

Media Intervention in Science and Technology Communication among Rural Women

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Abstract

Recent developments in Science and Technology communication have led to the growth in the socio-economic status of the individuals in India. Still, the rural areas of the country continue to lag behind in technology development. In this state of affairs, it becomes essential to use the mass media effectively not only to communicate science and technology messages of relevance but also to motivate rural people especially rural women to participate in the process of developmental activities linked with science and technology. Many people in rural areas have no regular access to information through mass media due to poor socio-economic status and illiteracy; This study analyses the role and the effectiveness of media in creating awareness and knowledge of science and technology among rural women for development.

Keywords: Science, Technology, Women, Media, Rural, Development

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INTRODUCTION

The growth and development of science and technology communication is for the betterment and improvement of human life. However, with the rapid development of science and technology communication, it has become difficult for the public, especially to the rural people to keep pace with scientific advance and understand the issues. In rural areas, people lack basic knowledge about science and technology due to lack of education and lack

of access to information gateways.

It is understood that science is linked to technology through its applications (Abdulkalam 2011). Technology is linked to the growth of the economy and environment, which promotes development of the society. As technology advances, the need for scientific information also increases. Accordingly, India should soon witness a similar increase in science communication and popularisation. Indeed, the success of the information technology industry is proof of growing scientific awareness in India. India has undertaken a number of science communication initiatives and innovative approaches (Agarwal 2006).

Rural women are a major force in environmental and societal protection because they live and work in close contact with the ecosystem, possess an intimate knowledge of local biodiversity and can help safeguard natural resources for the future by practising sustainable agriculture, forestry and fisheries. Science and technology communication processes can give rural women strength to advocate changes in policies, attitudes and social behaviour or customs that negatively affect them. Science and technology communication can help rural women to exchange experiences, find common ground for decisions, take more control of their lives and add value to their role as active partners in rural and sustainable development. The purpose of this research is to understand and find the effectiveness and impact of science and technology communication through mass media on rural women.

OBJECTIVES

- To identify the level of knowledge and awareness of science and technology information among rural women
- To analyse the role and importance of science and technology communication in improving the life of rural women.
- To find the role of media in communicating science and technology information for empowerment of rural women.

LITERATURE REVIEW

Role of Media for Development

Vervoort et al (2010) in 'Stepping into futures: Exploring the potential of interactive media for participatory scenarios' state that media are now being increasingly viewed as the most effective and sought after means of communication. In fact, media now influences all walks of our life -personal, social and professional. Interactive media like Internet plays a vital role in the participatory and interactive communication globally.

The media are able to expose large number of people to messages and generate conversation among audiences and others who were not earlier exposed (Rogers 1998). Social learning and decision-making are not limited to considering media messages but also involve listening and exchanging opinions with a number of different sources. Hence, Bandura (1994) suggests that interventions cannot solely resort to the mass media. Although television, radio and other media are important in disseminating messages, social networks are responsible for the diffusion of new ideas. In a way, edutainment programmes activate social networks, peer communication, and enable the diffusion of information (Rogers et al 1999). Similarly, information given through the media is also important in raising awareness and knowledge. The current developments in information and communication technology sector in India and its implications are transforming the country into a knowledge economy (Tripathi 2006).

According to Kumar (2006) in 'Folk Media and Rural Development', the Indian society is a complex social system with different castes, classes, creeds and tribes. The high rate of illiteracy adds to the inadequacies of mass media to reach almost 80% of the people who reside in villages.

Communication and Rural Development

According to Adisa (2012) in 'Rural Development - Contemporary Issues and Practices', very few years were given for the achievement of the MDGs. It is almost certain that the goals are far from being achieved in most of the developing countries for which the MDGs were essentially set.

The struggle thus continues for rural development. As long as problems of poverty, disease, illiteracy, unemployment, poor infrastructure, environmental degradation and others persist (or increase) in rural communities, better and more result-oriented solutions to perennial and emerging problems of rural communities would be required. However, rural development, in spite of the variations in thresholds of rurality among nations, is not exclusively a Third World developing countries process, owing to its multi-dimensionality.

Biswas (2004) in his study of 'Sustainable rural development and poverty alleviation in Bangladesh' stated that the village business in Bangladesh are based on selling the solar electricity generated from photovoltaic (PV) technologies. The poor rural people do not have the knowledge about generating electricity. The training and knowledge on this information was given to rural people through interactive communication method. The knowledge of such information has helped them to improve their standard of living and this additional income has increased their economic level. Biswas states that the knowledge of scientific and technical information empowers the individuals to develop their life sustainably.

Thus, the potential role of academic and research institutions in sustainable initiatives inevitably could raise the issue of the role and importance of scientific knowledge in society. In democratic societies, it can be argued that science–society relationships should be based on establishing and institutionalizing mutual dialogues, making public concerns not only visible but also make the public as equal partner (Bodorkos and Pataki 2009).

