



# Effectiveness of Short Message Service in Knowledge Gain among Farmers in Sub-Himalayan region

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### ABSTRACT

The study was conducted with an objective to assess the quality of short message service (SMS) received by farmers from Darjeeling Krishi Vigyan Kendra through mkisan portal. The different enterprises covered under SMSs were Agriculture, Horticulture, Animal Science and Home Science. In all 200 respondents were randomly selected among the respondents who received SMSs. The study was conducted on in terms of perceived effectiveness of SMSs in enhancing knowledge, preciseness of content, perceived utility, relevancy of content and simplicity of content in understanding the SMSs. The study shows that majority of the respondents had perceived that SMSs were highly effective in enhancing the knowledge. Majority of the respondents had perceived that the information provided SMSs were precise. Majority of the respondents had also perceived that the information provided through SMSs were highly utilizable, relevant to their farming situation and simple to understand. The information delivered through SMSs should have to be highly season oriented, crop specific and depending on categories of farmers for better effectiveness of the SMSs.

### 1. Introduction

Rapid growth of mobile telephony and the introduction of mobile-enabled information services provide ways to improve information dissemination to the knowledge intensive agriculture sector and also helps to overcome information asymmetry existing among the group of farmers (Mittal and Mehar, 2012). Today there are 1210.84 million telephone subscribers in both wired and wireless modes in India (TRAI press release, 2017). To make use of this huge network to reach the farming community “Kisan Call Centre” (18001801551) was started in the year 2004. Information regarding agriculture, animal husbandry, dairying, fisheries, home science, horticulture *etc.* can be availed over this telephonic service at free of cost.

A new service mKisan portal was inaugurated by the Hon'ble President of India on July 16, 2013 for providing SMS to farmers to disseminate useful information related to agriculture and allied fields. The mKisan Portal aims at reaching information, advisories and services through SMS to more than 12 crore farmers across the country. mKisan SMS Portal for farmers enables all Central and State government organizations in agriculture and allied sectors to give information/services/advisories to farmers by SMS in their language, preference of agricultural practices and location. These messages are specific to farmers' specific needs & relevance at a particular point of time and generate heavy inflow of calls in the Kisan Call Centres where people call up to get supplementary information. SMS Portal for farmers has empowered all Central and State Government Organizations in Agriculture and Allied sectors (including State Agriculture Universities, Krishi Vigyan Kendras, Agromet Forecasts Units of India Meteorological Department, ICAR Institutes,

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Organization in Animal Husbandry, Dairying & Fisheries *etc.*) to give information/services/advisories to farmers by SMS in their language, preference of agricultural practices and locations. Being an instant and non-intrusive medium of communication, the SMS advisories and alerts are enabling farmers to take informed decisions relating to different aspects of farming including crop production and marketing, animal husbandry, dairying and fisheries (Anonymous, 2018). Darjeeling Krishi Vigyan Kendra has registered to the mkisan portal and it got activated from December, 2013 to give information/services/advisories to farmers by SMS in local language (*i.e.* Nepali and Bengali) in agriculture and allied sectors. But the impact of these SMSs on knowledge gain and its use was not assessed. Therefore, a study was conducted to study the effect of these messages on knowledge gain and its use in the district.

## 2. Methodology

The study was conducted among the farmers who received short message service (SMSs) on different enterprises such as Agriculture, Horticulture, Animal Science and Home Science through mkisan portal by Darjeeling Krishi Vigyan Kendra since its registration to the mkisan portal. The total numbers of SMSs send since inception to June, 2017 were more than 150 SMSs to the farmers in the district. The information delivered through SMSs was mostly on various aspects of prevention and control of diseases and general management aspect of plants, horticulture crops and animals. Among the total numbers of the farmers, 200 respondents (50 respondents

each from four block such as Mirik, Kalimpong-I, Kalimpong-II and Kurseong) were randomly selected to whom the SMSs were send regularly. Simple statistical tools such as frequency, percentage and mean were used for analysis of the data.

