'Ya Kriyawan Sa Pandita' (learned person is one who is ceaselessly active) is the motto of the University of Pune, which was established in 1949. Since its inception, the University of Pune has placed the objective of 'Social Commitment' on the top of its agenda for attaining excellence in higher education. The Centre for Continuing Education established in 1972 was upgraded as the Department of Adult, Continuing Education, as a result of University Grants Commission's Policy (1977). Following the University Grants Commission's Policy (1977), Government of India launched the National Adult Education Programme (NAEP) on October 2, 1978. The responsibility and the vital role given to the Universities in the NAEP was very much instrumental in upgrading the Centres for Continuing Education in various Universities. This trend was accepted by the authorities at University of Pune. Other programmes such as Population Education, Planning Form and Jan Shikshan Nilayams were started and implanted through the university and colleges with the assistance of the University of Pune and University Grants Commission. Lifelong Learning as the cherished goal of the educational process which presupposes universal literacy, provision of opportunities for youth, housewives, agricultural and industrial workers, professionals and other disadvantaged groups of the society to continue the education of their choice at the pace suited to them is one of the main objectives of the University. The Department recognised the need for providing quality education by up gradation of skills of the learners in tune with the developmental needs of the individual and the society. An indispensable endeavour toward enhancing the human resource is to develop strategies for creating an effective learning environment for a Knowledge society. The department has resolved itself to work on some socially important areas viz. National Integration, Women Empowerment, Senior Citizens, Unorganized Workers, Non-Government Organizations, Tribal Development, youth Education, Entrepreneurship & Employment, Counselling, Literacy, Adolescence Education and Lifelong Learning.

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Role of ICTs in enhancing rural livelihoods: Indian context

Sunita Sijwali
Arunima Chauhan

India is the second most populated country of the world and two third of its population resides in rural areas. Hence, it is essential to develop rural areas in terms of economically, ecologically and socially sustainable manner. Though various governmental and nongovernmental efforts have been taken but rural area is still far behind in progress as compared to urban area. Since, so long agriculture has been the primary source of livelihood in rural India but there are various other sources which can provide income or increase the income of the rural people. In recent years, information and communication technologies (ICT) impacted greatly socioeconomic development in developing countries. Developed countries have seen that technological advances are increasing productivity and income, quality of life and life expectancy. To enhance rural livelihoods through ICT access, empowerment and an individual plays an important role. Now, it is time for technology to play crucial role in transforming rural India.

It is strategic to understand how effectively we can use ICT to strengthen the rural areas. "Information Communication Technology" emphasize on these three words: Information, Communication and Technology; to promote information via communication with the help of technology. This paper has used secondary sources of data to describe common ICTs used in rural India, which ICTs are regarded as attractive by different groups and why, the role of ICTs in influencing rural livelihoods and challenges to cope up while using ICTs in rural area. ICTs can become one of the vital tools to facilitate rural livelihoods by providing information, networking etc. if managed effectively.

Rural development forms an important agenda of government across the globe. In India two thirds of its population lives in rural areas hence it becomes mandatory to develop these areas to improve the economic conditions of the country. Agriculture is one of the largest contributors to national economy and it also provides sustenance to more than half of the country's population. Many of the rural poor depend directly or indirectly upon peasant livelihoods. Science and research have played important roles in increasing yields. But still, rural India faces a severe technology deficit. While there are other serious shortages power, water, health facilities, roads, etc, these are known and recognized. However, the role of technology in solving these and other problems is but barely acknowledged, and the actual availability of technology in rural areas is marginal. ICT offers an opportunity to introduce new activities, new services and applications into rural areas or to enhance existing services.

Information is considered as a fifth need of human after ranking air, water, food and shelter. ICT for Development is concerned with applying information and communication technologies, including the internet and mobile phones, video and audio, to development goals and poverty reduction. "Information Communication Technology" emphasize on these three words: Information, Communication and Technology; to promote information via communication with the help of technology. It covers any communication device or medium which provide access to information to the receiver, such as radio, television, mobile phones, computer, laptops and internet. The importance of communication can be realized from the statement of Berlo- Communication is to society and civilization what nervous system is to man. ICTs help provide opportunities for self development, improve existing knowledge, skills and enhance their capability. Knowledge gap is considered one of the hindrances in the development of the society. The more

information one gains the more he will be able to make better decision in each aspects of his life. Lack of information in the rural areas makes people to rely on traditional methods of farming and allied activities and limited sources of livelihoods. They are not exposed to various new sources of livelihoods or improving existing sources with the help of ICT.

ICTs have a demonstrably positive effect on income growth in developing and developed countries (Röller and Waverman 2001; Waverman, Meschi, and Fuss 2005). In rural areas, ICTs can raise incomes by increasing agricultural productivity (Lio and Liu 2006) and introducing income channels other than traditional farm jobs. Current limited evidence from individual farmers and fishers in India supports the conclusion that ICTs improve incomes and quality of life among the rural poor (Goyal 2010; Jensen 2007). The idea that wider access to and use of ICTs throughout a country will reduce inequalities in income and quality of life between rural and urban residents is compelling. Despite the scarcity of evidence to support this notion (Forestier, Grace, and Kenny 2002), it underlies widespread policy initiatives to ensure equitable access to ICTs in all areas. Many could see a direct link between marginalisation and poverty, on the one hand, and lack of access to information and having a voice on the other. From improving service delivery and outreach, to increasing participation in governance, and enabling people to make better-informed decisions, the potential was clear; however, so were the challenges: accessibility, cost, sustainability and capacity, for example. Development organisations and practitioners have discussed over how to overcome serious challenges of accessibility, cost, maintenance and capacity, and created many pilots to test out applications of ICT, and solutions to the challenges.

There are various ICT tools and applications used for the development of the society in various manners. In the age of

Information era one has to wisely choose the medium to transmit information in an effective way for the betterment of the people. The major ICT tools which are being widely used in rural areas for improving the livelihoods of the rural people are television, radio, mobile phone, computers/laptops, and internet. Through these channels different types of programs on various issues are being created. Rural people highly value the knowledge to generate relevant and sustainable conditions of livelihood. For decades, development workers have acknowledged rural people's need for knowledge. (Prato and Longo, 2012; Pye-Smith, 2012). The more informed the person is better the decisions he will be able to take. This paper has used secondary sources of data to describe common ICTs used in rural India, which ICTs are regarded as attractive by different groups and why, the role of ICTs in influencing rural livelihoods and challenges to cope up while using ICTs in rural area. Choosing ICT tools for the transmission of information depends on various factors such as its penetration, content to be used, gender, literacy, senses involved or literacy factors etc.

Television

Television has become the medium that brings transition in the society. It is an audio visual aid used for mass communication. Television is also considered very strong as the first stage of awareness. Apart from that, it speeds up entire process of adoption. It is considered as a credible source of information and is taken as authentic, trustworthy and prestigious medium of communication. It serves the people by disseminating the information in areas of agriculture, national integration, health and hygienic, entertainment programmes, advertisement etc. It is a fact that people retain 50 percent or more through TV where both hearing and seeing is employed.

Broadcast India survey 2018 by the joint industry body BARC (Broadcast Audience Research Council) reported that 66%

of the households owning television all over the country. The total number of homes according to the survey was grown to 298 million in 2018. Rural India dominates TV ownership growth — in 2016, it had 99 million television households; that number is 109 million currently. The data stated that television penetration is higher i.e. more than 90% in five southern states- Andhra Pradesh, Telangana, Kerala, Karnataka and Tamilnadu. Almost one third of the households yet to buy television set. However, the country has achieved 100 % electrification and most survey suggest that once electricity reaches a household, the first household product it buys is television followed by refrigerator. Hence it can be estimated that television penetration will increase very rapidly in coming years. Earlier there were few programs related to agriculture and other rural livelihoods issues but in 2015 government launched a full time TV channel named DD Kisaan for rural development. It features farm scientists, agricultural experts and success stories for other farmers to follow as well as films on farming techniques and acts like a one stop shop for farmers. But there is a fixed timings for each program. On an overall level for Rural India, Serial based programs secure the highest share (40%) among all, followed by Film-based programs (37%). Television also attracts an equal viewership between men and women with 348 million male viewers as compared to 327 million female viewers. For those specifically targeting woman consumers, TV reaches 167 million women in rural India, while current digital rural penetration stands at a mere 15 million women. As an instrumental device it is being used in variety of ways such as for direct teaching for supplementing formal education, for developing psychomotor skills, for adult education and for diffusion of agricultural know-how from etc.

