Introduction to Block 8

Data Analysis and Presentation of Research Findings

Transforming one's data gathered from different sources into research findings to be presented in a written form is a major task of a research process. The two processes are related with each other. We write only what we know and what we know is only that which we are able to gather by observing, communicating and interacting in the world around us.

Mills (1959: 5-7) said,

The sociological imagination enables its possessor to understand the larger historical scene in terms of its meaning for the inner life and the external career of a variety of individuals. It enables him to take into account how individuals, in the welter of their daily experiences, often become falsely conscious of their socialpositions. Within the welter, the framework of modem society is sought, and within that framework the psychologies of a variety of men and women are formulated. By such means the personal uneasiness of individuals is focused upon explicit troubles and the indifference of publics is transformed into involvement with public issues.

> That in brief, is why it is by means of sociological imagination that men now hope to grasp what is going on in the world, to understand what is happening in themselves as minute points of the intersections of biography and history within society

Mills explained why we become curious and how we come to inquire in the social aspects of our being. Further, Mills (1959: 195) pointed out.

> To the individual social scientist who feels himself a part of the classic tradition, social science is the practice of a craft. ...As a social scientist, you have to ... capture what you experience

> and sort it out. .. you must set a file, which is, I suppose, a sociologist's way of saying: keep a journal. Many creative writers keep journals; the sociologist's need for systematic reflection demands it. Under various topics in your file there are ideas, personal notes, and excerpts form books, bibliographical items and outlines of projects.

This is how C Wright mills advised sociologists to build their capacity to understand social reality. The purpose of giving these classical views C. Wright Mills is to point out that the craft of "doing sociology" is multi-dimensional and without undermining collection of data as per methodological orientation, it is important to also focus on its analysis and presentation. In Block 7 we had units focusing on field research and formatting and analysis of qualitative research data. We now turn application of newly available tools of information technology.

Block 8 on Data. Analysis and Presentation of Research Findings has five units. The first four units deal with the use of information and communication technology in analyzing the data gathered during social research and then also with the ways of presenting the research findings. The fifth unit contains guidelines for carrying out a fieldwork-based research project. Let us took at the content brief of each of the five units of Block 8.

Unit 29 on **Using Internet and Word Processor** tells us how to understand the basics of the Internet and its various utilities. It distinguishes between different types of resources available over the Internet and provides a list of Internet sites that can support social research.

Unit 30 on **Using SPSS for DataAnalysis** describes how to understand the use of SPSS in analyzing the data collected from different sources. Next, it tells us how to start and exit the SPSS programme and also to enter the data into a SPSS Data Editor. In addition, the Unit explains

how to import a data file from the Excel programme and use SPSS for simple statistical analysis of data.

Unit 31 on **Using SPSS in Report** Writing explains how to edit the SPSS output tables to suit the needs of writing a research report. It tells about creating and editing charts for graphic presentation of one's data analysis. It spells out how to copy the SPSS edited tables and charts directly in the research report.

Unit 32 on **Tabulation and Graphic Presentation** provides a general structure for presentation of research findings and explains the role of ICT in presentation of research findings. Next, it offers case studies and steps for report presentation.

Unit 33 on **Guidelines to Research Project Assignment** contains an overview of the course material of MSO 002 for building up guidelines for the research work to be undertaken by the learners. It provides the procedure to follow a research project in terms of its objectives and various stages of planning, executing the research and finally writing it up and submitting the same at the Study Centre for evaluation.

UNIT 29 USING INTERNET AND WORD PROCESSING TOOLS

Structure

29.1 INTRODUCTION

In the Units of Block 7 we mentioned that information and communication technology (ICT) provides a fair bit of aid to a sociologist who is engaged in studying social reality. Unit 29 explains how to use the features of the new technology. This Unit explains what is the Internet and how it helps a researcher in various ways. It is quite possible that you are already aware of such inputs and in that case the contents of this Unit would appear to you quite elementary but for

those who are yet to become familiar with this revolution in the way we learn, Unit 29 will be of great use and help. With the increasing availability of inexpensive personal computers and the State's efforts to provide easy connectivity to the Internet at an affordable price, it is hoped that more and more users in India will be conducting formatting and processing of their researches with the help of ICTs.

Information and Communication Technology (popularly known as ICT) has revolutionized each aspect of human life. The well-known abbreviation "www" (or the "World Wide Web") is an individual's gateway to the whole world. Gone are the days when accessing a library used to be a full fledged event in itself, from seeking permission to getting cards then the long exercise to find out what one needed. All this was compounded if it required travel to another city. Accessing libraries and resources outside the country was a dream. Now, all this and a lot more are available at our desk. With the click of a button, we have all that we need provided we are skillful in using computers and accessing the Internet.

29.2 OBJECTIVES

After studying this Unit, you should be ableto:

- Distinguish between different types of resources available over theInternet;
- Build up a list of Internet sites that can support social research;
- Explain use of statistical software for data analysis; and
- Use in your research the Internet and the word processing tools.

