

EMPOWERING FARMERS: ASSESSING AWARENESS AND UTILIZATION OF KISAN CALL CENTER SERVICES IN KADEGAON TALUKA OF MAHARASHTRA

Ms. Sangeeta Patil,
Assistant Professor,
Bharati Vidyapeeth (Deemed to be University)
Institute of Management and Entrepreneurship Development, Pune.
sangeeta.g.patil@bharativedyapeeth.edu

Dr. Hemchandra Padalikar
Associate Professor,
Bharati Vidyapeeth (Deemed to be University)
Institute of Management and Entrepreneurship Development, Pune.
hemchandra.padalikar@bharativedyapeeth.edu

Dr. Satyawan Hembade
Associate Professor,
Bharati Vidyapeeth (Deemed to be University)
Institute of Management and Entrepreneurship Development, Pune.
Satyawan.hembade@bharativedyapeeth.edu

ABSTRACT

Indian agriculture plays a crucial role in the country's economy and sustains the livelihoods of millions of people. It has a rich history, diverse crop production, and a significant impact on food security. Farmers in India are a vital component of the country's agricultural sector and form a significant part of its population. However, their access to timely and reliable information for effective farm management remains a challenge. Information and communication technology (ICT) has the potential to revolutionize Indian agriculture by empowering farmers with knowledge, market access, and tools for efficient farm management. It promotes sustainability, reduces information asymmetry, and enhances the income and livelihoods of farmers. KCC is a ICT initiative which serves as a helpline for farmers, providing them with timely agricultural information, expert advice, and solutions to their farming queries. So, this study aims to assess the scope of activities involved in farm management and evaluate the awareness, utilization, and satisfaction levels of farmers in Kadegaon taluka regarding Kisan Call Center (KCC) services. Furthermore, the study explores potential methods to increase the utilization of KCC services. The results of this research will come up with the present state of awareness and utilization of KCC services among farmers and offer recommendations to enhance the effectiveness and outreach of KCC initiatives.

Keywords: Kisan Call Center, Farmer, Awareness, Farm Management, ICT

Introduction

Indian agriculture is facing enormous challenges. As compared to past rapid growth, this sector is required to contribute GDP and to fulfill the demands of huge population. It is an immense need of strong agricultural development for growth of Indian economy. It is said that two thirds of the total workforce directly or indirectly rely on agriculture. Large and growing populations in India place pressure on agricultural resources, necessitating sustainable and innovative approaches to ensure food security, enhance productivity, and uplift the livelihoods of farmers. Balancing the needs of a growing population with the challenges faced by the agricultural sector remains a critical priority for India. Uncertainty is a significant challenge faced by Indian agriculture. There are several factors that contribute to uncertainty in the agricultural sector, these are whether uncertainty, price volatility, pest and disease outbreaks and market access and infrastructure.

Information and communication technology (ICT) has played an important role in India's development in recent decades. ICT has impacted various sectors of the Indian economy, including agriculture, education, healthcare, finance, and governance, among others. ICT has been instrumental in connecting people, promoting digital inclusion, and fostering socio-economic growth. The widespread availability of mobile networks, internet access, and digital infrastructure has bridged the digital divide, enabling individuals in remote areas to access information, services, and opportunities. Information and Communication Technology (ICT) has emerged as a game-changer in Indian agriculture, revolutionizing the way farmers operate and contributing to the overall development of the sector. ICT has played a crucial role in providing farmers with access to vital information and knowledge resources. Through online platforms, mobile applications, and agricultural websites, farmers can

obtain real-time data on weather patterns, market prices, crop cultivation techniques, and government schemes. This access to information empowers farmers to make informed decisions, adopt best practices, and optimize their agricultural activities.