Radio

Broadcast radio today reaches a staggering 99% of the Indian population. Rural India relies on it overwhelmingly for information. It also remains the most inexpensive and portable medium. The revolution that took place for catering the need of the people at grassroot level is community radio. Today, there are more than 180 community radio stations across India, broadcasting in languages that typically find little or no space on television or any other platform. With the commencement of community radio channels the coverage of local issues in local languages increased and reached to remote areas. An essential feature of community media is that since it is completely free from the clutches of the market, profit motive in its functioning does not hold water.

The report conducted by Nielsen India among noted that radio remains the most used platform to listen to music and mobile phone is the most used device to access the radio and only 7 % access radio stations using the traditional radio set. Radio audiences, across both small cities and metros, consider the medium to be a trusted source of information and 47 per cent people use radio to listen to music, followed by TV at 42 per cent, video streaming services at 5 per cent and audio streaming services at 6 per cent. Recent government studies suggest that radio in India could potentially reach up to 98.5% of the population. "Over the last decade, All India Radio has focused more on the rural population and the urban lower middle classes, unlike [TV'S] preoccupation with the urban upper middle classes," Ms. Eashwar says. Radio is considered an effective medium for short and instant communication. The main thrust areas where the community radio generally focuses on are issues relating to health, education, career, stress management, interpersonal relationship between parents and children, lectures, workshops etc. inform and educate farmers about the latest fertilizers, seeds and so on.

Computer/Laptops

Throughout the last few years, rural India witnessed many extraordinary changes. **PC penetration** is one such welcome addition which actually improved the lives and the lifestyle of many rural inhabitants. In fact, a series of bills and acts were passed in order to promote information technology in the rural areas. These bills coupled with the comparatively low rates of computers aptly facilitated the boom of e-governance in these villages. However, the India's current computer penetration in rural areas is remarkably lesser than its fellow countries. In fact, India has a much lower rank among the countries with lower **PC penetration**. Countries like Malaysia, Russia and China have much greater **PC penetration** in rural areas compared to India. According to some popular estimates, many individuals in villages do not purchase computers, even when they can afford it. This is due to the moderately high rates of computers. However, IT hubs and PC companies are trying their best to lure the rural customers with some viable computer deals. Apart from that, the government too is trying to add new bills and subsidies for the improvement of **PC penetration** in the villages.

The 60 per cent of Indians whose primary occupation is agriculture should be individually taught how to use internet and computers as a medium to improve their agricultural practices and use the technological advancement to the best of their interests. Via video conferencing, agricultural experts can communicate with a large number of farmers to make them understand the new yielding technologies, and suggest measures in case the food grains fail to grow on time. The graphical presentations or the 3-D diagrams of various agricultural lands and crops with animation should be shown to the rural citizens to understand visually in an easy manner as to how can they improve upon the rudimentary methods of farming. Besides

farming, setting up of computer centers can be astoundingly beneficial for the students and children who fall in the school going age-group. They can be shown and taught with various encyclopedias and videos on the Internet to make learning an easy process and visually appealing. Diagrams and photos of anything and everything will surely make them understand and learn the subjects better. Beside The rural students can hence get a better chance to study the latest subjects in the right manner.

Mobile phones and internet

Mobile phone use spread first amongst wealthy and highly concentrated populations, but the relatively low cost and simple technology has meant that it is now an indispensable tool, and service, for people everywhere, including rural areas of developing countries. In rural India, mobile handset penetration is much higher than TV (Euromonitor international). According to Telecom Regulatory Authority of India, currently there are 499 million mobile subscribers in rural India (June, 2017) of which 109 million users own smartphones. Furthermore, 47 million use mobile internet (IAMAI and Kantar IMRB's Mobile Internet Report 2016). However, the pattern of mobile usage differs starkly across rural and urban populations. While services such as emails, social networking and online shopping are prevalent in urban India, entertainment in the form of video and audio content drives internet consumption in rural parts of the country.

Mobile internet is predominantly used by youngsters, with 46 per cent of urban users and 57 per cent of rural users being under the age of 25. Urban India has around twice the proportion of users over the age of 45, while the age range of 25 to 44 has almost equal distribution of users in urban and rural areas. Around 74 per cent of the internet user base was comprised of under 35 years old, Internet and Mobile

Association of India (IAMAI) and Kantar IMRB (2017). Urban India with an estimated population of 455 million already has 295 million using the internet. Rural India, with an estimated population of 918 million as per 2011 census, has only 186 million internet users leaving out potential 732 million users in rural India. The rural Internet penetration has grown only a little -- from 18 per cent in 2016 to 20.26 per cent in December 2017. The overall impact of Internet on a community is a complicated phenomenon. Studies of Internet adoption indicate that users initially begin with the usage of Internet for social purposes. Only when they feel comfortable with various uses of Internet and see the benefits of on-line transactions, they may graduate to it. Online transactions for e-commerce are relatively newer phenomena in India and there is lack of trust in on-line transactions in rural areas. In particular, rural areas lack the educational, communication, and transportation facilities. Job opportunities are not many; information on job opportunities in other locations is not easily available. In emergencies like epidemic breaks or floods it is difficult to contact other organizations for help. Even commerce takes place at a primitive level. Hence, internet can be boon for them if used effectively.

Discussion and conclusions:

Since the last decade India has witnessed the potential growth in the ICT sector and one cannot deny its advantages if used effectively and efficiently. But rural India is still lagging behind in terms of its penetration and applications. Television remains by far the best medium to reach them and connect with them. A recent report by the Digital Empowerment Foundation indicates that 30 per cent of Indian population lags on basic literacy and thrice that for digital literacy. The government launched Digital India in 2015 to digitally empower every citizen. While its potential benefits are unquestionable, challenges remain, including delayed infrastructure development, bandwidth availability, personal

computer penetration and the capacity to scale. Though the television has the highest penetration followed by mobile phones but people mostly use these tools for entertainment purpose. Computer labs can help farmers to contact buyers and sellers to sell their goods and services. With smartphones expected to grow from 180 million users in 2017 to 690 million by 2020, the entire scenario may change. There are numerous ways in which these tools can be used to improve livelihoods of the rural people.

One has to choose carefully which ICT tool can be used under which circumstances. Creators has to deliberately plan according to the need of target group, gender, content, reach of the medium, timings, literacy and senses used while learning. These mediums have to be used in corporation with traditional methods of disseminating information. Many times it happen that content is available at the digital platform but people are not aware about its existence or they cannot decide which more program is more relevant. Hence, extension agent or any grassroot level functionaries can help them to make them learn about the digital platforms. These all methods are not the only sources of improving livelihood whereas these are complementing other sources of improving livelihoods. It will act as catalyst in the process of livelihoods. To enhance rural livelihoods through ICT access, empowerment and an individual plays an important role. Now, it is time for technology to play crucial role in transforming rural India.