29.3 WHAT IS INTERNET AND HOW DOES IT WORK?

The Internet is a network of networks, linking computers to computers. It is the transport vehicle for

the information stored in files or documents on another computer. It can be compared to an international communications utility servicing computers. It is sometimes compared to a giant international plumbing system. However, the Internet itself does not contain the information. It may not be correct to say that a "document was found on the Internet." Rather, we should say that it was found *through* (or by using) the Internet.

Users of computers may use through the internet one or all of the following internet services.

- **Electronic mail (e-mail):** It permits one to send and receive mail. It provides access to discussion groups through e-mails.
- **Telnet or remote login:** It permits one to log onto another computer and use it as if one were there.
- **FTP (or File Transfer Protocol):** It allows one's computer to rapidly retrieve complex files intact from a remote computer and view or save them.
- **The World Wide Web (www or "the Web"):** The largest and the fastest growing activity on the Internet.

How does the Internet work?

Every computer connected to the Internet is part of a network. For example, you may use a modem and dial a local number to connect to an Internet Service Provider (ISP). At work, you may be part of a local area network (LAN), but you most likely are still connected to the Internet using an ISP that your institution has contracted with. When you connect to your ISP, you become a part of their network. The ISP may then connect to a larger network and become part of their network. As said earlier, the Internet is simply a network of networks.

A typical Internet website address or a URL looks like http://www.ignou.ac.in.In this name http://denotes that the computer will use Hypertext Transfer Protocol for communicating. WWW or World Wide Web is the source where this website would be located; ignou denotes the unique name given to the particular website and ac.in represents the Domain Name Server which will handle the request and provide the requested website page (for an example see Box 29.1)

Box 29.1 Example of How Does The Internet Work?

Let us say that you type the URL http://www:ignou.ac.ininto your browser[@]. The browser contacts a DNS server to get the IP address[@]. A DNS server would start its search for an IP address by contacting one of the root DNS servers. The root servers know the IP addresses for all of the DNS servers that handle the top-level domains (.COM, .NET, ORG, etc.). Your DNS server would ask the root forwww.ignou.org and the root would say, "1 don't know the IP address for www.ignou.ac.in but here's the IP address for the ac.in DNS server."

Your name server then sends a query to the ac.in DNS server asking if it knows the IP address for www.ignou.ac.in.The DNS server for the ac.in domain knows the IP addresses for the name servers handling the www.ignou.ac.in domain, so it returns those.

Your name server then contacts the DNS server for**www.ignou. ac.in** and asks if it knows the IP address for www.ignou.ac.in. It actually does, so it returns the IP address to your DNS server, which returns it to the browser, which can then contact the server for www.ignou.ac.into get a Web page.

Accessing Internet

Individuals and companies desirous of using Internet access services have a range of options available, which vary considerably in terms of service quality, and price. There are several free dial-up Internet Service Providers that provide a basic level of access at no cost. For a company intending to engage in a substantial amount of e-commerce involving high bandwidth content, a specialized solution is required at the other end of the range. The company would lease a line with a certain capacity (e.g. 20Mbps) with the Web site professionally hosted. The variables to consider are:price, type of connection (dial-up, instant, dedicated), ancillary servicesavailable (Web site hosting, intranet/extranet provision, services), download speed (the speed that information travels to you) and upload speed (the speed of information sent by you).

The most common Internet access procedures are:

- **Dial-Up Internet:** This is the most commonly used service for individuals, and for small businesses with e-mail and a Web site. Awide range of operators exist providing national and regional services,most offering Web site hosting (some included in the monthly, access fee)and helpdesk services. It requires a modem and a telephone line through which it can be connected to ISP using unique user identification and password.

In India, the major Internet Service Providers for dial-up connections include VSNL, MTNL along with other regional level providers. When you purchase an accountfrom any of these ISPs, you get a unique username and a password, along with a dial up number. When you connect the modem to the telephone line and dial-up, it asks for the username and password after which it connects to the ISP from where you can access the Internet.

- **ISDN**(Integrated services digital network): ISDN allows a customer to have a 64kbps Internet

circuit and telephone/fax line at once or a dial-up connection at speeds of up to 128 kbps. This service is suitable for a business that may have a small number of users on-line at the same time or needs to transfer files of substantial size (suchas graphics),which would be too slow over a dial-up connection. In most cases forISDN Internet access, a customer needs to have an ISDN line installed to the premises.

- **Cable modem:** While using different technologies, these two products deliver high speed Internet access on an "instant connection" basis (no dial-up required). The download speeds vary from 512 kbps to 2 Mbps and upload speeds are of 128-740 kbps.

Specific Advantages of Internet

Compared to traditional sources of information for research, the Internet offers the following additional possibilities:

- **More up-to-date material:** Official publications are often publishedonto the Internet before they arrive in the library, and news services are updated throughout the day.
- **Increased access to material:** It is absolutely impossible for any single library to hold paper copies of all the information that isavailable on the Web. Also you have access to the Internet 24 hours a day.
- **Interactivity:** Some sites have e-mail discussion forums whereyou can debate issues and send comments.