Kisan Call Center (KCC) is a toll-free telephone service launched by the Government of India to provide agricultural information and advisory services to farmers across the country. The service is available in Hindi and regional languages and is accessible 24/7. The KCC service is operated by the Indian Council of Agricultural Research (ICAR) in collaboration with various state agricultural universities, Krishi Vigyan Kendras (KVKs), and private partners. The Kisan Call Center has played a significant role in providing agricultural information and advisory services to farmers across India, enabling them to make informed decisions and improve their productivity and income. Farmers can dial the toll-free number 1800-180-1551 from any phone in India to access the KCC service. The call is routed to the KCC service center, where it is received by a trained operator. The operator collects basic information from the farmer, such as name, location, and type of query. The query is then routed to a subject matter expert (SME) in the relevant field, such as agronomy, horticulture, animal husbandry, etc. The SME provides the farmer with accurate and timely information and advisory services on the query raised. The operator then summarizes the information provided by the SME and provides it to the farmer in the language of their preference. If the query requires further follow-up or detailed information, the operator forwards the query to the relevant KVK or agricultural university for further assistance. The KCC service has a feedback mechanism in place, allowing farmers to provide feedback on the quality of the service and the information provided. The KCC service is available 24/7 and in Hindi and regional languages, making it easier for farmers to access information and advisory services from anywhere in the country.

Kadegaon taluka is situated in the southern part of the Sangli district, bordered by the Krishna River to the south and the Tasgaon and Walwa talukas to the north. The taluka spans an area of approximately 366 square kilometers. The taluka has a diverse population comprising various communities and castes. The primary language spoken in Kadegaon is Marathi. Agriculture is the primary occupation of the majority of the population. Kadegaon taluka is primarily an agrarian region with a significant focus on crop cultivation. The predominant crops grown in the area include sugarcane, grapes, pomegranate, jowar (sorghum), wheat, and vegetables. Farmers in the taluka face challenges related to water scarcity, irrigation facilities, soil degradation, and market linkages. Farmers in Kadegaon taluka can receive assistance and support through various initiatives and programs. Collaboration among government agencies, agricultural departments, NGOs, and other stakeholders is crucial to support the farmers in Kadegaon taluka. KCC is a ICT initiative which serves as a helpline for farmers, providing them with timely agricultural information, expert advice, and solutions to their farming queries. Hence, this study is undertaken to investigate the awareness of farmers in Kadegaon taluka about kisan call center services and to explore various methods to increase use of KCC.

Literature Review

Indian Agriculture

Indian agriculture is a vital sector of the Indian economy, providing livelihoods to more than half of the country's population. (Desarda, Patil, 2017) The agriculture sector contributes around 17% of India's GDP and remains a significant contributor to the country's export earnings. India is one of the largest producers of food grains in the world, with major crops including rice, wheat, maize, pulses, and oilseeds. The country is also a major producer of fruits and vegetables, with horticulture becoming an increasingly important sub-sector of Indian agriculture. The Indian government has launched various initiatives to support and promote the agriculture sector, including the Pradhan Mantri FasalBima Yojana (Crop Insurance Scheme), Pradhan Mantri Krishi Sinchai Yojana (Irrigation Scheme), and e-NAM (Electronic National Agriculture Market). These initiatives aim to improve farmers' access to credit, technology, and market information, as well as enhance their productivity and income.

ICT in Agriculture

ICT means Information and communication technology. It is important to boost progress of any section by providing required information on time. ICT comprises various Medias like radio, TV, Website, Mobile phone etc. to reach to remote area. The role of Information and Communication Technology (ICT) in Indian agriculture has been significant in improving the productivity and income of farmers. The introduction of ICT in Indian agriculture has helped in modernizing the sector and in improving the livelihoods of farmers. It has also enabled the sector to become more efficient, competitive, and sustainable. (Marichamy, 2013) The effective use of modern information and communication technologies in rural areas can greatly benefit farmers by providing them with access to relevant information and improving their agricultural practices. However, to fully realize the potential of these technologies, it is important to address the challenges of relevance, digital literacy, and accessibility. (Savithamma, 2011) Information and Communication Technology (ICT) can help farmers and

other users in many ways to increase productivity and cost efficiency. (Glendenning & Ficarelli, 2012) With the help of ICT tools, farmers can access important information related to weather conditions, market prices, agricultural techniques, crop disease management, and other relevant information that can help them to make informed decisions. This information can help farmers to improve crop yields, reduce production costs, and increase their incomes. Moreover, ICT can also help farmers to connect with markets, buyers, and customers directly, thereby eliminating intermediaries and getting a better price for their produce. In addition, ICT can help in tracking and monitoring crop growth, soil moisture, and other important parameters, which can help farmers to optimize the use of inputs such as fertilizers and irrigation water, leading to cost savings and improved efficiency. ICT can also enable farmers to participate in e-commerce platforms and online marketplaces, where they can sell their produce at competitive prices. (Kataria, 2014) The use of ICT in agriculture has the potential to revolutionize the sector by increasing productivity, improving efficiency, and enhancing the livelihoods of farmers. However, it requires concerted efforts and collaboration from all stakeholders to ensure that ICT tools and services are accessible, effective, and sustainable in the long run. (Bhalekar, Ingle, & Pathak, 2015)

Farmers have also been able to obtain timely information on weather conditions, market prices and agricultural techniques with the use of cell phones. This information has helped farmers make better decisions regarding crop selection, timing of planting, and marketing of their produce. Furthermore, mobile phones have facilitated the delivery of extension services, such as crop advisories and pest management advice, to remote and inaccessible areas. This has helped bridge the knowledge gap between farmers and agricultural experts, leading to improved crop yields and higher incomes for farmers. (Chhachhar, Hassan, 2013) As the cost of smartphones continues to decrease and their capabilities expand, there is great potential for the development of more innovative and effective agricultural applications that can benefit farmers. (Pongnumkul, Chaovalit, & Surasvadi, 2015) In order to ensure that farmers have the appropriate skills and knowledge on how to operate a cellular telephone effectively for farming purposes, it is necessary to train and educate them. Awareness campaigns should also be conducted to inform farmers about the different sources of agricultural information available on mobile phones. Additionally, efforts should be made to ensure that the information provided through mobile phones is relevant, timely, and trustworthy. (Mittal, Tripathi, 2009) Policymakers can also play a role in promoting the use of ICT-enabled solutions in agriculture by investing in the development of mobile-based agricultural services and creating an enabling environment for their widespread adoption. (Khan, Qijie, Ali, Babar, & Shah, 2019)

Two way information exchanges between farmers and other stakeholders on the value chain of agriculture are becoming a reality in mobile technology, which is increasingly open, participatory and driven by demand. However, there is still a gap between farmers, buyers, and extension services. Many farmers lack the necessary ICT skills and training to take advantage of these technologies effectively. In addition, rural areas often lack the necessary infrastructure and government services to support the use of ICT in agriculture. (Jayade, Khot, 2014) To address these challenges, the continued use and expansion of ICT in agriculture has the potential to bring significant benefits to farmers in rural Maharashtra and other developing countries. However, addressing these challenges and ensuring that farmers are equipped with the skills and support they need to be effective in using such technologies for their own benefit is important. (Shaik, Jhamtani, & Rao, 2004)

Kisan Call Center a telephone-based ICT initiative in agriculture at farmers doorstep

(Koshy, Kumar, 2016) mentioned that KCC service has been useful to farmers, and they perceive it positively. The study also highlights the need to increase digital literacy and awareness among farmers, maintain the quality of the service, and promote it effectively to increase utilization among farmers. These measures can help to improve the effectiveness of the KCC service and benefit farmers in India. Kisan Call Centre service is a valuable resource for farmers in India, and it has the potential to improve their agricultural practices and livelihoods. However, its impact can only be realized if more farmers are made aware of the service and its benefits. (Kavitha, Anandaraja, 2019) Therefore, there is a need for concerted efforts from various stakeholders to promote and popularize the service through different channels of communication. (Koshy, Husain, & Kumar, 2015) Farmers have faced several challenges while using the Kisan Call Centre service, including poor network connectivity in rural areas, lack of awareness about the service, and outdated information provided by the KCC agency. These challenges highlight the need for continuous improvement and updating of the KCC service to address the needs of farmers.

Objectives of this Study

- To study the scope of activities involved in farm management
- To study the awareness of farmers in Kadegaon taluka about kisan call center services
- To study the use of services and its frequency of kisan call center
- To study the level of satisfaction about kisan call center services of farmers in Kadegaon taluka.
- To explore methods to increase use of KCC

Research Methodology

This survey based research conducted to assess the awareness and utilization of Kisan Call Center services among farmers in Kadegaon Taluka, Maharashtra. The population of Kadegaon Taluka is spread over in 56 villages. The range of population 3000 to 15,000 amongst these villages. The target population was farmers from three villages i.e. Devrashtre (Highest population), Hingangaon (Budruk) (Mid Population) and Karandewadi (Lowest population) in Kadegaon Taluka. The sample is taken as 200 from Devrashtre, 100 from Hingangaon (Budruk) and 15 from Karandewadi village as per population. Primary data has been collected by administering the questionnaires to farmers and also interaction with them. Further it has been analyzed in the light of objectives of the study and hypotheses. Findings presented with reference to analysis. Suggestions made wherever relevant to improve the effectiveness of Kisan call center services and thereby enhancing the management of farms by the farmers. Secondary data has been reviewed from the research papers, books, government reports and websites.

Data Analysis

The collected data was subjected to rigorous analysis to assess the awareness and utilization of Kisan Call Center services among farmers in Kadegaon Taluka, Maharashtra. Initially, data cleaning procedures were conducted to eliminate any errors or missing values. Descriptive analysis was then performed to calculate awareness and utilization rates, providing an overview of the respondents' knowledge and usage of the services. The following paragraph outlines the key components of the data analysis in the research paper:

1. This study sheds light on the awareness levels among farmers regarding the Kisan Call Center (KCC) service in Kadegaon Taluka. The research findings indicate that a substantial proportion of the surveyed farmers (94%) had limited knowledge about the KCC service. This lack of awareness can be attributed to the limited promotion and insufficient dissemination of information about the functioning of KCCs among farmers in the region.
2. Significantly, the study found that farmers who had knowledge about the KCC actively utilized its services. (Savithamma, 2011) In contrast, only 10 percent of farmers in Karnataka state were aware of the KCC, and the remaining 90 percent were unaware even of the KCC helpline number. These findings emphasize the need for focused and widespread awareness campaigns among farmers to inform them about the existence and benefits of the KCC and its services.
3. Among the farmers who were utilizing the services of the KCC, it was found that they obtained information about the KCC through various sources. A small percentage (5.88%) of farmers learned about the KCC from local agricultural extension workers, while a larger proportion obtained information through newspapers (17.64%) and radio (17.64%). The majority of farmers (58.82%) came to know about the KCC through recommendations and discussions with friends.

Variables	Source of Information	
	No.	%
Agricultural Extension Worker	1	5.88
Friend	10	58.82
Newspaper	3	17.64
Radio	3	17.64

Table 1 Source of information about Kisan Call Centre

4. The study found that most farmers who utilized the services of the KCC did so on 2-3 occasions. This indicates that farmers are not regular or frequent users of the KCC. This finding underscores the importance of enhancing and improving the services provided by the KCC to encourage more consistent and frequent utilization by farmers. Table 2 clearly indicates that a significant majority of farmers (94%) contacted the Kisan Call Center (KCC) seeking information related to plant diseases. This is not surprising, as plant diseases are a critical aspect of farming where farmers often require guidance and advice. Additionally, a smaller percentage of farmers (6%) contacted the KCC regarding seed-related queries, which highlights the importance of quality seeds for cultivation. This finding reinforces the notion that farmers prioritize seeking advice and assistance in dealing with plant diseases, while also recognizing the significance of obtaining reliable and suitable seeds for their agricultural activities. Contrary to the previous statement, farmers who reached out to the Kisan Call Center (KCC) expressed their interest in obtaining accurate and pertinent information related to market trends and weather forecasting. Additionally, they showed a keen interest in acquiring knowledge about allied activities in farming. These findings highlight the farmers' desire to access reliable information that can assist them in making informed decisions about market opportunities, anticipating weather conditions, and exploring supplementary farming practices.

Variables	Usage pattern of Kisan Call Centre by the farmers		
	Category	Number	Percentage
No. of Times Called (Frequency)	1	2	12%
	2-3	15	88%
Purpose of call	Plant diseases	16	94%
	Seeds	1	6%

Table 2 Usage pattern of Kisan Call Centre by the Farmers

- In terms of farmer satisfaction with the services provided by the Kisan Call Centre (KCC), the majority of farmers expressed satisfaction. A large proportion of farmers (88%) reported being satisfied with the advice and assistance received from the call center agents. They stated that they followed the recommendations and observed positive outcomes in their farms as a result. However, a small percentage of callers (12%) expressed dissatisfaction with the service. These findings indicate that the KCC has generally been successful in meeting the needs and expectations of farmers, as the majority of them reported positive experiences and outcomes. The high satisfaction rate suggests that the advice and guidance provided by the call center agents have been beneficial to farmers in addressing their agricultural challenges and achieving favorable results. Despite the small number of dissatisfied farmers, there is still room for improvement to address their concerns and ensure a more comprehensive and effective service delivery.

Variables	Farmers' satisfaction by making use of the Kisancall center		
	Category	Number	Percentage
Level of Satisfaction	Satisfied	15	88%
	Dissatisfied	2	12%

Table 3 Farmers' satisfaction by making use of the Kisan call center

Practical Recommendations

To increase the utilization of Kisan Call Center (KCC) services, here are some potential strategies and approaches:

- 1. Conduct training programs:**

Organize training programs for farmers and educate them about the services provided by the Kisan Call Center. This will help them understand the benefits of the service and how to use it.

- 2. Display posters and banners:**

Display posters and banners in public places such as markets and bus stations to raise awareness about the Kisan Call Center. This will help farmers know about the service and how to access it.

- 3. Use of social media:**

Use of social media platforms such as Facebook, Twitter, and WhatsApp to spread the word about the Kisan Call Center. Share the toll-free number and other details of the service, and encourage farmers to use it.

- 4. Work with local NGOs:**

Collaborate with local non-governmental organizations (NGOs) to promote the Kisan Call Center. They can help to reach out to a larger number of farmers and make them aware of the service.

- 5. Organize awareness campaigns:**

Organizing awareness campaigns in rural areas and remote villages to reach out to farmers who may not have access to other means of communication. Use of local languages to ensure that the message is understood by everyone.

- 6. Street plays:**

Street plays are a great way to spread awareness about the Kisan Call Center among farmers and rural communities.

- 7. Radio shows:**

To collaborate with local radio stations and host radio shows to spread awareness about the Kisan Call Center. Also can invite experts to talk about agriculture-related issues and provide information about the Kisan Call Center. Arrangements of the show to answer questions from farmers and encourage them to use the service.

- 8. Advertisements:**

To create advertisements promoting the Kisan Call Center and broadcast them on local television channels. The advertisements should be informative, engaging, and clearly explain the benefits of the service. Also we can use real-life examples to help farmers understand how the service works.

9. Documentary films:

Creation of short documentary films highlighting the work done by the Kisan Call Center and how it has helped farmers. The films can be broadcast on local television channels and can be used to educate farmers about the service. In conclusion, radio and television are powerful mediums to spread awareness about the Kisan Call Center among farmers and rural communities.

10. Agro dealers:

Agro dealers are businesses that provide agricultural inputs such as seeds, fertilizers, pesticides, and other farming equipment to farmers. They can be retail stores or wholesalers who operate in rural areas and have direct contact with farmers. Agro dealers play an important role in supporting the agricultural sector and ensuring that farmers have access to the inputs and resources they need to succeed. agro dealers are important stakeholders in the agricultural sector and can play an important role in spreading awareness about the Kisan Call Center among farmers. By collaborating with the Kisan Call Center, they can help farmers access the information and support they need to succeed in their farming operations.

In summary, promoting the Kisan Call Center is crucial in helping farmers access information and assistance related to agriculture.

Conclusion

India has made remarkable progress in the domain of information and communication technology (ICT) over the past few years. This progress has been exemplified through the implementation of the Kisan Call Centre by the Government of India. The Kisan Call Centre was established to offer farmers a convenient platform to seek assistance from agricultural experts without the need for physically visiting various government offices to address their farm-related issues. This initiative effectively utilizes ICT to bridge the gap between farmers and experts, enabling farmers to access expert advice and guidance right from their homes or farms.

The Kisan Call Centre is designed to be a comprehensive solution for farmers, addressing a wide range of agriculture-related queries and problems. However, the low awareness among farmers about this service indicates a failure in effectively promoting and popularizing it. Despite this, among the farmers who were aware of the Kisan Call Centre, there was a notable level of utilization, with most farmers using it two to three times. The majority of their inquiries pertained to plant diseases and seeds for cultivation. Farmers who have utilized the Kisan Call Centre service have expressed their satisfaction with its effectiveness. This positive feedback confirms that the Kisan Call Centre serves as a reliable and valuable resource for farmers to tackle on-the-ground challenges. These findings highlight the importance of raising awareness about the Kisan Call Centre among farmers to ensure they can fully leverage its benefits and access the necessary assistance for their agricultural concerns.

Given the widespread use of mobile phones among individuals in India, the Kisan Call Centre service offers farmers a time-saving solution, where they can receive immediate assistance for their farming issues with just a phone call. To ensure the maximum benefit for farmers, it is crucial to take strong and comprehensive measures to popularize this service through various media channels. This includes utilizing different forms of media available to raise awareness among farmers about the Kisan Call Centre and its range of services aimed at improving farming practices. By effectively promoting this service, farmers can be empowered with the knowledge of available resources that can significantly enhance their agricultural endeavors.

References

- Bhalekar, P., Ingle, S., & Pathak, K. (2015). The Study of Some ICT Projects in Agriculture for Rural Development of India. *Asian Journal of Computer Science And Information Technology*, 5(1).
- Chhachhar, A. R., & Hassan, M. S. (2013, June). The Use of Mobile Phone Among Farmers for Agriculture Development. *IJSR - International Journal Of Scientific Research*, 2(6).
- Desarda, S., & Patil, S. (2017, October-December). Use of ICT to Solve Problems Faced by Indian Agriculture Industry. *International Journal of Advance and Innovative Research*, 4(4), 67-70.
- Glendenning, C. J., & Ficarelli, P. P. (2012). *The Relevance of Content in ICT Initiatives in Indian Agriculture*. IFPRI Discussion Paper.
- Goyal, S., Jirli, B., & Manunay. (2019, January-March). Perceived Problems and Suggestions of Farmers regarding Kisan Call Centre. *Indian Journal of Extension Education*, 55(1), 34-36.
- Jayade, K. G., & Khot, P. G. (2014, March-May). Impact of ICT and Mobile Technology in Agriculture in Maharashtra. *International Journal of Emerging Technologies in Computational*, 8(5), 428-432.
- Kataria, B. (2014, November-December). Role of Information Technology in Agriculture : A Review. *IJSRSET*, i(i), 1-3.

- Kavitha, S., & Anandaraja, N. (2019, July). Farmers Awareness on Kisan Call Centre Services in Telangana State of India. *An International Refereed, Peer Reviewed & Indexed Quarterly Journal in Science, Agriculture & Engineering, IX(XXX)*, 64-66.
- Khan, N. A., Qijie, G., Ali, S., Babar, S., & Shah, A. A. (2019). Farmers' use of mobile phone for accessing agricultural information in Pakistan: a case of Punjab province. *Ciência Rural, 49(10)*.
- Koshy, S. M., & Kumar, K. N. (2016). Attitude of Farmers towards Kisan Call Centres. *Journal of Extension Education, 28(4)*, 5753-5759.
- Koshy, S., Husain, S., & Kumar, K. (2015). Agricultural Information Delivery Mechanism Using ICT: A Case Study from Kerala, India. (pp. 1-3). IEEE International Symposium on Technology in Society (ISTAS) Proceedings.
- Marichamy, K. (2013, October). ICTs Initiatives in Indian Agriculture. *Tactful Management Research Journal, 2(1)*.
- Mittal, S., & Tripathi, G. (2009). Role of Mobile Phone Technology in Improving Small Farm Productivity. *Agricultural Economics Research Review, 22*, pp. 451-459.
- Pongnumkul, S., Chaovalit, P., & Surasvadi, N. (2015, March-July). Applications of Smartphone-Based Sensors in Agriculture: A Systematic Review of Research. *Journal of Sensors, 1-18*.
- Savithramma. (2011). *Farmers' Awareness of Kisan Call Centre and The Symbolic Adoption of Advice in Karnataka - A Study*. Bangalore: Department of Agricultural Extension University of Agricultural Sciences.
- Shaik, N. M., Jhamtani, A., & Rao, D. (2004, January). Information and Communication Technology in Agricultural Development: A Comparative Analysis of Three Projects from India. *Agricultural Research & Extension Network*.