

# Information Technology: Opportunities and Challenges in Scientific Productivity in Kerala

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Information Technology has multi-dimensional Effects on human life today. This study discusses the effect of information and communication technology in scientific productivity and also analyse the nature of new interpersonal linkages in Kerala society today. Kerala stands first in literacy rate and standard of living compared to the other states of India. Kerala is considered as a society of hyper reality and a land of high degree of simulation. Information and communication technology has been providing new opportunities and challenges and reshapes almost all walks of human life. Information tech-

o s a ua oe today. In one dimension ICT acts as a potential source of opportunity and in other it is an engine of inequality and unevenness. As a developmental tool information and communication technology influences the connectivity and productivity of scientific knowledge and also functions as a strong basis or institutional interconnect does a collaboration. Information technologies have great role in 6' production and maintenance o interpersonal networks in Kerala society. The study highlights the de. of information and communication technology in scientific productivity also analyse how the ICT forming traditional forms c ships in to most modern co one.

**T**wenty first century is an era of information capitalism, which brings new area of social interaction and social realities. Information is considered to be one of the important commodities of contemporary capitalism (Dantas 2001). Modern capitalism utilizing information and communication tech-

nology as a profit making mechanism and for its development and progress. In modern society information revolution is based on the application of science and technology for material production. Dantas (2002) argues that informational labor is the labor devoted to perceive, process, and register, communicative information. In this dimension, information can be studied on the basis of capitalistic interpretation of labor. Contemporary informational capitalism mobilizes human labor and communicates information by means of adequate digital processing and communication. Post modernity contributes new forms of social realities and relationships with the help of information technology. It provides new forms of events and happenings in our society. Modernity provides synthetic excitement and enjoyment, which liberated people from the harsh realities of life. The bondage of traditionalism and the feeling of collectivity liquidated due to the emergence of information revolution. There is nothing real in this cybernetic world, the words that we speak are riot related to reality, "the relationship between word and reality is a myth" (Jean Baudrillard (1997). This is alienating people from the actual conditions of life by providing alternation from rational thinking and natural enjoyment. For Baudrillard (1997), "this apparent obsession with images has fundamentally altered our world, Images, representation and the sign codes are simulations in modern society" The modern form of commodity culture removes distinction between object and representation. Mark Poster (1988) expands the meaning of simulation and argues that it is a real piece of the imaginary. It has no relations with any reality.

The use of technology indicates the nature of communication. The advancement in information and communication technology and its most modern forms widened the horizons of knowledge. The new information and communication technology encouraged privatization of education and research system. The scientific scholars are

developed on the basis of private point of view. (McLuhan 2001) the information world has moved into a highly sophisticated electronic age, messages and travel across the globe in fractions of electronic minutes. Rapid advance in communication technology opened up new 1111401 bilities in the exchange of ideas and into mation. The modern inter continental communication network has made the world ally small. (Regina Mulay Prakh 2000) 14., velopments in informatics, telematics, video technology and optical communication opened up new ways of communication at 1 collaboration between institutions. puter technology became a powerful tool iii information flow within and outside the vi ciety. It can work as a sophisticated writing board or an electronic version of overhead projector and an electronic animator and tool for solving problems (Moho Miyar r., Emergence of computer and interne totally changed the concept of information storage and retrieval mechanisms. mation technology directly contributed in transformation of Middle Eastern societies. (Rogers 1986). The information technology has made the whole communication process easy and economical. It has also opened new areas of knowledge for all through communication devices like the Internet .It is a crucial aspect of scientific work. to' problems and opportunities afforded by new information and communication technologies were first experienced in the developed world, the US in particular (Abbate 1999).

In Kerala the effect of information and communication technology has been increasing due to informational plurality, technological diversity and growing degrees of consumerist behavior of local populace. ICT and its different forms are transforming traditional Kerala societies into modern complicated forms. It is the combination of both scientific and mathematical application of knowledge. Information and its electronic dupes make new avenues of information pools, and also act as an impetus for social development in Kerala. In post

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directly or indirectly related to the impact of latest informational resources and the information receptive nature of the host society. As a result of the rapid growth of information and com-

and artifacts from one region another became more easy and useful. ICT is a powerful information superhighway connecting computers and global networks together. The organisational frame work and information adoption nature of traditional Keralites have been changing due to the advent of information revolution.