Let us complete Reflection and Action 29.1 and assess the level of our understanding of the help ICTs can provide in social research.

Reflection and Action 29.1

ICT has a vital role to play in social research as it provides access to a large resource of books, journals, data sets and software for analysis. Find out what type of access to the Internet is available at your Study Centre. If the Study Centre has no access to the Internet, visit the nearest cyber cafe in your locality and after discussing with the cyber cafe in-charge, find out which of the following types of Internet access is available at that café.

- Dial-up Internet;
- ISDN (Integrated services digital network; and
- Cable modem.

Try to use this facility at least once to find out a few items of information necessaryfor your research project and then write a note of ten lines to tell whether this method of seeking information is useful. Mention the problems, if any, faced in the process.

29.4 INTERNET SERVICES

The following description provides us information about the various typesof Internet services now commonly available to all researchers and the general public.

World Wide Web (www)

The WWW incorporates all the Internet services. You can retrieve documents, view images, animations[@], and videos, listen to sound files, speak and hear voice, and view programmes that run on practically any software in the world, providing your computer has the necessary hardwareand

software[@] to do these things.

When you log onto the Internet using Netscape or Microsoft's Internet Explorer or some other browser, you are viewing documents on theWorld Wide Web.The current foundation, on which the WWW functions, is the programming language called HTML. It is HTML and other programming embedded within HTML that makes possible Hypertext. Hypertext is the ability to have Web pages containing links, which areareas ina page or buttons or graphics on which you can click your mousebutton to retrieve another document into your computer. This "clickability"[@] using Hypertext links is a feature, which is unique andrevolutionary about the Web.

Every document or file or site or movie or sound file or anything you find on the Web has a unique URL (Uniform Resource Locator) that identifies the thing on the computer, where it is, and its specific file name. Every Hypertext link on every web page in the world contains one of the URLs. When you click on a link of any kind on a Web page, you send a request to retrieve the unique document on some computer in the world that is uniquely identified by that URL. URLs are like addresses of Web pages. Awhole cluster of internationally accepted standards (such as TCP/ IP and HTML) makes possible this global information retrieval phenomenon that transcends political and linguistic boundaries.

Electronic Mails or E-mail

The most basic and perhaps one of the most useful components of the Internet is the one that came first---electronic mail (or e-mail), which enables rapid local and global information exchange and has forever rebranded its much slower manual cousin as snail mail. E-mail is a particularlyeffective

way of communicating not only with friends but also with business partners and groups of people you may be working with. It allows for rapid updates on progress and for questions to be asked and answered in double quick time. Within a decade a host of rival and proprietary e-mail formats have been devised for use on different computing platforms, which mostly could not talk to each other. However, as the Internet became more widespread and standards were implemented to enable different e-mail systems to communicate transparently, the use of e-mail has remarkably increased. It is not only a key part of internal communication within and between businesses but is used by virtuallyeveryone who has a personal computer (PC).

UsingE-mail

Now e-mail comes as an integral part of your browser software (for example Outlook Express with Microsoft's Internet Explorer). On setting up your browser software you are also asked to establish your connection to the Internet Service Provider (ISP). You will be asked to enter your e-mail address. The first part of the e-mail address is your choice but itshould be unique with your ISP; then comes the sign "@"followed by the name of your ISP. Your ISP will provide you with essential codes to create a new account. The software will also ask you to provide a name by which you would like to be identified when someone receives an email from your account. You will also need to key in your user name and a password agreed on with your provider.

Sending e-mail is a simple task. You can write your correspondence directly in the email software or in another word processing programmeand attach it to the e-mail so that the formatting remains intact. If you want to send your e-mail to several people you can easily do that by using the carbon copy (cc:) option. If you want to keep the identities of the other parties receiving the e-mail secret then you can enter their addresses into the blind carbon

copy (bcc:) field. Once finished, hit the 'send'button and the e-mail goes from your computer. You can opt to keep copies of every message sent in the "sent box" which acts as a good record for future reference or you can begin to organize mail sent and received by category or project in files within your mail software (see Box 29.2 to understand how e-mail works).

Box 29.2 How Does E-mail Work?

1. Once you have composed an e-mail and hit the send button, your e-mail programme sends your mail to the SMTP server where your account is.
2. The SMTP server breaks the address someonelse@theirdomain.com into two parts: someone else (the account name) and theirdomain.com (the domain). The SMTP server then contacts the DNS server, and asks for the IP address wheretheirdomain.com is located.
3. The DNS server sends the address back to the SMTP server.
4. The SMTP server then sends the e-mail message to the SMTP server where theirdomain.com islocated.
5. The second SMTP server delivers the e-mail message to someone else's account.
6. Someone else logs on to the computer and opens the email software, which then connects to the server. The software then requests the server to send all e-mail from their account to their computer.

E-mail is an amazing communications tool once you have mastered it and learnt the basic rules. However no one likes to receive a spam or unsolicited e-mail unless they have opted to be part of your network of contacts or potential customers. Spam is a frustrating reality

on the Internet and those who persist in sending it are not regarded as good net citizens. With personal or business messages one is advised to read and re-read one's e-mails carefully before hitting the send button as misunderstanding and embarrassment can arise quickly through hasty responses.