Mchombu (1992) in his study 'Information needs for rural development: the case study of Malawi', remarks that the availability of improved agricultural and environmental conservation technologies might improve the living conditions of rural farmers. Studies over the past three decades have revealed that in many developing countries, most development programmes meet with little success because of ineffective communication strategies.

Science and Technology Communication for Women's Development

The role of science in improving the quality of life is now more significant than ever. According to the UNESCO, women's active inclusion and

participation in science is crucial to countries' efforts to alleviate poverty. Encouraging women to take part in science would allow any country to maximise its valuable human assets, empower its women and improve its economic prospects (UNESCO 2007).

According to Wieseman (2009), women's leadership within science education has, until now been largely invisible. Therefore, women's leadership within science education should be addressed. Moreover, it embraces relational ways of being a foundation for leadership and takes bold steps by exposing our innermost tensions, dilemmas and feelings about leadership, making them available to others. The power and promise of feminine approaches to transform traditional leadership cultures is also addressed.

METHODOLOGY

Survey research method was employed to identify and analyse the knowledge of S&T by selecting a sample of rural women. The multistage sampling method was used to select the sample from the total population. A multistage sample is one in which sampling is done sequentially across two or more hierarchical levels, such as first at the country level, second at the census track level, third at the block level, fourth at the household level (Lavrakas 2008). In this research, the multistage sampling technique was used to select the Nattarmangalam village from Vallam block in Gingee Taluk in Villupuram district of Tamil Nadu state. (Statistical Hand Book-2011)

Table 1 Population details of Nattarmangalam village

Gender	Population (2011)
Male	568
Female	492
Total	1060

Source: Census data 2011 of Nattarmangalam village

Survey is one of the quantitative methods of research to collect individual opinions and views from the sample by posing similar questions to every respondent. Survey method was adopted for the study to identify the status

of the media and the role of communication in creating awareness and educating them in various aspects of S&T among the rural women. This method helped to find out how S&T information is communicated to the women of the village by the mass media for the sustainable growth of their life. The survey was conducted to analyse and find the exposure of women to science and technology communication.

The available population of women during the survey in the village was 364. (Those who are below 18 years and above 45 years were not included as respondents). Education profile of women of this village shows more illiterates (52%), semi-illiterates (30%) and literates (18%). Sample predominantly consisting of illiterates were included using purposive sampling in the survey. Most of the women were involved in agriculture related works and a few worked as daily wagers. Adopting the census survey, out of total 492 women residing in the village, 364 women were selected as sample for the study.

Questionnaire Design

The questionnaire for the survey is a structured research tool used as an interview schedule as majority of the respondents are illiterates. It was designed so that the survey would enable the researcher to find the following details regarding the sample; standard of life, self-motivation, employment opportunities, educational development, socio-economic development, agricultural development, health development and the exposure of scientific and technical knowledge, availability and the usage of media. The first part of the questionnaire contained questions on demographic and economic information about the sample. The second part of the questionnaire consisted of questions related to knowledge of media and information and the third part of the questionnaire contained questions related to awareness of science and technology communication.

ANALYSIS AND INTERPRETATION

Survey method was adopted for the study to identify the role and the effectiveness of media in creating awareness and knowledge of science

and technology information among the rural women in the village. Survey is one of the quantitative methods of research to collect individual opinion and views from the sample. By understanding the reality of the science and technology communication as the potential source of life, this method helped to find out how women receive communication on scientific and technical information for their sustainable growth. Based on census sampling was done to select 364 rural women. (Children below the age of 18 years and women above 45 years were not included as respondents). The study helped to find the effectiveness of media among the rural women community by taking a small village in Tamil Nadu state of India. The collected survey data (standard error 0.01) from the women respondents were analysed and tabulated to derive the results.

Table 1 Communication Means of government messages

SI.No	Mode of Communication	f	%
1	Traditional Announcements	73	20
2	Media advertisements	175	48
3	Word of mouth	116	32

N= 364

Table 1 shows that most of the information on development schemes, policies and other useful information from the government are received through mass media (48%). 20% also receive information from village *panchayats* whereas 32% of the respondents said that information reaches the people by word of mouth, reiterating the intervention of interpersonal communication.

Table 2 Media Access in the Village

SI.No	Media Facilities	f	%
1	Cable television	280	77
2	DTH	15	4
3	Cinema Theatre	Nil	Nil
4	Newspapers and magazines	69	19
5	Internet	Nil	Nil

N= 364

As shown in Table 2, the village does not have facilities like theatres, but every house in the village has television set with 77% having cable connections, 4% of them have DTH and 19% of respondents have access to newspapers and magazines. Both college going girl students and working women who are few in number do not have access to the Internet. Internet is not a preferred means of communication even among educated women.

Table 3 Media Access to Rural Women

SI.No	Media Access	f	%
1	Television	218	60
2	Radio	73	20
3	Newspaper	62	17
4	Internet	11	3

N= 364

Table 3 reveals that television plays a major role in communication among rural women with 60% of the respondents admitting that television is like one of the members of the family and life without television becomes monotonous illustrating the obsession of women with visual medium like television. Despite radio being the cheapest medium for the rural communities, only 20% of the respondents access radio. 17% of the respondents have access to the newspapers and only five houses buy English newspapers and the rest prefer the regional dailies. 3% of the respondents who are college students have access to the Internet only in their educational institutions.