#### Methodology and Theoretical Framework

Research design adopted for this work; descriptive in nature, Data were collected from published and unpublished documents. Field interviews conducted in connection with an international project sponsored by world soci.net. Face to face informal interviews of 85 scientists were in 2009. Respondents represent agribandry, forest management, computer science and information technology. In Kerala most of agricultural are located unavataparam and Thrissur, hence this regions were selected for the data collection. Information were from different journals and books documented and analyzed on the basis desired objectives. The main purpose of the study is to understand the effect of and communication

technology in the pattern of scientific productivity in Kerala, it also highlights the influence of ICT in interpersonal relationships of scientific communities

Effect of information technology in contemporary society is increasing, it has been acting as crude determinant of social development and progress. It is a new leans for social integration and development. There are different theoretical arguments suggested to explain the influence of information technology in modern societies. "The elixir perspective" of information and communication technology states that ICT is a developmental tool on par with educational and agricultural development. (De Roy 1998). These arguments suggest that formation and communication technology is acting as a major tool for the development of societies and other forms of technology. ICT can bring about tremendous developments in education, communication and infrastructural development of Kerala

ICT "The Affliction" (Englishard 1999). It indicates that ICT is acting as temporary solution of information crisis in modern society. It also indicates the errors in information connectivity and disturbance in information flow from one society to another. "The Affliction" arguments of information and communication technology deals with the varying nature of social stratification in modern societies, this perspective argues that, ICT is an engine of global inequality (Wilson 1999). In modern technological era the extensive use of technology is creating gap in knowledge production and its dissemination. It indicates the cleavages between rich and poor, urban and rural dwellers. The digital divide is a major form of social stratification and also resulted the reconstruction of modern society. It indicates the imbalances between physical accesses to technology. In other sense it leads to unequal acquisition or unequal distribution of information and communication technology. The most influential theoretical arguments relate to information and communication technology is functionalism and conflict perspectives. It suggest that ICT reduced the boundaries between global and local resources

#### Results and Discussions

##### Production and Productivity

Relations between countries are almost relation between public or private organizations. Technology transfer is considered as an important factor for organizational interconnectedness and developments. It can contribute latest knowledge packets from one organization to another through cross border information flows. Interchangeability of information is possible only through the exchange of products and prospects of scientific knowledge from one region to another through information superhighway. Diffusion of information technology has a direct effect on organizational competence and productivity today. It can stimulate the strength of organizational interconnectedness and the socio economic structure of the host countries. Technological connectivity and accessibility of latest information are Important factors to determine the need of the local people and their life styles. Growth and expansion of information technology depends on two factors. One is the capacity of host organization to adapt most modern technology for optimum utilization of local resources and the second implementation of acquired technology for the better productivity of the country. In scientific productivity, publication productivity exhibits a great deal of

variability. (Shurum, Soorya Moorthy, Page Miller 2007). The total number of articles published during the past five years is increased about 4.5% for both academic and government researchers in developing countries. However, the increase average ranges from 7.0% articles in Kerala to 3.6% in Ghana and 2.5% in Kenya. This data shows that information and communication technology influences the rate of local and foreign publication productivity. In Kerala, Internet and information accessibility rate of Keralites have also tremendously increased due to the effect of information and communication technology. From the above data it is clear that factors affecting local scientific productivity are largely configured by variation in location. Education, professional competence etc. The connectivity, accessibility and the nature of organizational competence have a positive impact on the scientific productivity in Kerala

##### Interpersonal and Professional Ties

Contemporary information and communication studies are highly focusing on economic rather than social dimensions. Modern forms of ICT can bring changes in the nature of interpersonal and intrapersonal relationships of individuals. It has been acting as a major mechanism for the transformation of place and identity of people who are the extensive users of this technology. ICT transforms the concept of scientific development. As an engine of information it has been acting as an agent for globalizing science and technology. ICT in modern world is replacing the information utility behavior of scientists and technologists and also is reshapes the interpersonal behaviors of scientific communities by providing new potentials and opportunities to link with distant areas of scientific enterprises. Social process of scientific innovation of information technology has a great importance in education and research programmes in this fast moving world. As the current users of information technology scientists have been using Internet and related technologies in everyday transactions especially in scientific process. A number of interrelated factors have been playing for the formation of such technologies. Factors such as age, gender and education determine the Internet adoption and utilization behavior of information technology in Kerala. With respect to age the largest proportion of Internet user's belongs to the age group 35-45. It typically represent mid career individuals than members of other age groups who have access to internet. In this cybernetic world, internet as an information pool influences personal and