29.5SEARCHING ON THE WEB SEARCH ENGINES

Search Engines for the general Web do not really search the World Wide Web directly. Each one searches a database[@] of the full text of Web pages selected from the billions of Web pages out there residing on servers. Search engine databases are selected and built by computer robotprogrammes called spiders. Although it is said that they "crawl" the Web in their hunt for pages, in reality they stay at one place. They find the pages for potential inclusion by following the links in the pages they already have in their database (i.e., already "know about"). They cannot think or type a URL or use judgment to "decide" to go look something up and see what's there on the Web about it.

Using search engines

This is the most common form of text search on the Web. Most search engines do their text query and retrieval using keywords. A keyword can be any word on a Web page. It is important to use keywords relevant to the topic you are searching. Combinations of words or multiple words can be used as keywords and the Search Engine will display all the Web pages in its database that contain most of the keywords used by you. For example, if you wish to find out statistical software materials that aredownloadablefree from the net, the key words could be "Statistics Software Free". Remember some search engines index every word on every page, while others index only a part of the document. Also, some of the search engines discriminate upper case

from lower case; others store all words without reference to capitalization.

Keyword searches have a tough time distinguishing between words that are spelled the same way but mean something different (i.e. hard cider, a hard stone, a hard exam, and the hard drive on your computer). This often results in hits that are completely irrelevant to your query. Search engines also cannot return hits on keywords that mean the same but are not actually entered in your query. A query on "heart disease" would not return a document that used the word "cardiac" instead of "heart."

Most sites offer two different types of searches---"basic" and "advanced." Advanced search options differ from one search engine to another, but some of the possibilities include the ability to search on more than one word, to give more weight to one search term than you give to another, and to exclude words that might be likely to confuse the results. You might also be able to search on proper names, on phrases, and on words that are found within a certain proximity to other search terms.

Many search engines allow you to use the so-called Boolean[@]operators to refine your search. These are the logical terms AND, OR, NOT, and the so-called proximal locators, NEAR and FOLLOWED BY

- **AND** means that all the terms you specify must appear in the documents, i.e., "heart" AND "attack."
- **OR** means that at least one of the terms you specify must appear in the documents, i.e., bronchitis, acute OR chronic.

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- NOT means that at least one of the terms you specify must not appear in the documents. i.e., statistics AND calculator, NOT mathematics.
- **NEAR** means that the terms you enter should be within a certain number of words of each other.
- **FOLLOWEDBY** means that one term must directly follow the other.
- **PHRASES:** The ability to query on phrases is very important in a search engine. Those that allow it usually require that you enclose the phrase in quotation marks, i.e., "heart attack."
- All the search engines have different methods of refining queries. The best way to learn them is to read the help files on the search engine sites and practice.

Some of the most commonly used Search Engines are:

• **Google** (http://www.google.com)

Google provides the option to find more than web pages. Using on the top of the search box on the Google home page, you can easily seek out images from across the Web, discussions that are taking place on Usenet newsgroups, locate news information or perform product searching. Using the More link provides access to humancompiled information from the Open Directory, catalogue searching and other services.

- **Yahoo** (http: / /www.yahoo.com)

Launched in 1994, Yahoo is the Web's oldest "directory", a place where human editors organize Web sites into categories. In addition to excellent search results, you can use tabs above the search box on the Yahoo home page to seek images, Yellow Page listings or use Yahoo's excellent shopping search engine. Or visit the Yahoo Search home page, where even more specialized search options are offered.

- **Ask Jeeves** (http://www.askjeeves.com)

Ask Jeeves initially gained fame in 1998 and 1999 as being the "natural language" search engine that let you search by asking questions and responded with what seemed to be the right answer to everything.

- **AllTheWeb.com(http://www.alltheweb.com)**

Powered by Yahoo, you may find AllTheWeb a lighter, more customizable and pleasant"pure search" experience than you get at Yahoo itself. The focus is on Web search, but news, picture, video, MP3 and FTP search are also offered

- **AOL Search** (http:// aolsearch.aol.com (internal) and

  http:/ /search.aol.corn /(external)AOL Search provides users with editorial listings that come from Google's crawler-based index. Indeed, the same search on Google and AOL Search will come up with very similar matches.

- **HotBot** (http://www.hotbot.com)

  HotBot provides easy access to the Web's three major crawler-based search engines: Yahoo, Google and Teoma. Unlike a **meta search engine,** it cannot blend the results from all of these crawlers together. Nevertheless, it is a fast, easy way to get different Web search "opinions" in one place.

Some other options for Search Engines are:

Teoma(http://www.teoma.corm)

Gigablast(http://www.gigablast.com)

LookSmart(http://www.tooksmart.com)

Lycos (http://www.tvcos.com)

MSN Search(http://search.msn.com)

NetscapeSearch(http:/ / search. netscape. com)

Open Directory (http://dmos.org)

About.com (http://www.about.com)

Britannica.com(http://www.britannica.com)

Excite (http://www.excite.com)

Won (http://www.iwon.com)

PepeSearch thttp://www.pepesearch.com/)

SearchKing (http://www.aearchking.com)

Complete Reflection and Action 29.2 and find out if you are able to make use of the ICT aids available at present.

