves up-to-date.
- With large amounts of information available on the Internet, users are finding it more and more difficult to access the desired information. Several tools are being designed to help users overcome the problem of ‘finding requisite bit of information’. Subject gateways are one such tool designed for a specific user

group with interests in a specific subject area. Subject gateways are gaining popularity, as their design arises from the combined efforts of the subject specialists who give their expert advice on subject details (Munshi, 2009)

- SSRN is the biggest open-access repository founded in 1994. SSRN's eLibrary provides 950,733 research papers from 503,172 researchers in more than 60 disciplines.
- Almost all the Subject Gateways are well organized and followed some selection policies.
- They followed some classification and resource description standards.
- User interface and browsing capabilities is overall user friendly.
- All the Subject Gateways under study are multilingual except INFOPORT, which only provide access to social science resources in English.
- Unlike others, INFOPORT provides access to content of Indian origin only
- There is lack of updating process for some of the Subject Gateways especially in case of the WWW Virtual Library and INFOPORT.
- Some of the resource links are dead. Links are either moved, stopped functioning or deleted permanently.
- Majority of survey respondents are female. Most of the respondents belong to the age group of 25-30 years.
- Majority of the researcher are P.G. Students.
- 70.8% respondents preferred information in both print and electronic format.
- According to 66.7% respondents, motivation behind seeking information is to acquire up-to-date knowledge and for self-improvement.
- Most of the researchers seek current information for their research.
- As an informal source of information, 54.1% respondents preferred to get it from his/her Research guide or Supervisor.
- Researchers are struggling to find information due to lack of time, inability to assess research reports and statistical data, lack of suitable sources of information among various issues.
- Researchers highly prefer internet resources. They accessing internet on daily basis.
- Almost 50% respondents are familiar with subject gateways. Some of them have some confusion regarding terminology associated with it, as Subject Gateways are variably called Subject-based Information Gateways (SBIGs), Subject-based Gateways, Subject Index Gateways, Virtual Libraries, Clearing Houses, Subject trees, Pathfinders, Meta Resources etc.
- 54.2% respondents have acquaintance with WWW Virtual Library. Most of them came across the concept of Subject Gateways while printed or electronic documents.
- As stated by the 70.8% respondents, Subject Gateways are beneficial for their research.
- 54.2% respondents favour Subject Gateways as these provide search, browse and access facilities.
- 48.8% researchers still prefer to consult library collection for their research.
- 37.5% researchers prefer to consult Subject Gateways where as only 16.7% are in favour of free Internet sources.

## **CONCLUSION AND RECOMMENDATIONS**

Internet is becoming the favorite zone for the researchers to collect information for their

scholarly work. Problem occurs when these information continues to grow exponentially without much thought for guidelines, safeguards and standards concerning the quality, precision, trustworthiness, durability, currency and authorship of this information (Poonkothai, 2007). This put a question mark on their research work and its quality. Subject Gateways on the other hand, provides search facilities of relevant information sources on the Internet and are created, designed, maintained and reviewed by librarians/information professionals and/or subject experts with the aim of providing access to high quality sources of information and contain the full range of subject oriented internet material which negate the possibility of repetition in the search results. As the subject experts and information professionals select, classify and catalogue Internet resources to aid search and retrieval for their users' these are way more reliable source for Social Science research.

For further scope of study we propose following recommendations:

- Subject Gateways should be dynamic in nature.
- Collection of a Subject Gateway must be exhaustive and well representation of the field.
- Selection and organization of resources should be performed by subject/field experts only.
- There must be some sort of peer review process before publishing any content in the Subject Gateway.
- The metadata describing the resources in the gateway must meet a recognized standard for resource discovery such as Dublin Core (DC), MARC standard etc.
- The resource description must be helpful to the users to assess the origin, content and nature of Internet resources, enabling them to decide if it is worth investigating further.
- Subject Gateway catalogue records should be simple and easily comprehensible.
- There must be some classification process to identify and categorize Subject Gateway resources.
- Controlled vocabulary systems such as subject headings list and thesauri should be used for indexing Subject Gateway resources.
- Efficacy of a Subject Gateway is greatly depends on regular maintenance.
- Periodical review and link checking of resources is utterly important,
- Dead links must be removed from the catalogue to keep it sleek and up-to-date.
- Validating records is significant for Subject Gateways to prove the accuracy of resources.
- Identifying and adding new resources to the Subject Gateway catalogue should be done as an ongoing process.
- Content of resources should be reviewed periodically, and cataloguing records should be revised accordingly.
- Catalogue records and links need to be deleted when a site can no longer be found, or its content no longer conforms to the collection scope and policy.
- Design and implementation of user-interface should be based on the information need of the 'Actual' users.
- Constant marketing and promotional strategies are required to popularize Subject Gateways among the researchers.

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