Skill Developing Programmes for Sustainable Development

Dr. B. Sama Nayak

Adult and continuing education has emerged as one of the keys to improving the quality of life in the present days. It provide, continue to acquire new knowledge and skills to benefit from the new opportunities that advances in science and technology present sector (work) gives new strength to reduce difficulties of life in the world of change. The present education provides skill less certificates for just exam oriented knowledge. So they are not adjusting in their relevant works or jobs are not creating new incentives and methods. Continuing education serves as an intellectual commons, providing a place for digesting the amalgam of disparate values, goals, knowledge, individuals and structures that is adult and Continuing education. In this paper I explain importance of continuing education programmes and its challenges.

Key words : Adult Education, Educational Programmes, Life Skills, Sustainable Development.

Introduction

"Education shall be directed to the full development of the human personality and to the strengthening of respect for human rights and fundamental freedoms. It shall promote understanding, tolerance and friendship among racial or religious groups"

Education is a key to sustainable development. Skill development adult Educational programmes are one of the key priorities of the sustainable development for all. Adult education provides society and working life raise expectations requiring each and every individual to continue renewing knowledge and skills throughout the whole of life. Literacy as the basic

knowledge and skills needed by all in a rapidly changing world, it promotes sustainable development in his or her life.

The world is currently addressing the issue of literacy. However, despite the fact that governments worldwide have committed themselves politically to a 50% reduction in illiteracy by 2015, these same governments are investing scandalously little in programmes to deliver that goal. India has 19% of the world's children. About one – third of its population (2001 census) is below the age of 18, and around 74% of this population lives in rural areas. The population of people in the age – group 0-25 years is 54% of the country's total population. Indeed, India has the world's largest number of youngsters. India has one – third of the world's illiterate population in 2011 figures, the male literacy level has reached 82.12%, which female literacy has touched 64.46% the difference between male and female literacy level is 16%. One in five is a young person between 15 and 24. These adults are cannot read and write, according to UNESCO statistics. Most of these are people living in extreme poverty, two thirds are women. All most all these are living rural areas and these are using pre agricultural technical skills, not using new skill, mechanics in their occupations.

In 1990, at the World Conference on Education for All, in Jomtien, Thailand, 155 countries including India took a pledge to ensure education for all by the year 2000. Promised:

- ✓ Care for development and early education of children in age-group 0-6 years
- ✓ Spreading awareness about primary education
- ✓ Motivating youngsters to learn more
- ✓ Brining down the illiteracy rate, with a special focus on female literacy
- ✓ Life skills for youngsters
- ✓ Education improve overall quality of life

However in 1998, when UNESCO reviewed India's position in achieving these goals very poor promoting the goals.

In April 2000, 180 of a total 193 countries came together for the World Education Forum in DaKar (Senegal). India pledges that by the year 2015, education would be made available to everyone. Some Objectives;

- Ensure that the learning needs of all young people and adult are met through equitable access to appropriate learning and life – skills programmes.
- Achieve a 50% improvement in levels of adult literacy by 2015, especially for women, and equitable access to basic and continuing education for all adults.
- Improve all aspects of quality of education and ensure excellence of all so that recognized and measurable learning outcomes are achieved by all, especially in literacy, numeracy and essential life skills.

The Indian government has concentrated only on primary education, ignoring the rest of the goals. According to UNESCO's report progress in primary education, life – skills programmes are not providing seriously. In 1990, 2000, World Education for all, world conference goals clearly mentioned about life skills are provide refresh the young people. The skill development programmes are creates overall sustainable development in rural area people. Poor Indian rural people should be empowered with life skill programmes.

Illiteracy is dominating for their poor sustainable livelihood conditions. Rural area people are most important for learning regular problems. They are: importance of education, agricultural awareness, government programmes, using of vehicles, water management techniques, health awareness (Typhoid, Malaria, seasonal deceases, ect.), self employment programmes and occupational skill programmes. Above problems are solved by only through providing adult

educational programmes. Some universities are provided skill developing programmes like tailoring, pre-children teaching courses, those programmes are provide through department of Adult Education. But all most of all Universities are taken U turned to providing skill developing programmes in Andhra Pradesh. The skill developing programmes are provides re-strength in their occupations and creating self-employment. Adult education literacy gives knowledge about agricultural workers wages, formers know about Soil testing, fertilizers, new information from scientists. Adults get better suitable skill training, adult education provide knowledge of health and first aid. Minority groups, scheduled caste, scheduled tribes people know about constitution safeguards. Rural women awarded about pregnant care, nutrition food. Women know the importance of education when she sent the children to school never stop in middle. Mother is the first teacher to every child, she civilized the children. She is the light of the house, give brightness to every child.

Skill developing programmes uses

- Promote gender equality
- Improve material health
- Better environmental sustainability
- Life skills provide self employment for young people and adults
- Increase adult literacy
- Improve the quality of life and reduce poverty
- Awareness about HIV/AIDS and other diseases
- Adult literacy helps global development

In Andhra Pradesh almost all Universities are failed to providing skill developing programmes. Due to no appointments in department, sufficient funds not providing by the government. I expecting the central government programme RUSA can provide re-strength in future to universities.

Conclusion

Number of researchers, researches have indentified that adult educational programmes can develop sustainable development, it provides building of skills, systematical thinking, critical thinking, futures thinking, creativity, visioning, problem solving, decision making and gender equality. Adult education is a right it is provide better nation, creates active citizenship and it present powerful economical sustainable development. Adult literacy helps to promoting democracy, justice, gender equality, scientific, social, economic development and for building world's best nation. The nations feel responsibility for providing skill development programmes through adult education to adults, the nation built world best nation in future.

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Researcher as a Participant Observant: Some Methodological Issues

Dr. P. Viswanadha Gupta

In participant observation, researchers take part in the lives or groups of people as a means of learning about their lives and to gain understanding of all the social processes. The researcher lives and participates in the chosen field settings for an extended period of time. In the field areas, researchers actively participate in the routine and extraordinary activities of the people in their field areas. Researcher as a Participant Observer collects data through detailed observation while participating with the community members, gain

Research studies describe participant observation as an approach, a strategy, a method, a methodology, a technique, a process, a design and an analytical tool. It is often described as simply' hanging out' due to the inordinate amount of time researchers spend informally observing and participating in activities of daily life in settings.

Although it has a long history dating back to the 1800's,Brownislaw Malinowski, a British anthropologist, was the first researcher to describe the use of participant observation in his research.In sociology, participant observation was developed and codified as a technique by a group of social scientists at the University of Chicago.

The Concept of Participant Observation : Erving Goffman (1986) describes participant observation as 'getting data….by subjecting yourself, your own body and your own personality, and your own social situation, to the set of contingencies that paly upon a set of individuals, so that you can physically and ecologically penetrate their circle of response to their social

situation. As such, participant observation affords emphatic understanding of the meaning given to the social action in settings , such understanding occurs when researchers are able to understand actions as those in the field setting experience them

Participant observation is significant not just because the researcher can 'see' things happen. It rests on something much more fundamental. It is possible by virtue of the human and social capacity we have-as ordinary actors- to engage with our fellow men and women and through practical and symbolic transactions with them to acquire some degree of understanding of them.

It rests on the capacity we have, as a basic precondition of everyday life, to take the role of the other, in achieving at least a partial perspective on the social world and on ourselves from the point of view of others. It also rests on our ordinary (but extraordinarily skilled) capacity to learn from the social world about us; to learn languages and other symbolic forms, to acquire abstract knowledge, and to develop and practical skills. It also depends on our ability to reflect upon ourselves as objects of knowledge. We are, therefore, able to engage with other actors and in new social settings with reflective self-knowledge, these capacities are ordinary aspects of our everyday competence as social actors.

Spardley (1980) says that participant observation is a way to document the practices of everyday life, the performances of social actors, and the conduct of social encounters among players in a setting. Such documentation is, however, itself social action in that researchers are themselves social actors who observe what goes on, narrate it, and then try to interpret it.

As such, participant observation is much more than simply a data collection activity. It involves understanding of

social life through, 'the interpretation of meaningful and intentional social action; an understanding of the social organisation of concerted social activity.