Reflection and Action 29.2

Find out what type of access to the Internet is available at your Study Centre. If the Study Centre has no access to the Internet, visit the nearest cyber cafe in your locality and carry out the following tasks.

- Open an e-mail account if you do not already have one.
- Send an e-mail to your friend who should have an e-mail account and you should know your friend's email address.
- Access any of the above-mentioned search engines to obtain some items of information necessary to your research project.
- Visit a couple ofwebsites, for example one to give you information about the current jobs available; another one about natural disasters currently occurring all over the world.

After completing the above tasks, write a short note on advantages and disadvantages of

using ICT tools.

29.6 ACCESSING AND USING ONLINE INFORMATION

If you are a researcher dealing with any of the social sciences, you would be more interested inusing the social science research reference sites. Here is some information about them.

Social research reference sites

Using commonly available Search Engines (e.g. Google, Yahoo etc.) is not one of the best and recommended ways to initiate research through the Internet. Given the limitations of search engines, there are several other options available where the search results can be far more precise. The search for Social Research can be classified in the following categories:

Directories and gateways

These provide an entry point for resources collated specifically for a chosen area, which you may search and browse. Unlike search engines, which automatically collate a list of sites, which match your search criteria, directories and gateways can provide a more fruitful search for your chosen topic. Gateways are an excellent place to find high quality Internet sites that can support academic work. Some of the advantages of using directories and gateways are:

- Gateways are compiled by academic and library experts after devoting considerable time to scanning the Web for items of interest.
- Gateways are classified in structured and useful ways so that one can access the resources more easily.
- Gateways are regularly updated.

A fewexamples of effective gateways for social science researchersare:

- **The Social Science Information Gateway (SOSIG)** (http: /www.sosig.ac.uk/)This gateway has links to online papers, discussion lists and courses. It contains Web pages of several departments and organizations. It has a complete section for social research methods,including both quantitative and qualitative resources.
- **Sociosite:** Research Methodology and Statistics (http:// www.pscw.uva.nl_sociosite-/TOPICS/Research.html)-This is a sociological information system that provides access to a comprehensive and international listing of all sociology related resources on the Internet and has a special section devoted to research methodology and statistics
- **Social Science WWW Virtual Library** (http://www.clas.ufl.edu/users/gthursby/socsci/index.htm)-This keeps track of online social science information as part of the World Wide Web Virtual Library.

Article reference and abstracts databases

One always needs to keep oneself aware of the latest publications in one's field. The Internet offers ways to find about these publications via online catalogues of references and abstracts. While access to some of these sites is free, some require initial membership, which is generally provided to libraries and institutions. It is likely that your institution (or library) has the membership of some of these databases and you can access these after obtaining the Password from your institution/library.

Some popularly accessed databases are:

- **Social Science Citation Index (SSU)** (http://www.isinet.com/products/ citation/ ssci/) It contains around 5,000 journals spanning 50 social science disciplines. It covers most

of the major journals, which address social research methods dating back to 1973. From a search you can obtain titles and for over half the author abstracts you can also retrieve titles of citations references.

- **International Bibliography of the Social Sciences (IBSS)** (http://lse.ac.uk/ibss/)

  This provides easy access to over 1.5 million references tojournal articles, bookreviews and monographs from 1951 onwards.

- **Sociological Abstracts** (http://www.socabs.org/detailsV3/socioabs.html)

It indexes and provides abstracts from many publications coveringsocial research methods.

29.7ONLINE JOURNALS AND TEXTS

Most journals in the social sciences have Web sites where both current and backdated research articles and papers are available for reading and downloading. Gaining access to full text in most of the online journalsrequires subscription. On obtaining it, a password is provided for fullaccess. However, most of these journals provide abstracts and/or tableof contents free. There are a few directories that provide lists and linksto electronic journals. Two such directories are:

- **Directories of Electronic Journals** (http://gort.ucsd.edu/ejournal/dir.html)---contains links to electronic journals and newsletters accessthe world.
- **The Journal Locator in Psychology and the Social Sciences**(http://www.wiso.uni-augsburg.de/sosio/hartmann/psychojournals.html)--- It lists over 1,600 online journals and provideslinks to their home pages.

Examples of online journals covering social research methods

- **Sociological Research Online** (http: / /www.socresonline.org.uk/---This is an online journal that publishes high quality applied sociology articles, focusing on theoretical,empirical and methodological aspects.
- **Social Research Update** (http://www.soc.surrey.ac.uk/sru/sru.html)- This is a quarterly electronic journal which covers new developments in social research. Each issue covers different research methods topics spanning qualitative and quantitative methods.

While full text articles can be browsed free of charge from the online journals mentioned earlier, the following only provide free access to abstracts and table of contents:

- **International Journal of Social Research Methodology, (IJSRM)** (http://www.tandf. co. uk/journals/tf/13645579.html---It is a new journal of methodological articles and articles relating toresearch practice in professional and service settings.