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professional relationships of individual. Personal relationships are vital part of human existence; society would not exist without these kind of relationships. Sociologists and anthropologists have studied personal relationships in its forms, means, magnitude and dimensions. Sociologists recognized that personal relationships between people are the building stones of society. (Tonnies 1887/1979; Simmel 1908/1922, 1917; Cooley, 1909/1962; Homans, 1951, 1961; Blau, 1964). These resources provide the easy flow of information, identity and recognition of people staying in different parts of the world. As a result of this information super highway there are a number of new interpersonal relationships formed among the scientific communities in Kerala. It can be categorized into two broad divisions: proximate ties and distant ties. This classification is purely based on the nature and magnitude of internet utilization capacities in scientific diffusion and practices. The proximate ties include those persons who are very close to the scientific groups. The proximate ties can be further classified into proximate family ties and distant family ties. Proximate family ties include those persons near to the scientific communities which means close kin groups and relatives. Distant family ties include those individuals living far away from the scientific groups. In modern simulated world internet is functioning as a catalyst for the easy formation of scientific as well as personal relationships among scientific communities in Kerala.

### Conclusion

Information and communication technology reshape almost all walks of human life in alarming pace. It has direct influence on the production and productivity of human life. Scientific product: No life has changed due to the extensive utilization of information and communication technology.

profound impact on knowledge production and its easy dissemination. It has also direct effect on the nature and magnitude of interpersonal linkages and social capital formation. The productivity of scientific knowledge is also changed as a result of the collaboration of scientific institutions and organizations. ICT has reduced the isolation of scientific institutions and provided a smooth way for the acquisition of knowledge from extreme polarities. Traditional forms of information utilization behaviour of scientific communities have also changed due to the interplay of this catalyzing mechanism. Information expanded across the boundaries of global economy. In interpersonal dimension, traditional types personal relationships are reformulated into contractual based transient relationships.

### Notes

ICT – Scientific knowledge useful for education research and entertainment

Elixir – Theoretical perspective suggest that information technology is an engine of opportunity

Affliction – Theoretical perspective suggests that ICT is mechanism global inequality and unevenness

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Abels, Eileen G., Peter Liebscher and Daniel  
1996. "Factors that influence the  
electronic Networks by Science and Engineering Society at St. all Institutions." *Journal of the American Society for Information Science* 17: 146-58.  
Adams, O. 2000. "Falling Through the Net: Defining the Digital Divide: A Report on the Telecommunications and Information Technology Gap in America." *Journal of Government. Information* 27: 245-6.  
Arunachalam, S. 1999. "Information and Knowledge in the Age of Electronic Communication: A Developing Country Perspective." *Journal of Information Science* 25: 465-76.  
Dedijer, S. 1963. "Underdeveloped Science in Underdeveloped Countries." *Minerva* 2: 61-81.  
De Roy, Olivier Coeur. 1997. "The African Challenge: Internet, Networking and Connectivity Activities in a Developing Environment." *Third World Quarterly* 18: 883-98.  
Engelhard, Rutger. 1999b. "Inter-networking for National Agricultural Systems in ACP Countries: Making the Internet Work." CTA (Technical Centre for Agricultural and Rural Cooperation ACP-EPW Research Foundation. 1994. "Social Indicators of Development for India-II: Inter-State Disparities." *Economic and Political Weekly* 29 (21 May): 1300-1308.  
Heller, Patrick. 1996. "Social Capital as Product of Class Mobilization and State Intervention: Industrial Workers in Kerala, India." *World Development* 24: 1055-71.  
Haythornthwaite, Caroline and Barry Wellman. 1998. "Work, Friendship, and Media Use for Information Exchange in a Networked Organization." *Journal of the American Society for Information Science* 49: 1101-1114.  
Hindman, D.B. 2000. "The Rural Urban digital Divide." *Journalism and Communication Quarterly* 27: