

## **The status of information and communication technology in a coastal village: A case study**

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### **ABSTRACT**

Kovalam is one of the coastal villages in Southern Tamil Nadu, India, and the principal livelihood of the villagers is fishing. The village is equipped with a VKC (Village Knowledge Center), initiated by the local Parish Council, to serve the people with the e-governance, e-agriculture, e-education, e-health and other services at free of cost. This paper is aimed at studying the effects of the technological adoption through the intrinsic case study method. Besides, interviews and discussions were also included to find out the realistic situation. The users of the Kiosk, the boundary partners and the knowledge workers were contacted to collect data. The study has revealed the influence and the role of kiosk in the lives of fishing community.

**Keywords:** *ICT; ICT and Rural Development; ICT and Coastal Village; Information Kiosks; Consequences of ICTs; Village Knowledge Center; and Kiosks and Development.*

### **ICT AND DEVELOPMENT**

The developing countries have well understood the benefit of implementing the rural ICT initiatives as the projects have reflected their impact on the development of the areas in which they prevailed. The developed countries have been flourishing with the adoption of new information and communication technologies on the one hand, and the developing world has been facing the problem of the increasing digital divide on the other. Those nations that adhered to the outcome and suggestions from technological studies witnessed the economic growth, while the less resourced were deprived of most of their basic rights as they could not survive the new competitive trend.

Rural ICTs were viewed as the solution to all the problems of development. In many of the developing and under developed countries, the Government and the Non-Governmental organizations have risked much taking the technology to the poor. It is evidently proved that such initiatives have had greater impact on the target group. Such installations have generally been termed as Telecenters, Knowledge Centers, Community Information Centers, Information Centers and Information Kiosks. Information Kiosks/Knowledge Centers are becoming the window of the world of knowledge for villages and to reap the benefits of e-governance, tele-education, tele-medicine, e-commerce and e-judiciary initiatives need to be strengthened on a war footing.

ICTs give a new perspective on the social and economic profile of the rural people. The information access and the other digital services improve the standard of living of the rural folks of both the agricultural and coastal villages. In Tamil Nadu, in the coastal belts and in the remotest agricultural villages, many research agencies, educational institutions, Non-Governmental Organizations and societies have initiated the setting up of rural kiosks for the benefit of the local people in collaboration with the foreign funding agencies.

The rural people for whom agriculture, fishery and animal tending are the main sources of living, have become technology-dependent. With the rise in the impact of globalization, global warming, the decrease in underwater resources and the failure in seasonal rainfalls no longer make the people depend on agriculture alone. In the rural ICT initiatives, the people have free access to the Internet and get information of all sorts. Moreover, unlike home, they can have personal assistance from the so-called knowledge worker in accessing information or to know about anything new. Apart from information accessing, the rural people learn to use the computer at the centers. These efforts have resulted in alternative job search for the rural people apart from their traditional work and their attitude towards life.

It is doubtless that the ICTs have a profound effect on the rural people to empower themselves in all ways possible. However, it has become a serious concern whether the ICT could do something really for the welfare of the people who do not have any basic necessities like food, shelter and clothing. There are social, economic and psychological factors which hinder development. The project initiators always try to show encouraging results to the outer world. There is a serious question whether the kiosks do really have any impact on the people. Many of the initiatives could not achieve the agenda at some levels. Some fell off in the preparatory phase, and some others, after a short period, could not sustain their impact for a longer time.

Many scholars have reflected many problems of taking ICT to the rural parts in many researches. Everett Rogers (2003) states that,

“Invention and diffusion are but means to an ultimate end: the consequences that result from adoption of an innovation. Change agents generally give little attention to consequences. They often assume that adoption of a given innovation will produce mainly beneficial results for adopters. This expression is one of the pro-innovation biases. Change agents should recognize their responsibility for the consequences of innovations that they introduce. Ideally, they should be able to predict the advantages and disadvantages of an innovation before introducing it to their clients. This is seldom done and often it cannot be done”.

So, it is imperative that the consequences (effects or influences or impacts) of these initiatives be studied from the audiences' perspective.

## **METHODOLOGY**

The present study is aimed at analysing the influence of the rural kiosks from the audiences' perspective. Kovalam, a coastal village 2 kilometers from the Cape Comorin in India, was chosen for the study. Here, a Village Knowledge Center was established by the local parish council in collaboration with a research agency. The researchers have adopted the intrinsic case study methodology. Everett Rogers (2003) states that,

“the usual survey research methods are less appropriate for the investigation of innovation consequences than for studying innovativeness. Extended observation over time or an in-depth case study is usually utilized to study consequences. Diffusion researchers have relied almost entirely upon survey methods of data gathering, ignoring the study of consequences, as the usual one-shot survey methods are inappropriate for investigating the effects of innovations. An innovation's consequences cannot be understood simply by adding an additional question or two to a survey instrument, another hundred respondents to a sample population, or another few days of data gathering in the field”.

As the generalization of the findings seems critical while adopting the case study methodology, field observation, in-depth interview and discussion techniques were employed along with the case study analysis. The data were reinforced with secondary sources too. The kiosk has a user

register and it contains details of the kind of services utilized by users every day, which helped in identifying their preferences for services and the nature of use. The Knowledge worker, the parish leaders, the village leaders, the fishermen, the villagers and also the students were interviewed. Besides, a focus group discussion was conducted with the fisherwomen of the village.

## **PROFILE OF THE VILLAGE**

Kovalam is situated next to Kanyakumari and is one of the tsunami-affected villages. The villagers engage themselves in undertaking all kinds of occupations that help generate revenue through tourism. According to the village census of 2006, there are 1125 families with a total population of 4492. Of them, 2292 are men and 2200, women. There are four nursery schools, which are run by the Government and another aided middle school, administered by the local parish council. A survey undertaken by the church during 2008–2009 reveals that there are 250 students in nursery school, 156 in middle school, 96 in high school, and 78 in higher secondary school. Besides, 54 students study diploma, 46 undergraduate, 22 study post graduate and 26 study professional courses.

In the whole village, only 252 have attained computer literacy. Surprisingly, only 36 people seek jobs and all the others, including housewives, are involved in some occupation to increase the revenue of the family. Except for one, all families are Roman Catholics and are natives of the place. The local parish, with a view to developing the society, it has set up six teams to work for its welfare. They are, the Public Works department, Fisheries, Education, Human Resource Development, Health and Hygiene and Religious welfare. Over the last decade, the village as a whole had decided to make it mandatory for every child to study till X Standard. Majority of the students, barring a few exceptional cases, continue higher education which has helped the literacy level in the present generation. Apart from the Village knowledge Center, which is run by the parish council, the village has three more information centers/kiosks initiated by other societies and NGOs. The village has no middle-men to sell any of its products.

## **THE VILLAGE KNOWLEDGE CENTER**

The Village Knowledge Center (VKC) was established on 30<sup>th</sup> of July, 2005 with the objective “to develop Kovalam village as an integrated and self sufficient one by helping people attain the basic and higher education, employability skills, social and political awareness, basic living facilities by continual improvement and achieving parishioner’s satisfaction for a holistic living”. The VKC works in various levels.

Fishing being the primary source of income of the people, the VKC benefits the fishermen in many ways. The fishermen can get the information on the weather from the VKC and can decide where and when to go for fishing. Moreover, the fishermen are provided with mobile phones with GPS service in shifts. With 3 people working in each shift, people can obtain information about Government services, list of places where the fishes will be available in huge quantities on that particular day, height of the waves, weather forecast, market price of the fish, important news and emergency telephone numbers. Equipped with mobile phone, the fishermen could call one another to inform about the places of availability of abundant resources. After knowing the market price, the fishermen decide whether to stay on for fishing or to come to land to sell when the price is high. If the fishermen got into some trouble in the sea, they could call their fellowmen for rescue. The VKC helps the women at large to learn computer skills and to empower themselves. They are given training to do some household businesses and to market them. Children, in large numbers, especially during the holidays, undergo computer-mediated education

for learning English, Mathematics and Science. The VKC gives the information on governance, education, health and so on. A newspaper called "Namma Ooru Seithi" is circulated among the village people which gives information of all sorts, besides some articles contributed by the villagers.

## **FINDINGS FROM THE IN DEPTH INTERVIEW**

The knowledge worker felt that apart from the men of the community, women were the prominent beneficiaries of the VKC. This result reflected the study results of Pichandy (1994), Thomas (2003), Radha (2003) and Srihari (2006) that the rural women dominate men in accessing the new media technologies. It was found that even the women servants of the village used ICT for education. Out of fear, they did not take the tests, but the learning process had an impact on their attitudes towards public speaking, decision-making and participation. Women's participation in the educational services of ICT confirmed the result of Srihari (2006) that women in the rural areas, like men, are also keen on utilizing ICT for education. Though most of the women have got to see the computer for the first time in their lives at the VKC, each one of them knew how to switch on and off the computer. The study of Srihari (2006) showed that the e-governance services give a tremendous scope for social action towards positive development.

The parish priest observed that when the VKC was initiated, the villagers were insistent upon accessing the computer and become adaptable for the information age. The villagers came forward voluntarily and the VKC has helped visibly in their betterment. This result concurred with the findings of NTIA (2000) survey which reflected that both traditional and new social settings seek education as a key factor for creating information society with equitable knowledge society.

Fishermen received authentic information on how to mend the engine in the middle of the sea, if trouble occurred. Fishermen expect to own mobile telephones if they were provided at nominal rates. Mountains served as the signposts for the fishermen to reach the shore. But the fishermen, who owned the special mobiles, reach the shore with the GPS facility securely. This result has concurred with the study supported by the European Foundation for the Improvement of Living and Working Conditions (2003) which reflected that ICT has played a significant role in the modernization of the fishing industry, both at sea and shore.

College students were not accessible to all sorts of information needed at all times, especially the girls who could not visit the browsing centers to seek information. But after the Kiosk was established, they overcame this problem. The result has reflected the findings of Ian Pringle and M.J.R. David (2002) and Srihari (2006) that the younger generations are positive towards the services of ICT. School students have found it easy to learn the difficult topics with the technology-mediated learning as they are assisted by the user-friendly technology. They showed good progress in their studies. This finding confirmed a study supported by Apple Computer Inc., which reflected that the students who have technology-mediated learning continued to perform well on standardized tests but were also developing a variety of competencies not usually measured. Students explored and represented information dynamically and in many forms; became socially aware and more confident; communicated effectively about complex processes; became independent learners and self starters; knew their areas of expertise and shared that expertise spontaneously.

## **FINDINGS FROM THE DISCUSSION WITH THE FISHERMEN**

The focus group discussion was conducted with the fishermen, who obtained the mobile phones. The predominant findings are listed as follows:

1. **Information Sharing:** The fishermen, who find more fishes at one place, inform others over phone about it. Even those who do not have mobile telephones simply follow them with or without the information, assuming to get a good catch.
2. **Lack of Sufficient Technology:** At present, only 3 fishermen were provided with mobile phones and it is found to be insufficient. It is learnt that a minimum of 25 mobiles at nominal prices are to be distributed in one village, so that the whole village can benefit from it at all times.
3. **Assessing the Market Price:** The fishermen, while at sea, can know the market status of any kind of fish using the mobiles. They are able to judge the status of the trade and can decide whether to return for selling or to remain at sea to continue fishing.
4. **Psychological barrier:** The fishermen hesitate to learn from the Knowledge worker, as they feel skeptical about their knowledge and opt for self-learning software to gather the skills.

Mr. Alphonse is one of the fishermen who obtained the mobile phone in the first batch, who shared his personal experience with the researchers. On one of his days at work, he set to sea after everyone had gone off-shore. He spotted a particular variety of fish and informed the other two mobile holders. At the end of the day, the village benefitted from a profit of a few lakhs of rupees.

These findings have reflected the study of European Foundation for the Improvement of Living and Working Conditions (2003) which found that the ICTs help the fishing industry in supporting fishing efforts; increasing supply chain efficiency; increasing marketing activities and responding to customer/market demands; and enabling collaboration and knowledge management.

## **FINDINGS FROM THE SECONDARY DATA**

With the data available from the user register, the following inferences were made. The details of the month of January were not available.

**Table 1: Users Data**

<b>Name of the month</b>	<b>Frequency</b>	<b>Percent (%)</b>
February	42	7.8
March	38	7.1
April	54	10.1
May	36	6.7
June	53	9.9
July	58	10.8
August	48	9.0
September	68	12.7
October	67	12.5
November	28	5.2
December	44	8.2
<b>Total</b>	<b>536</b>	<b>100.0</b>

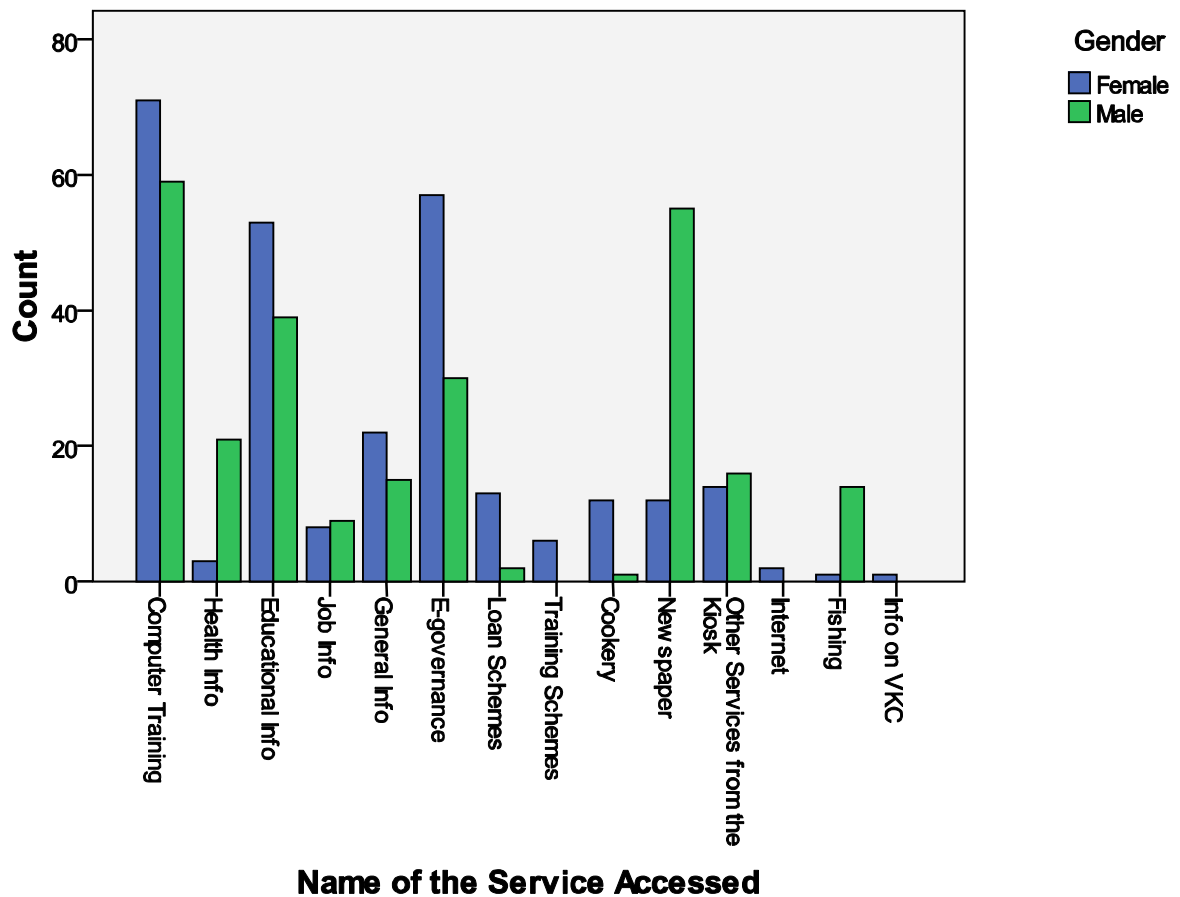
<b>Average</b>	<b>48.7</b>	
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Table 1 clearly shows that in the year 2008, there were 536 users. The month of November showed the lowest usage (5.2%) and the month of September (12.7%) showed the highest usage in the whole year. Throughout the year, on an average, the kiosk had around 48 users.

**Table 2: Gender Distribution**

<b>Gender</b>	<b>Frequenc y</b>	<b>Percent (%)</b>
<b>Female</b>	275	51.3
<b>Male</b>	261	48.7
<b>Total</b>	<b>536</b>	<b>100.0</b>

Table 2 shows the marginal difference seen between the male (48.7%) and the female (51.3%) users, wherein the female users had an edge over the male.



**Figure 1:** Gender vs. Services

Figure 1 shows the distribution of men and women in using the services. Women dominated men in obtaining computer training, accessing the educational information, e-governance, general information about the world issues and current affairs, loan schemes, trainings, cookery and using the internet. Men dominated in getting health information, job information, reading the newspaper, fishing and other services like engine mending and mechanical training.

## CONCLUSION

The study clearly revealed that the people of Kovalam have been accessing the services of VKC and have not rejected the new technology. Being a coastal village and fishing, the main source of living, the mobile phone with GPS services is much useful for the fishermen. It is evident from the

personal experience of Alphonse that the technology offered not only income, but also security and protection to their lives.

Comparatively, education, e-governance and job opportunities are well received by the fisher community. School students used the VKC to understand the basic concept of Mathematics, Science and English with the computer-mediated education; otherwise they would complete their education without much understanding and knowledge. College students with the computer literacy obtained from the VKC, could stand up against a competitive world.

Though the women are apprehensive about the exams, they dominated men in using most of the services. Even those who go to work as servants have come forward for computer training. The fishermen hesitate to learn from the knowledge worker, due to their slow learning attitude. It shows their interest towards the technology. After tsunami, the fishermen have realized the insecurity of their lives at sea and discouraged the next generation to from taking to fishing. So education has become mandatory and they realized the significance of ICT in their lives. The parish council, apart from spiritual work, is also focused on development of the society.

The study revealed that the VKC is one of the variables, which is responsible for the societal development and creation of awareness among villagers. The villagers are active, receptive and ready to change themselves for the holistic development of themselves and the village. So when the ICTs are adopted into their lives, they use the technology to foster their development much easier than ever before, which reflects the success of the technology initiative.

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