Table 4 Favourite Media of Entertainment and Communication among Rural Women

SI.No	Favourite media	f	%
1	Television	295	81
2	Radio	44	12
3	Newspaper	25	7
4	Internet	Nil	Nil

N= 364

Table 4 shows that 81% of the respondents prefer television as their favourite medium, 12% of the respondents listen to radio for music and news, 7% of the respondents prefer newspapers. None of the respondents prefers Internet.

Table 5 Favourite Programmes watched by Rural Women

S.No	Programme preference	f	%
1	Educational programmes	29	8
2	News	36	10
3	Entertainment	299	82

N= 364

Table 5 reveals that the rural women have shown less interest in watching educational programmes on the TV channels (8%) and only 10% of the respondents are interested to watch news to update themselves with current affairs. Most of the respondents (82%) have shown interest to watch only entertainment programmes in the regional TV channels.

Table 6 Information and communication Preferences of Rural Women in Mass Media

Sl. No.	Needed information and communication	f	%
1	Education	44	12
2	Agriculture	117	32
3	Science and technology	29	8
4	Current affairs	36	10
5	Advertisements	40	11
6	Health Information	51	14
7	Entrepreneurial training	47	13
	(N=364) Total		100

Table 6 reveals that most of the respondents (32%) prefer to watch agriculture related programmes and 12% of women prefer educational programmes. Only 8% prefer to watch science and technology related information whereas 10% would like to watch news and current affairs. Only 11% of the sample is interested in watching advertisements to know about the products information. In addition, 14% of the sample is interested

in watching health related information in the media. Moreover, 13% of the sample is interested in watching entrepreneurial training programmes for their personal development.

Table 7 Scientific and Technical Information Received from Mass Media

SI. No.	Scientific and technical information received from media	f	%
1	Yes	95	26
2	No	269	74

Table 7 reiterates the criticism that media does not give importance to science and technology. Vast majority (74%) have vouched for the fact they don't get science and technology information from media. Only 26% of the respondents said that they have received science and technology information from the media.

Table 8 Usefulness of Science and Technology Information in Shaping Life of Rural Women

SI.No	Usefulness of Science and technology information	f	%
1	Yes	91	25
2	No	273	75

Table 8 shows that 25% of the respondents feel that science and technology information is useful to improve their life as it increases knowledge and creates awareness. However, 75% of rural respondents say that science and technology information is not useful for their development.

Table 9 Adequacy of Media Information on Science and Technology

SI.No.	Received sufficient communication on science and technology	f	%
1	Adequate	44	12
2	Not Adequate	320	88

Table 9 makes it clear that only 12% of the respondents have received adequate information from media that has enriched their knowledge and created awareness. However, a overwhelming women respondents (88%) feel that media information on science and technology is not at all adequate.

Table 10 Barriers of Communication

SI. No	Barriers of communication	f	%
1	Language	186	51
2	Technical difficulties	18	05
3	Message	160	44

Table 10 shows that nearly half the respondents (51%) find language as a barrier while accessing national programmes. 44% of the respondents could not understand certain messages due to poor content design and format of the messages. Only 5% of the respondents face technical difficulties like poor cable or satellite connection.

Table 11 Media Preference of Respondents to Receive S & T Information

S.No	Media preference	f	%
1	Television	306	84
2	Radio	44	12
3	Newspaper	14	4
4	Internet	Nil	Nil

Table 11 shows that the television plays a major role in disseminating science and technology information since it is an audio and visual means of communication. Obviously, 84% of the respondents have shown interest in television to watch science and technology information if it is communicated in their regional television channels. Only 12% of the respondents prefer radio whereas 4% of the respondents prefer newspapers. Internet was not preferred even among the educated women to receive science and technology communication for development denoting lack of access and low level of awareness.

From the interpretation of survey, it is understood that the rural women have poor access to mass media. Nevertheless, television plays a major role in communication since it is a common medium for illiterates. The study shows that rural women have low level of knowledge and awareness on science and technology. Women show interest in learning about science and technology information related to their daily life through television, which should be in the infotainment (Information+Entertainment) and edutainment (Education+Entertainment) format of programmes with easily understandable text in regional language.

CONCLUSION

Communication of science and technology information is a powerful force for fostering learning, positive change and empowerment in the process of rural development. Effective communication has the potential to enhance people's quality of life, protect fragile environments and create a knowledge-based society that is more responsive to change and development issues. Schweiger (2000) states that people's perception of media credibility will affect their choices and preferences of a certain medium. Thus for rural women science and technology communication through television creates a better impact than the newspapers and radio. Effective science and technology communication through mass media can lead to the empowerment of women, enabling them to take control of their lives and participate in the process of rural development.

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