There are also some specialized sites available that archive full texts of paper deliberated or presented during Conferencesand Seminars. One such site of interest is **Education Online:Electronic Texts in Education and Training** (http://www.teeds.ac.uk/educot/).

Library catalogues

Several libraries across the world provide online-access to their catalogues. Library catalogues are sometimes referred to on the Web as OPACS which stands for Online Public Access Catalogues. Sometimes these catalogues can only be accessed through passwords, which are available through free registration on site. Some of the relevant sites are:

- **The British Library Catalogue** (http://blpc.bl.uk/)

This is an online resource for materials in the major reference and document supply centres of one of the world's largest libraries.

- **Worldwide Index of Library Catalogues**(http://www.libdex.com/)More than 18,000 libraries can be reached through a specialized search from this website.

Assorted useful websites

- **Glossary of Research Terms** (http://www.mori.com/rmu/glossary.shtml) provides explanations of topics and technical terms for researchers.
- **Social Science Research Methods:** Resources for Teachers (http://www.siu.edu/%7Ehawkes/methhome.html) has links to courses on research methods and teaching materials as well as other materials of interest.
- **The Centre for Applied Social Surveys (CASS)** http://www.socstats.soton.ac.uk/cass/)offers a programmeof short courses on social survey methods, covering all aspects of quantitative survey.
- **Index to Theses** (http:// www. theses. com/registered_users/simple. html)provides a searchable database of abstracts of masters and doctoral theses accepted by Universities in Great Britain and Ireland from 1970 till date.

Reflection and Action 29.3

It is always better to decide on the needs and identify the broad category underwhich the information necessary for your research project might fall.It helps inpinpointed search and provides the desired results in relatively lesstime. It is true that general search engines are of limited help in social research. There are specialized Search Engines created for Social Research.

Try to obtain the information needed by your research project from one of the sources mentioned above and then write down in one page how you obtained the information and the time you

spent in getting it and how you are going to use that information in your research.

29.8 STATISTICAL REFERENCE SITES

- **The CHEST Directory** (http://www.chest.ac.uk/chestdirectory/intro.html) contains a wide range of software, including those for data and statistical analysis. There are several other subject specific sites (e.g. foranthropology, psychology) that provide free access to software required for quantitative and qualitative analysis. Some examples are:
- **Computer Assisted Qualitative Data Analysis Software (CAQDAS)** Network (http://caqdas.soc.surrey.ac.uk/)
- **Directory of Psychology Software** (http: / /www.psychology. Itsn.ac.uk/)
- **Free Statistical Software**(http://members.aol.com/johnp71/javasta2.html)

Software for Statistical Data Analysis Computer software is used to perform any level of complex statistical analysis with any amount of data available. There are three ways through which software can be obtained for performing these tests:

1) Purchasing licensed software from the companies

SPSS (or Statistical Package for Social Scientists) is the "most preferred software to carry out any level of statistical analysis (you will read more about this package and its use in Unit 30). With SPSS, one can generate decision-making information quickly using powerful statistics, understandand effectively present results with high-quality tabular and graphical output, and share the results with others using a variety of reporting methods. All this enables the user to make smarter decisions more quickly byuncovering keyfacts, patterns andtrends.

SPSS is highly priced. Generally institutions and organizations purchase multiple user licensed version of this software and provide access to its studentsandemployees. Purchasing SPSS by anindependent user is generally not economically viable. However, there are other moderate/low priced software available for single users. One such software available is "StatCalc". It simplifies common statistical calculations, allowing quick analysis of raw data whether you enter it yourself, use a spreadsheet, or maintain a database. A 30 day trial version of this software is available from their website (http://www.acastat.com/prod01.htm)

2) Downloading free software from the Internet

There are several committed professionals whose aim is to popularize the use of statistics by making it simple and affordable. These people have created software that can perform a wide range of statistical analyses, requiring minimal computer proficiency. The software can be downloaded from the Internet in about 30 to 90 minutes with reasonable Internet speed. No licensing is required to use such software.

Such a popular and free statistical software is "Openstat". This software is similar to SPSS in appearance and operation. Though not as comprehensive as SPSS, it provides a wide range of options to a social researcher. It has the capacity to handle large data; it can import from and export data to other software and can perform all commonly used statistical tests. Someone conversant with Openstat can effectively use SPSS for all similar applications and vice versa. The software can be downloaded from the URL (http:/www.statpages.org/miller/openstat/).

3) Online web pages

These are quick solutions to small statistical problems. These may or may not be downloadable but provide free access. Several of these Web pages provide options for data import. In the

majority of the situations these work as handy scientific calculators but are certainly advanced from being simply calculators as they can perform multiple tasks including data entry and producing charts, etc. Before clicking on to any of these calculators, one should have analyzed the problem and identified the exact test that is to be applied.