The process of participation observation is multifaceted; it is, at its core, an intellectual activity but one that requires emotional and physical engagement in order to fulfil its purpose.

Participant observation is essentially a process of socialization. It is quintessentially a human activity in that researchers develop relationships with a group of individuals who are often unknown to them prior to the study. This aspect of participant observation is one that constitutes it as unique among research activities and is necessitated by another characteristic that contributes significantly to its uniqueness, the requirement for participation in settings

Participation Observation is a beginning step in ethnographic studies. Schesul, Schensul, and LeCompte (1999) list the following reasons for using participant observation in research

1. To identify and guide relationships with informants;
2. To help the researcher get the feel for how things are organised and prioritized , how people interrelate, and what are the cultural parameters;
3. To show the researcher what the cultural members deem to be important in manners, leadership, politics, social interaction, and taboos;
4. To help the researcher become known to the cultural members, thereby easing facilitation of the research process;
5. To provide the researcher with a source of questions to be addressed with participants.

The fundamental principle of participant observation is that researchers gain understanding of those whom they study through engaging with them. Gans (1999) mentions that part of

engaging with participants involves getting them to share their lives and talk about their experiences. Participants will be much more likely to do this if they 'feel that the researcher can share in and emphathize with the difficulties and joys attendant to those experiences. This involves the researcher being empathetic. Empathy is needed in order to understand participant's meaning and experiences.

The validity of participant observation was measured by Bernard (1988) considering the following aspects

1. It is a strategy: Participant observation is not only a method for gathering qualitative data but it is a strategy that facilitates data collection in the field. It is a technique to watch and have witness, interview, note the behaviour of the respondents or the subjects of research through rapport building
2. Participant observation reduces the problems of reactivity. People change their behaviour when they are being studied by the outside researcher. As researcher shows less and less of curiosity on the behaviour of the people, people take less and less interest in his movements. Lower reactivity means higher validity of data. Therefore a researcher must show himself as less interested in the people's personal behaviour but be conscious to observe them
3. Participant observation helps to formulate sensible questions in the native language. The researcher of the same community/culture can make up sensible, precise and meaningful questions considering not harming and insulting the cultural groups during personal interviews. Otherwise, the researcher/stranger will have a chance to design and ask stupid questions with the cultural groups other than his/her own
4. It gives intuitive understanding of culture/events:

Participant observation gives an intuitive understanding of what is going on in a culture, and allows making strong statements about cultural facts that have been collected. It extends the validity of information, what was learnt from interviewing and watching people.

5. It helps to solve research problems: Many research problems simply cannot be addressed adequately by anything except participant observation. Participation is an access to a group, and to become a part of the group. It helps to solve the problem of being outsider researcher. The access can be built through participatory intoxication.

Skills of Participation Observation: Bernard (1988) recommends the following skills to become good participant observer in the field settings

1. Learning the Language: Language is one of the most important tools to understand the meaning of data. Unless a researcher is really a full participant in the society that is studying, being a participant observer is an unnatural and uncomfortable role to play at first. Learning language of the study group at least helps to understand the meaning of culture and the respondent will help the researcher communicating clearly as par the excellence of local vocabulary.
2. Building Memory : Building the ability to remember things we see and hear is crucial to successful participant observer
3. Maintaining Naiveté: Try also to develop your skill at being novice- at being someone who genuinely wants to learn a new culture. This will come naturally in a culture that is unfamiliar to the researcher, but it is bit harder to do in your own culture. To maintain Naiveté, the researcher needs to establish rapport with the people.
4. Building Writing Skills: The ability to write comfortably and

clearly is one of the most important skills you can develop as a participant observer. Ethnographers who are not comfortable as writers produce few field notes and little published works.

5. Select Key Informants : Key informants are those whoever are more than someone who controls a lot of information about a culture and is willing to share with the researcher

Some of the Limitations/Disadvantages:

Participant Observers have a dual purpose in settings; first, to engage in the activities of the setting, and the second to observe as much as possible it occurs. Thus, researchers have to become involved in settings, both with the people and the activities, yet retain enough distance to be able to observe and document.

Several researchers have noted the limitations involved with using participant observation as a tool for data collection. For ex, DeWalt (2002) note that male and female researchers have access to different information, as they have access to different people, settings, and bodies of knowledge. Participant observation is conducted by a biased human who serves as the instrument for data collection; the researcher must understand now his /her gender, ethnicity, class, and theoretical approach may affect observation, analysis and interpretation.

Another reason is that the researcher not being included in the activities taking place in a culture, include lack of trust, the community's discomfort with having an outsider there. Some of the ways the researcher might be excluded include the community member's use of language that is unfamiliar to the researcher, their changing from one language to another that is not understood by the researcher, their changing the subject when the researcher arrives, their refusal to answer certain questions. Another limitation involved in conducting participant

observation is that the researcher must determine to what extent he/she will participate in the lives of the participants and whether to intervene in a situation.

A major limitation in the participant observation analysis is the researcher's bias. Unless ethnographers use other methods than participant observation, there is likelihood that they will fail to report the negative aspects of the cultural members of the group they studied. Ratner (2002) summarizes that researcher's bias is one of aspects of qualitative research that has led to the view that qualitative research is subjective, rather than objective. However, there different views on the nature of subjectivity and objectivity in social science research studies, as some critique that one cannot be both subjective and objective, while others believe that these two can coexist, that one's subjectivity can facilitate the understanding the world of others.

As Kawluch (2005) suggests participant observation requires the researcher to concurrently observe and participate, to the extent possible, in the social action that they are attempting to study. By being present, actively participating in the experiences and interactions occurring, and by engaging in personal relationships with individuals in settings, researchers can get closer to experiencing and understanding the points of view of participants. At the same time, researchers have to maintain the intellectual distance necessary to critically analyze the experiences in which they engage. Participation with the community on which the research is associated provides a best way of understanding cultures and meanings of data.

Participant observation involves the researcher's involvement in variety of activities over an extended period of time that enable him/her to observe the cultural members in their daily lives and to participate in their activities to facilitate a better understanding of those behaviours and activities.

The process of conducting this type of field work involves gaining entry into the community/culture, selecting the gatekeepers and key informants, participating in as many different activities as are allowable by the community members, clarifying one's findings through member's checks, formal interviews, and informal conversations, and keeping organized, structured field notes to facilitate the development of a narrative that explains various cultural aspects to the reader.

Participant Observation has proven to be beneficial tool for producing studies that provide accurate representation of a culture. Though there are some limitations, this is one of the best and practical research methods to explore and unravel the real and valid data in any type of society.

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Rural Health Care System and Health Infrastructure in Visakhapatnam District Andhra Pradesh, India

Dr. V. Hari Babu

Introduction

The common concern for human health and freedom from disease provides a purposeful focal point around which international cooperation has developed over the years. In recent years, governments all over the world have come to accept the health of the people as a public responsibility. In the developing countries like India, the governments regulate and maintain health standards, provide preventive and curative services and build up the infrastructure for medical and health services. Health administration in any country is a part of the total administration and thus influences and is influenced by this general administrative culture. But, in India, the administrative machinery has not been adequate to handle the tasks of economic and social development. The lack of efficiency in administration equally holds good for the health organization as well. In health sector, it is emphasized that the better management of health services is essential if higher standards of health care are to be achieved. The patterns of use of health facilities are shaped in party and political concerns, with some health facilities identified as a resource for particular support groups, to the exclusion of others(Gopinath et al 2006). Gupta (2005) stated that India has exceptional capacity to deliver services, as evidenced by its smooth conduct of elections and census across a vast population including there are 23 districts in Andhra Pradesh state. The health policy, system followed for the health care, especially in the rural areas are the same through out the state being controlled and co-ordinated by the Govt. of Andhra Pradesh. Hence, for the purpose of the present study, all the districts were listed in alphabetical order and one

district viz. Visakhapatnam has been selected following the random selection procedures.