Statistical calculators for descriptive statistics and charts

1) Descriptive sampling statistics(http://home.ubalt.edu/ntsbarsh/Business-stat/other applets/Descriptive.htm)---This page can calculate some basic descriptive statistics, like mean, variance, SD, CV, skewness@and kurtosis.@ It can analyze a maximum of 80 numbers. In the matrix that appears on the web page enter the numbers into each of theColumns on top of the matrix and hit "Calculate". All the calculations mentioned below appear. In case a Histogram is required, provide Class Width and "Number of Classes" in the boxes and hit "Histogramming". The histogramwill be drawn that can be selected, cut and pasted in any document for further use.

There are several other such online calculators available on the Internet. To provide some more examples, the following links may be attempted:

2) Descriptive statistics (mean, SD, SEM, and CI of mean) (http://graphpad.com/quickcalcs/clmean1.cfm)--One can either enter or paste raw data, or enter mean,SD or SEM, and N to get Class Intervals.

3) StatCalc (http://math.uc.edu/statistics/statbook/java/StatCalc.html)---This calculator computes summary statistics for onevariable, draw a crude histogram, and sort a list of values. Given pairsof values it computes the least squares regression line and Pearson correlation coefficient. It can also perform Chi Square test. The can be either directly entered or pasted from other worksheets like Excel.

4) Statiscope (htpp://www.df.lth.se/~mikaelb/statiscope/statiscope.shtml)---This can be used for calculating and displaying a large number of descriptive statistics from a set of numbers that can entered directly into the calculator.

Reflection and Action 29.4

There are several options available for carrying out statistical analysis. This includes online calculators as web pages that can quickly run the calculation and give results.

There are several statistical packages that can be downloaded free of charge through the Internet andcan be used for almost all basic statistical tests.

You need to remember that ICT and computer software packages have a limited use in qualitative data analysis. As all social researches have some component of quantitative data, we suggest that for analyzing quantitative type of data pertaining to your research project, you try to use the basic tools mentioned above. Aftermaking an effort to do so, it is important that you mention in your research project report all the ICT tools that you used in your research. In the evaluationof your assignment this will be taken into special consideration..

29.9 DATA SOURCES

There are several websites that provide real data (both raw and tabulateddata). These websites provide country-specific data. Access to datafrom these websites is generally not free and membership is required.

Statistical Data on the Web

(http://www.lib.umich.edu/govdoes/stforeig.html)provides baccess to select socio-economic data from various countries in the world. A few websites for Indian data are:

- Census Data Online (http://www.censusindia.net/cendat/)
- India Stat.com (http://www.indiastat.com/)

Statistical and research methods

There are several sites dedicated to tutor or guide researchers on Research Methods and the latest developments in upgrading these methods. of the popular sites in this category are:

SRM (Social Research Methodology)---Documentation Centre (http://www.niwi.knaw.nl/nlsrm/srm.htm)---contains a searchable database of resources on research methodology and statistics for social and behaviouralsciences on an international scale.

Sociological Methodology [http://www.blackwellpublishers.co.uk/journals/SM/contents.htm] is an annual volume on methods of research in social sciences. Sponsored by the American Sociological Association, it publishes materials that advance empirical research in sociology and related disciplines.

Qualitative research

[http://qrj.sagepub.com/]provides a forum for the discussion of research methods, in particular qualitative research.

International Journal of Social Research Methodology (IJSRM)[http://www.tandf.co.uk/journals/tf/13645579.html]

Public Opinion Quarterly (POQ)

[http://www.poq.oupjournals.org/] is the official publication of the American Association for Public Opinion Research (AAPOR) and focuses on theories and methods

underlyingopinion research (such as survey validity, questionnaire construction, interviewingand interviewers, sampling and analytic approaches).

The CASS Question Bank

This question bank provides free access to questionnaires from major social surveys and associated commentary to assist survey design:

29.10 USES OF E-MAILIN RESEARCH

Usinge-mail as a research tool potentially offers researchers many advantages such as easy access to world-wide samples, low administration costs (both financially and temporally) and its unobtrusiveness and "friendliness"to respondents. However, e-mail's application as a research tool is constrained by its, as yet, limited and biased population of users(in terms of age, income, gender and race). Response rates to e-mail questionnaires appear favourable as does the ease of distribution and response times. Nevertheless, ensuring respondents' anonymity is virtually impossible. Using e-mail as an interview tool takes away the conventional constraints of spatial and temporal proximity between interviewer and respondent and offers the considerable practical advantage of providing "ready-transcribed" data. However, e-mail interviews suffer from a lack of tacit communication.

The principal feature of using e-mail as a research tool is its speed and immediacy. An almost instantaneous dialogue between the researcher and the subject takes place. In particular, electronic communication sets up a "democratization of exchange" that eludes more conventional research methodologies. Furthermore, the potential for asynchronous communication that e-mail offers is an attractive feature when considering its use as a research tool. Subjects are

not constrained to synchronous communication but can respond when and how they feel comfortable. E-mails are most commonly used to fill in electronic questionnaire and conduct electronic interviews.

However, as electronic communication becomes more common, therewill be *information overload* and research via e-mail runs the risk of becoming marginalized as a form of electronic "junk mail". Unsolicited attempts to gain information via e-mail by genuine researchers may be ignored by the recipient at the other end of the line.

The proliferation of e-mail, along with the increasing ease of carrying out e-mail and Internet-based research, suggests that the use of electronic methodologies is likely to increase in popularity in the near future. However, as said earlier, there remain significant problems in using email in social science research. Despite the rapid expansion of e-mail, its use as a research toolwill reflect the demographically based biases of current usage patterns of the medium, in much the same way that early telephone surveys were also hindered by the clear social class bias resulting from an unequal ownership of the facility.

Accessing newsgroups and e-mail lists

Suppose you have a question for which you are sure that someone knows the answer, but how do you find that person? With the Internet you can not only search Web sites for information, but also communicate with people you may never meet, getting answers to obscure questions that only they may know.

Newsgroups also referred to as forums have been around almost since theInternet came into

existence. They help scientists to post questions (and answers) to each other. Today, newsgroups resemble virtual coffeehouses, where people get together to discuss subjects of mutual interest. The only difference is that with newsgroups, the communication is written, not verbal. Newsgroups revolve around specific topics, such as effectiveness of computer analysis in qualitative research. You can read what others have written and post your own comments.

There are thousands of newsgroups covering almost every topic, from computers, social issues, literature and science, to recreation, entertainment, hobbies and current affairs. In newsgroups, you can find job postings, business and health care advice, announcements about events, referrals, political and religious discussions. You may download pictures also. See Box 29. 3to find out how to access a newsgroup.

Box 293 How to Access a Newsgroup

To access a newsgroup, you need a newsreader programme. Most Internet explorers have these programmes built in. Next, determine which newsgroups interest you and subscribe to them. Keep in mind that newsgroups were once the only way to have so-called. threaded discussions, where related messages are grouped together. Today, many Web sites have discussion group postings. When you are looking for a discussion to join, look at Web sites as well as newsgroups.

Mailing Lists

Mailing lists use a different strategy. Rather than collecting each messageand displaying it in a central location, each message is sent as an electronic mail message to every member of the list. The advantage of mailing lists is that you don't need to use a separate software programme to

read messages posted to the newsgroup. The disadvantage is that you can receive dozens, sometimes even hundreds, of messages per day from a given mailing list.

Newsgroups and mailing lists generate an incredible amount of text each day. Some of them contain detailed analyses of issues and events by contributors who range from interested members of the general populace to acknowledged experts in particular fields. If you subscribe to mailing lists, you can reduce the number of messages you receive each day by using the *digest* command, which tells the computer running the mailing list to send you one message containing several messages. You can learn how to use the *digest* command by sending a message to the computer running the list with the word *help* in the subject line. Remember to send the message to the computer's main address, rather than to the list itself.

If you are working on a research project on a current issue or event, you can locate relevant newsgroups and mailing lists by visiting the Google Group at www.google.co.in or Deja News Web site at http://www.dejanews.com or Yahoo's directory of newsgroups and newsgroup posts at http://www.yahoo.com/News_and_Media/Usenet/Newsgroup_Listings/. To search for mailing lists dealing with a particular topic, visit the Lisst Web site at http: //www.lisst.comor the Catalist Web site at http://www.lsoft.com/catalist.html. If you want to analyze a list, discussion, or track back a series of messages, go to Lisst's Email List Archives Search at http://www.lisst.com/read/.

To learn more about researching newsgroups, you can view an interactive demonstration. Limiting a Search with Publication Information, which provides a demonstration of searching the Deja News Web site. Deja News, located on the Web at http://www.dejanews.com, focuses on the

contents of newsgroups on the Internet.

Reflection and Action 29.5

In Reflection and Action 29.4 we mentioned that ICT and computer software packages have a limited use in qualitative data analysis but here is a source that can help you even in the qualitativeresearch aspects of your project.http://qrj.sagepub.com/ provides a forum for the discussion of research methods, in particular qualitative research. Try to access this website and find out if it is of any help to your research. Write a short note on your positive or negative findings.

29.11 CONCLUSION

Provided thata researcher is clear about the needs of research, ICT can be effectively used to gain information about any research topic in a social science from across the world. With further advancement in technology, using statistics is no more tedious. It does not require complex mathematical skills and can be easily handled through various software packages available. ICT provides excellent and reliable options for managing, storing, retrieving and use of data by several persons at any given point in time. The exchange of information is swift and fast, and it is possible to access any amount of information which is physically lying anywhere in the world. ICT has a lot of potential for use in social research and if used appropriately, can save a lot of time, energy and other resources. And, as one starts using the Internet, many more potentialities it has for research become clear. The Internet provides an abundant opportunity to mine information, data and insights.

29.12 FURTHER READING

MacFarlane, A. 1977. *ReconstructingHistorical Communities.* Cambridge University Press: Cambridge (especially pp. 207-214)

Nie, N. H., C.H. Hull, J. G. Jenkins, K. Steinbrenner and D. H. Bent 1979. *Statistical Package for the Social Sciences.* McGraw Hill: New York