Methodology

The present study is a purely narrative and descriptive one. With a view to study the functioning of Primary Health Care System from the Visakhapatnam district of Andhra Pradesh state. Health care system for the rural population follows the same system that is in vogue in the state. The three basic operational components are the sub-centers (SC), primary health centers (PHCs) and the first referral units i.e, the community health centers (CHCs). The district medical and health officer (DM&HO) is responsible for all administrative and programme management issues at the district level, who discharges his duties under the control of the commissioner, family welfare, Government of Andhra Pradesh.

For the sake of administrative convenience, the total area of the district is divided into 3 divisions viz., Visakhapatnam division, Narsipatnam division and Paderu division. Among these three, Visakhapatnam and Narsipatnam divisions cover the plain area of the district while the Paderu division covers the agency or tribal area of the district. Although the area is demarcated into three divisions, for all practical purposes a dichotomy between plain and tribal areas is followed.

At present the rural health care delivery system in the district is operated through the general three tier system comprising of sub-centers, PHCs and CHCs. There are altogether 75 PHCs, 572 sub-centers and 5 CHCs functioning at the time of the survey.Table.1 shows the list of PHCs under the three administrative divisions is as follows.It is noticed from the table that there are 27 PHCs in Visakhapatnam division of the district, 16 in Narsipatnam and 32 in Paderu division of the district. Altogether there were 572 sub-centers functioning under these

75 PHCs in total. In addition to these, there are other health centers, which cater to the health care needs of the people of Visakhapatnam. They are:

1. One rural health center at Simhachalam (under the control of D.M.E.)
2. Six CHCs under the control of Andhra Pradesh Vaidya Vidhana Parishad at Aganampudi, K. Kotapalli (Visakhapatnam Division) Nakkapali, Kota Uratla (Narsipatnam Division), Paderu, Araku (Paderu Division).
3. Two area Hospitals at Narsipatnam and Anakapalli
4. Five Urban family welfare centers (UFWCS) at Bheemunipatnam, Chodavaram, Anakapalli (Visakhapatnam Division) Narsipatnam, Yellamachili (Narsipatnam Division)
5. One AMAV maternity hospital at Anakapalli.

There are 20 PHCs converted to 24 hours rural maternity health care centers where the services of a gynecologist and pediatrician are available and the health centers provide maternity and child care services round the clock. When the specialist medical officers are not available, the services of private medical practitioners are being utilized on payment of honoraria or on contractual basis.

However, for rural health care services delivery mechanism, the role of the 572 sub-centers, 75 PHCs and the 5 CHCs (at Yellamanchili, Bhimili, Chodavaram, G. Madugula, and Chintapalli) is of primary concern and hence, the following discussion is focused on these or restricted only to these centers – which are established under the three tier system as per the norms set by the Government.

Table.2 shows the information relating to the number of each of these health centers in Visakhapatnam district along with the building status of the three types of health centers. There are 572 sub-centers 75 PHCs and 5 CHCs functioning in visakhapatnam district. Out of the 572 sub-centers, only 164 are working in Government buildings, while the remaining 408 are being run in rented buildings and need construction of Government buildings. Among the 75 PHCs, 71 are having Government buildings and the remaining four are functioning in rented buildings. Buildings are reported to be under construction for these 4 PHCs. However, all the 5 CHCs are functioning in Government buildings only.

Table.3 shows that on an average each PHC in plain areas of the district has 5–6 sub-centers while this number is 4-5 in agency or tribal areas. The average rural areas covered by a sub-center is reported to be 12 to 15 km in plain areas and 20-30 km in tribal areas and on am average one sub-centers covers 8.74 villages. Each PHC on an average covers 66.24 villages and each CHC covers 1006.6 villages on an average.

Table.4 shows that the position of the medical officers in the PHCs of Visakhapatnam district. It is clear that for the 75 PHCs, 154 medical officer posts are sanctioned and out of there only 131 are in position and 23 are vacant. Obviously, the medical officer posts are more vacant in tribal areas (18) compared to the plain areas (5). Out of the 76 PHCs 51 are with one medical officer, 21 are with two medical officers, 2 are with three medical officers and in the remaining 2 PHCs there are 4 or more medical officers sanctioned.

Table.5 shows the position of the multi purpose health workers (MPHWs) male and female working in the PHCs of Visakhapatnam district. It is reported that altogether, 587 MPHW (F) / ANMs are working in the district against the sanctioned posts of 642. Out of the 642, 488 are working on a

permanent basis while the remaining 99 are working on contractual basis. In the case of MPHW (M) / Male workers also, 466 are functioning against a sanction of 477. Out of the 466, only 173 are working on regular basis while the remaining 293 are working on contract basis. Obviously, 55 posts of the ANMs and 11 posts of the male workers are still vacant and need to be filled for effective functioning of the health care delivery system.

Table.6 reveals the position of health staff at supervisory cadre, Lab Technicians and the Pharmacists in the PHCs of Visakhapatnam district. It can be observed that there is altogether, 256 health staff at the supervisory cadre, of whom 166 are male supervisors and the remaining 99 are female supervisors. These are usually promotees and there is no sanction for these posts. These figures indicate that the ratio of male workers and supervisors is 1.2:8 while the ratio of female workers and supervisors is 1.5:9. Hence, there is every need to increase the number of female supervisors in order monitor the work of less number of ANMs so that the functioning is more effective.

Regarding the Lab Technicians, it can be noticed that the total sanctioned posts are 128 of whom 65 are for pathology and 63 are for malaria. Out of the 65 lab technicians (pathology), only 52 are reported to be functioning (21 regular and 31 contract) and out of the 63 Lab technicians (Malaria), only 54 are functioning (46 regular and 8 contract) leaving 13 posts of the lab technician (Pathology) and 9 posts of lab technician (Malaria) vacant. There is every need to fill these vacancies as their services are of help in the diagnosis of malaria as well as HIV and other infectious diseases.

In Visakhapatnam district, the total number of pharmacist posts sanctioned is 105. Out of which 95 are currently in position and 10 posts are falling vacant. Out of the 95 persons working, 70 are working on regular basis and the

remaining 25 are reported to be working on contract basis. Laveesh and Dutta(2007) observed that the two most important issues which emerge with regard to rural health infrastructure in the country are lack of access for many and poor quality of services.

Conclusin

The health sector deals with preventive, promotive, curative and rehabilitative aspects of health care activities and uses the services of government, private and voluntary agencies, there is every need for careful planning and administration of the associated activities. There are a large number of administrative problems, which account for the unsatisfactory working of the health administration. Hari Babu(2008) emphasized that the existing manpower is an important prerequisite for the efficient functioning of the Rural Health Infrastructure.

Moreover, the increasing population, almost 50% vacancies of male worker posts at Sub-Centers have resulted in tremendous workload for the ANM, which has resulted in ineffective outreach programmes, especially for maternal and childcare. This suggested the need for having area-specific and group-specific interventions in the on-going programmes. Hence, there is a need for periodical evaluation of the administrative performance, so that new guidelines and suggestions could be offered for improving their efficiency from time to time.

Table.1: Details of Primary Health Centers (PHCs) in Visakhapatnam District

Name of the PHC		
Visakhapatnam Division		
Revidi	Sabbavaram	Devarapalli
R. Tallavalasa	Gullepalli	Vechalam
Anadapuram	Thimmapala	Gavaravaram
Madhurawada	Kasimkota	Ravikamabhama
Pendurthi	Thallapalem	Butchipeta
Gajuwaka	Munagapaka	Turakalapudi
Kanithi	Chuchukonda	Vaddadi
Parawada	Chowduwada	Cheedikada
V. Cheepurupalli	L.V. Palem	Pedagogada
Narsipatnam Division		
Penugoluu	Makavarapalem	Golugonda
Regupalem	Payakaraopeta	Vemulapudi
Godicherla	Srirampuram	Atchuthapuram
Nathavaram	Rolugunta	Haripalem
Dimili	K.J. Puram	Rambilli &
Paderu Division		
Ananthagiri	Edulapalem	Korukonda
Pinakota	Dumbriguda	R.J. Palem
Bheemavaram	Kilagada	Downboru
Lungaparthi	G. Madugula	Kantaram
Gannela	Gemmeli	K.D. Peta
Madagada	Pedabayalu	U. Cheedipalini
Munchingput	Gomangi	G.K. Veedhi
Labburu	Rudakota	Darakonda
Hukumpeta	Lothugedda	
Uppa	Lambasingi	
Minumuluru	Tajangi	
Pedawalasa	Sapporla	

Table.2: Health Centers and Building status in Visakhapatnam District

	Number
No.of sub-centers functioning	572
No.of PHCs functioning	75
No.of CHCs functioning	5
No. of sub-centers functioning in Government buildings	164
No.of sub-centers functioning in rental buildings	408
No.of PHCs functioning in Government buildings	71
No.of PHCs in rented buildings	4
No.of PHCs in buildings under constructions	4
No.of CHCs functioning in Government buildings	5

Table.3: Average number of Villages covered by these health centers in Visakhapatnam Districts

	Average
Average number of villages covered by one sub-centers	8.74
Average nuber of villages covered by one PHC	66.24
Average number of villages covered by one CHC	1006.6
Average rural area (km) covered by one sub-centers	12-15
Average rural area (km) covered by one PHC	70-90

Table.4: Position of Medical Officers in the PHCs in Visakhapatnam District

	Plain area	Tribal area	Total (in district)
Number of M.O. posts sanctioned	101	53	154
Number of M.O. posts in position	96	35	131
Number of M.O posts in vacant	5	18	23
Number of PHCs with 4 + doctors	0	2	2
Number of PHCs with 3 doctor	2	0	2
Number of PHCs with 2 doctors	16	5	21
Number of PHCs with 1 doctor	24	27	51

Table.5: Position of Health workers in PHCs of Visakhapatnam District

	MPHW (F) / ANM	MPHW (M) / Male worker
Cadre strength sanctioned by the govt.	642	477
No. Working on regular basis (permanent)	488	173
No. Working on contract basis	99	293
Total employees in position	587	466
No.of posts vacant	55	11

Table.6: Position of Health Supervision, Lab Technicians and Pharmacists in the PHCs of Visakhapatnam District

	Number
Supervisory Staff	
MPHS (Male)	166
MPHS (Female)	99
Lab Technician (Pathology)	
No. of Posts sanctioned	65
No. of working on regular basis	21
No. of working on contract basis	31
Total employees working	52
No. of vacant posts	13
Lab Technician (Malaria)	
No. of Posts sanctioned	63
No. of working on regular basis	46
No. of working on contract basis	8
Total employees working	54
No. of vacant posts	9
Pharmacist Grade II	
No. of Posts sanctioned	105
No. of working on regular basis	70
No. of working on contract basis	25
Total employees working	95
No. of vacant posts	10

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Teaching and Learning Strategies in 21st century

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Teaching is an interaction process, interaction means participation of teacher, student and both are benefited by this the interaction takes place for achieving desired Objectives. Teaching is relationship which is established between three focal points in education (teacher, student and subject) .Teaching Strategies play a vital role in education system when they are implemented in system that encourage collaboration among staff, students and in which each is a part of a well planned whole teacher should plan short term and long term Strategies according to student and teaching methods is part of Strategies, Student enable to know value education, Life skill education by Strategies used by teacher which help them in meaning a valuable person of India output teaching learning process is depending upon teaching Strategies it is the core elements of education system.

Key words: interaction process, achieving, collaboration, teaching methods etc

Introduction:

In teaching learning process teachers, students used many methods, techniques and strategies in daily teaching, learning, and process, there are many methods e.g. lecture discussion, inductive, deductive etc. But in this modern era of education There are many new methods, techniques are invented by educations teaching, learning strategies are the thoughts of actions that individual use to accomplish learning all strategies are effective and helping to acquire successful knowledge and improve students' performance a student centered approach which actively engages the young person.

Some of learning strategies that could be incorporated in a comprehensive approach included self-directed learning, Co. operating learning, role playing model, peace deduction and parent involvement.

Strategies are most successful when they are implements in a system that encourages collaboration among staff and students and in which each is a part of a well-planned whole education system. Strategies are most effective when they are applied in positive, supportive environment, where there is recognition of the emotional, social of psychical needs of students and where individual strengths are recognized natured and developed.

Strategies:

Teaching learning strategies helps to develop listening verbal communication, critical thinking and decision making power skills in the classroom context. Teaching learning strategies that motivates student and increase students retention by creating opportunities for students to see, hear says and do Malcolm Knowles effective when if moves practically, relevance respect etc. instructors who understand and accept these guiding principles will greatly enhance the learning experience of their students

Using teaching learning strategies:

The teaching of learning strategies are used to engage student. Teachers should refer to before planning of the resource for an explanation of the purpose and how to implement the strategy with their class.

1. Co-Operative Learning Co- Operative learning is strategies one of the best research of all teaching. The result show that student who have opportunities to work collaboratively, learning faster and more efficiently, have grater retention and

fell move positive about learning experience. In this Co. Operative learning both teacher and students are aware of the teaching learning process. Co- Operative learning means learning with group it is a way for students to learn essential interpersonal life skill and to develop the ability to work collaboratively. A skill now greatly in demand in the work place. It is a way for students to take turns with different roles such as facilitator, reporter, recorder etc.

Objective of co. operative learning strategies:

1. To work collaboratively.
2. To learn faster and efficiently.
3. To have grater recantation.
4. To work with group.
5. To develop interpersonal life skill.

2. Active learning strategies:

Mayers and jones (1993) define 'Active learning as learning environments that'

Allow " Students to talk and listen, read write and reflect as the approach course content through problem soluingexercise, informal small group, simulation case studies, role playing and other all of which require student to apply what they are learning many studies show that learning is enhanced when students become actively involved in the learning process.

Instructional strategies that engage students in the learning process, stimulate critical thinking and greater awareness of other perspectives, all at though there are times when lecturing is the most appropriate method for disseminating information current thinking in college teaching learning suggests that the use of a variety of instructional strategies can positively enhance students learning obviously,

teaching strategies should be carefully matched to the learning objectives of a particular lesson.

Objectives Active learning strategies:

1] To develop confidence of the students.

2] To active participation of the students

3] To make students active in learning.

3. Ict enabled flexible teaching learning strategies:

This strategy enables the learner to choose the content, media and the method of learning as per one's own requirement and gets considerable scope for interaction with the tutors and fellow learners. This includes.

1] Virtual learning environment

2] G-Mobile Technology.

3] Blended learning (convergence of traditional teaching and learning method)

4. Thinking skills strategies:

Thinking skills strategies are teaching learning strategies that strive to improve achievements by consciously developed students ability to consider ideas, analyze perspectives solve problem and make decisions. In this sense all teaching learning instructions strategies could be considered thinking skills strategies. However it is use full to focus on those strategies that develop thinking directly from lower to higher order (e.g. bloom's knowledge synthesis)

1] Brian storming.
2] Concept mapping
3] Experimenting
4] Mind map etc.

Conclusion:

By using co. operative learning in the learning process the teaching and learning becomes effective the student get the freedom for their own thinking power, imagination power, evaluation, collecting information analysis of data, synthesis and knowledge construction as like co. operative learning keeping fit for learning is different. A teacher can give psychologically treatment to the student class and made the environment mentally and physically healthy.

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Statistics in Social Sciences

Dr. Madhav B. Kulkarni

Statistics is a subject that confuses many, scares some but excites few. "After all how thrilling can numbers be?" many of us think. This situation is unfortunate and unnecessary. It is unfortunate because citizens in all walks of life need to understand their own problems and problems of the society. This often involves appreciating statistics It is unnecessary because heart of statistics is not numbers nor formulae but is logic. And we all can understand logic, particularly when we understand it in the context of our own problems. Statistics essentially deals with gathering of information, analyzing it, drawing conclusions, and then recommending appropriate remedial actions. Since any information is incomplete and therefore there is an element of uncertainty. Statisticians can help make rational and correct decisions in face of uncertainty most often and not always.

Matters in the sphere of politics, economics, sociology, law etc. affect lives of all. Here too numerical information is often the basis of many decisions, policies and actions.. While good amount of work can be done in social sciences without numbers, measurement always strengthens any argument and can be essential in some situations.

Here is a simple example. Large sums of money are currently spent on increasing awareness of environment. Funding agencies are keen to know if the work has any impact. So we may record interviews of students and members of the society to check its impact on the society. Can we evaluate the success before and after the education programs on environmental awareness of the students? The difference if any will be a numerical measure of effect on society.

Abodes of Gods: Students of social sciences study religion and rituals of tribal groups. It includes study of their deities and sacred groves, various sacrifices etc. Here is a proposition: **Higher the degree of elaborateness in a cult or worship spot, greater is the degree of destruction in the surrounding forest**. If true this will mean that more primitive tribal groups will live in better conserved surroundings. But how does one quantify either extent of conservation or of degradation? A deity in the open consisting of a rock covered with red lead can be regarded as the most primitive. A roof, walls and floor make the temple more elaborate. If the deity is beautifully carved, elaborateness is greater. So we have three ordered categories. Now order the surrounding forest by the tree density i.e. number of trees per unit area and decide on suitable intervals. Then there can be categories such as very dense, moderately dense and disturbed. So, a contingency table can now be designed as shown in Table 1.

Table 1: Association between Deity Elaborateness and Forest Status

Status of Surrounding Forest	Elaborateness Level of Deity		
	Low	Medium	High
Disturbed	E		c
Moderately Dense		b	
Dense	A		d

Here we can actually measure association between the two. If all cases fall in cells a, b, c and other cells are empty then the proposition is strongly supported. If, on the other hand, all cases fall in cells d, b, e, the conclusion is reversed in that elaborate temples seem to harbor dense vegetation around etc. In practice there may be non zero counts in some of the 9 cells. In statistics, such contingency tables can be studied using measures such as chi-square and we can quantify intermediate

level of association. This example illustrates the use of chi-square test statistic in studying important social problem.

Gallup polls

Ours is a democratic constitution. Periodic elections are the means by which we, the people, exert our supreme right to choose our rulers. Thousands of candidates seek the blessing of the electorate. Therefore any means of assessing inclination of voters is of great interest. Consequently, sample surveys of voters evoke tremendous excitement. Such surveys seem to have started in early nineteenth century in United States.

Literary Digest, a prestigious magazine in USA conducted in 1930's a mail questionnaire survey of about 2.4 million voters and estimated that Alfred E. Landon will win over Franklin D. Roosevelt in the presidential race In this instance, actual result was the opposite of the prediction. Roosevelt won handsomely. What went wrong? The sample size was absolutely massive and the survey could not be faulted on that score. However, **selection of voters turned out to be biased**. The survey used lists of car and telephone owners to send the query forms. These were all individuals in the average and above average income groups. In this section of society, the Republican candidate was popular. But Democrats had support in lower income groups which were more populous. This signal failure of electoral poll emphasized the **importance of proper selection of a truly representative sample**. This was not the only election survey at that time. Several others were carried out too. One of them was designed by George Gallup. It ensured better representation of the electorate and did forecast Democratic victory with a much smaller sample size. Ever since, name of George Gallup has become associated with election surveys. Apart from anticipating the winner there can be other aspects of elections which need a quantitative study. Of late television debates have become an important part of American Presidential elections. It

is of interest to see if such debates make voters change their mind and in which direction. Suppose in a hypothetical study 100 voters expressed their preference before and after a debate and the result is given in Table 2 below.

Table 2: Preference Before and After Debate

Before	After		
	Democrat	Republican	Total
Democrat	50	20	70
Republican	5	25	30
Total	55	45	100

Here 25 out of 100 voters have changed their minds. 20 people switched from Democrat to a Republican candidate while 5 switched the other way round. Should the two numbers be regarded as essentially equivalent or have Republicans benefited more? Without going into technicalities we will say that the difference squared and divided by the number who switched i.e. $(20-5)^2/25$ is a good measure of relative effect of debate. If this quantity is large we may regard the debate to have helped Republicans significantly. In technical jargon this is called McNemar test after the psychologist who invented it.

Surveys are useful to study virtually any aspect of society. Kenneth Boulding, a famous social scientist termed the survey method **'telescope of the social sciences'**. All schools and colleges can undertake the exercise of conducting such surveys locally on questions of local and broader interest. National Sample Survey Organization (N.S.S.O.), a professional group set up by the Government of India conducts periodic 'rounds' of expenditure surveys. These reveal the felt need of people in urban and rural areas. Results of such surveys constitute major inputs into the national planning processes. These survey reports are available on the websites of NSSO and

students and teachers of economics, commerce and other disciplines can use them in their studies.

Measuring the non-measurable

Economics is the science and art of using limited resources to satisfy our unlimited wants. We bring home a salary; spend the money on food, housing, clothes, education, entertainment, health and what not. Many people get a basic salary plus a dearness allowance (or cost of living allowance / COLA). What is cost of living? Economics is of course concerned with prices, demand and supply. When price falls demand rises (case of negative correlation). Cost is another name of price. We understand what is cost of milk or bread. But what is cost of living as a whole? Clearly, **we need an overall figure measuring this concept**. Here is a peculiar situation. The entity to be measured does not really have physical existence. It exists only in our heads. In this sense we are trying to measure the unmeasurable. Cost of an item can easily be measured through market inquiry. But to measure (overall) dearness level, we have to make this concept operational first before measurement is possible. Such a measure is **consumer price index**. Index construction is an art.. An index is constructed when direct measurement is not possible. Human height can be measured in cm and fruit yield can be measured in kg and no index is necessary. On the other hand, intelligence, health, poverty, customer satisfaction etc. cannot be measured so simply. You must spell out the calculation procedure and once agreed upon, it should be followed by all. **This general agreement is the strength behind any particular index.**

Consider the case of measuring intelligence. We can say that Mr. X is more intelligent in mathematics than Mr. Y since latter got fewer marks than X. But that is only one aspect of intelligence. There are others such as verbal skill, recognizing geometric patterns, judging weights, having a ready wit and so

on. But how do we combine such measures? Psychologists have answered this question by means of a formula – IQ (intelligence quotient). In case of IQ we know that average humans have IQ of around 100, geniuses have values say above 140 while value below 70 probably suggests an imbecile. For a very bright person, the index value should come out quite high. Such agreement increases credibility of an index. People must agree with index.

Coming back to dearness level, construction of a 'Consumer price index' involves 3 steps. **First, prepare a list of items that a typical consumer buys**. **Importance of each item is assessed and a weight is given accordingly. Next we calculate a weighted sum of prices. Lastly the figure is expressed as a multiple of the corresponding value for a base or reference year**. Index value for base year is 100. The corresponding value for current year is usually much higher. This rise in index is termed as inflation. Generally we express inflation rate as % increase in consumer price index. In developed countries, rate of inflation is very low, say a couple of percent per year. When inflation rate enters double digits, all Indians feel concerned (or such is the assessment of some analysts). The population tends to become more resentful of the rulers. Suppose you have 100 rupees, enough to buy a shirt. But tomorrow, the same shirt will cost 200 rupees. Then it is best not to keep your money idle but quickly exchange it for goods.

Measurement of Poverty

Recently Professor Amartya Sen made all Indians proud by winning the Nobel Prize in economics. Among other things he is known for his research on measurement of poverty. Sen's index of poverty (or minor variations thereof) is the standard method of poverty measurement at least in research literature. So, how do we measure poverty? Here a **crucial term is poverty line.** This is the level of income needed to satisfy a person's basic

needs. Make a list of all items that are essential (e.g. food items, clothing, medicine etc.). Decide the quantity of each item needed. Obtain information on price of each item. Hence find the amount of money needed to satisfy basic needs. Anyone with income below this line is regarded as poor.

At a conceptual level, this sounds very reasonable. But making a list of essential commodities is not a trivial task. South Indians cannot survive without rice and north Indians have to have wheat. Alcohol is an essential commodity for many tribal groups. It is part of all religious rituals. Some people consider tobacco and alcohol as essential.

Even if items are agreed upon, their quantities are not easy to decide you may find it surprising, but estimates of nutritional requirement are constantly revised, **often downwards**. So how reliable can estimated poverty line be at any moment? Thus it is very difficult to come up with a really good evaluation of poverty line. Suppose we do have one reasonable value to be used. Still measurement of poverty does not follow. There can be various ways of using poverty line. 'Head count' is simply the number (or proportion) of people whose income falls below poverty line. This index is not too bad, except for one hitch. Among people who have incomes below poverty line, some incomes are just below while others are far below. This gap is ignored by 'Head Count'. Also there is the angle of 'relative deprivation'. If every one shares the same suffering, there is no relative deprivation and poverty hurts less in such case. Inequality makes the impact of poverty more severe. Amartya Sen showed how all these considerations can be given due weight in constructing a 'good' poverty index. This index P is defined as P = H {I + (1-I)*G}. Here H is head count or proportion of people with income below poverty line. I is the income gap or average deficit for poor people defined as I = (z - $\overline{X}$)/z. z is the poverty line. $\overline{X}$ is the average income

among the poor. G is the Gini coefficient of inequality among poor given by $G = \frac{\sum_{i=1}^{q}\sum_{j=1}^{q}\left|X_i - X_j\right|}{2q^2\overline{X}}$.

If there is no inequality among poor G is zero (can you see why?) and Sen's index is simply H*I.

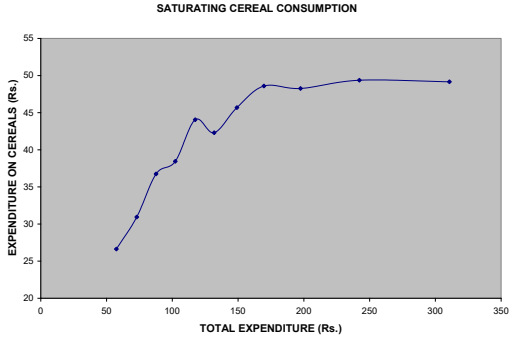

Figure 1: NSS 45th Round Rural (1989-90) Data (Expenditure/Capita/Month)

The question of avoiding use of a seemingly arbitrary poverty line has foxed many an expert. Here is one possible alternative.

If we plot income level on X- axis and money spent on cereals (rice / wheat etc.) on Y-axis, the data seem to follow a rising but saturating curve. See Figure 1. This is a well known phenomenon. As you spend more on cereals, you get satiated and any further income is spent elsewhere. The level to which this curve approaches can be regarded as requirement. We can say that people reveal requirement through their expenditure pattern. Poverty (in cereal consumption) can be assessed by comparing actual consumption with this requirement.

Index construction is only one area in economics. But quantitative inputs are needed in many. To give a couple of examples, consider forecasting share prices or tax collection or export earning. Quantitative methods are now in use by administrators. Take the example of the Customs and Central Excise Department of the Government of India. In addition to revenue forecast, models are used to guess under or over invoicing to avoid taxes. First a certain set of cases is examined thoroughly to decide which cases involve malpractice. Then lessons learnt from this exercise are applied to other cases to predict malpractice without detailed examination. The method in use is called logistic regression.

Statistics in banking business: Why customers change banks?

Here the question of interest was 'why customers change banks'. In particular, the desire was to study the nature of customer dissatisfaction with services of the bank. Our plan was to take a random sample of account holders and ask them their level of satisfaction (on a scale of 1 to 10) about individual services and estimate average satisfaction level.

The first hurdle was sample size. How many account holders should we interview? This calculation is very important since cost of the study depends on it. We had to make a series of assumptions. Assume that the responses will follow a discrete uniform distribution over the set 1-10. Then we know the standard deviation of the response. Let us assume that we want the sample size to be enough to ensure that the estimate has a confidence interval (confidence level 90% say) with a half width of 1. We came up with an answer of 36. There is often some problem of drop outs. So, we started with a value of n = 40.

Next step was identifying the account holders to be interviewed. Manager of the branch of the bank was ready to

cooperate and we advised him to select 40 account holders randomly. He did the job. The people were interviewed. It was time to analyze the data.. The first set of questions was about personal background. It turned out that average age of the 40 people in our sample was more than 70 years. We were shocked! How could this be? Does this bank cater to old people only? A brief observation of the operations of the branch did not give that impression. So what went wrong? Perhaps our sample was not representative. Did we not draw a random sample? It suddenly dawned on us that we had committed a mistake by depending on someone else for this very critical step. It turned out that the manager had delegated the task to a clerk who faithfully opened the list of all account holders and took the first 40 cases. These were the people who had opened account in the branch when it was inaugurated 25 years ago. No wonder their ages were all on the higher side!

We had to start all over again. This time we did not repeat the error. With a correct draw of the random sample we could show the bank what priorities customers had among the various services given by the bank.

The next exercise involved risk modeling. Here the bank had in its archives, records of loans/advances given to different customers and the repayment pattern in each case. The question of interest was whether it is possible to guess **before sanctioning the loan** whether the person will be punctual in repayment. We treated this as a problem in logistic regression with a binary response (repaid on time/defaulted) and all variables (about the borrower) with information in the loan application as covariates. This helped us test hypotheses about each regression coefficient. If the null hypothesis that the regression coefficient is zero is accepted, then the relevant variable is not useful for predicting default. Final model selected

can be used in case of a new applicant. If the estimated probability of default is high, the application can be rejected.

To summarize, statistical methods are useful in social sphere. They are crucial and integrated part any scientific enquiry. We all live in the world of uncertainty and therefore it is necessary for all of us to know some basics of statistics.

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Objectives

The Millennium Development Goal the emphasis has shifted towards people centered approach that recognizes human and social capital leading to sustainable development. In other words, developments from efforts include economic strategies tied with resonance development inputs. It is an under pinning factor for many emerging programmes. The main goal of our development policy is to create sustainable improvement in the quality of life among common people. In area of development programmes much stress was given to stakeholders oriented programmes, to facilitate increase in per capita income of individual families. Attempts are being made to empower people in all aspects like health, economy, polity, education and so on. Objectives of IJLLAD, specifically, are to publish original empirical research and theoretical studies on adult education, lifelong learning, extension, and economic relations, gender and development studies, civil society movements and studies on democracy, problems of marginalized sections, cross border terrorism and violation of human rights, ecology and environment, issues i'n governance at the local, national and regional levels

Department of Lifelong Learning and Extension

Aims & Objectives

AIMS

The Department aims at conducting Lifelong Learning programmes to meet the demands of emerging knowledge society.

OBJECTIVES

- Impart education and training in Lifelong Learning in order to provide professional manpower for the development of human resource.
- Develop knowledge, skills, attitudes and values appropriate to the Lifelong Learning.
- Integrate theory and practice in the field of Lifelong Learning.
- Promote interdisciplinary collaboration for better understanding of human problems and reaching out to larger sections of community, specially deprived groups through Lifelong Learning programmes.
- Undertake research on social problems and issues particularly related to the formal and non-formal education.