## 3. Results and Discussion

### *Effectiveness in enhancing knowledge*

Table 1 shows that farmers had perceived that the information provided through SMSs were highly effective (38.5%) in enhancing knowledge followed by effective (30%) and very highly effective (25%) in enhancing knowledge. Only 6.5 percent of the respondents had reported that the information received through SMSs were less effective but none had reported that the SMSs were not effective. Mittal and Mehar (2012) reported that introduction of mobile telephony or mobile-enabled agriculture information services have a higher impact in regions which are poorer and are remote from markets. This might be the reason for higher effectiveness of the SMSs based agriculture information services to the remotest part of the region in hilly areas.

### *Preciseness of content*

Table 2 shows that farmers had perceived that the information provided SMSs were precise (37%) which is easily understandable followed by highly precise (29%) and very highly precise (15.5). This is to be noted that 44.5% of the respondents had reported that the SMSs were either highly precise or very highly precise where the information might have not been fully provided to the farmers.

**Table 1.** Perception on effectiveness of information received through SMS

Effectiveness score	Mirik (n=50)	Kalimpong-I (n=50)	Kalimpong-II (n=50)	Kurseong (n=50)	Total (N=200)
Very highly effective	11 (22)	9 (18)	18 (36)	12 (24)	50 (25)
Highly effective	23 (46)	29 (58)	16 (32)	9 (18)	77 (38.5)
Effective	12 (24)	5 (10)	16 (32)	27 (54)	60 (30)
Less effective	4 (8)	7 (14)	0 (0)	2 (8)	13 (6.5)
Not effective	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)

Figures in parentheses indicate percentage

**Table 2.** Perception on preciseness of content of information received through SMS

Preciseness of content	Mirik (n=50)	Kalimpong-I (n=50)	Kalimpong-II (n=50)	Kurseong (n=50)	Total (N=200)
Very highly precise	3 (6)	7 (14)	11 (22)	10 (20)	31 (15.5)
Highly precise	12 (24)	15 (30)	17 (34)	14 (28)	58 (29)
Precise	21 (42)	18 (36)	16 (32)	19 (38)	74 (37)
Less precise	10 (20)	6 (12)	6 (12)	7 (14)	29 (14.5)
Not precise	4 (8)	4 (8)	0 (0)	0 (0)	8 (4)

Figures in parentheses indicate percentage

### Perceived utility

Farmers had perceived that the information provided through the SMSs were highly utilizable (38%) followed by utilizable (31.5%) and very highly utilizable (25%). Only 5.5 percent of the respondents had reported that the information provided through the SMSs were less utilizable. None had reported that the information provided through the SMSs were not utilizable (Table 3). Raghuprasad *et al.* (2013) reported that most of the farmers had knowledge about the utility of ICT tools for farm communication. Fafchamps and Minten (2011) reported that farmers used information through SMSs in decision making. Mittal and Mehar (2012) reported that initial returns to the introduction of mobile based information services are larger in the regions which have higher information gaps. This might be the reason for higher effectiveness of the SMSs based agriculture information services to the remotest part of the region in hilly areas.

### Relevancy of content

Majority of the respondents had reported that the information provided through the SMSs were relevant (38.5%) to their farming situation followed by highly relevant (34%) and very highly relevant (22.5%). Only 12 percent and 3 percent of the respondents had reported the information were less relevant and not relevant respectively (Table 4).

### Simplicity of content

Table 5 shows that majority of the respondents had perceived that the information provided through SMSs were simple (40%) which was easily understandable followed by highly simple (26%) and less simple (15%). Only 11 percent of the respondents had reported that the SMSs were very highly simple and 8 percent of the respondents had reported that the SMSs were not simple to understand.

**Table 3.** Perception on Perceived utility of information received through SMS

Perceived utility score	Mirik (n=50)	Kalimpong-I (n=50)	Kalimpong-II (n=50)	Kurseong (n=50)	Total (N=200)
Very highly utilizable	16 (32)	9 (18)	18 (36)	7 (14)	50 (25)
Highly utilizable	18 (36)	23 (46)	16 (32)	19 (38)	76 (38)
Utilizable	14 (28)	11 (22)	14 (28)	24 (48)	63 (31.5)
Less utilizable	2 (4)	7 (14)	2 (4)	0 (0)	11 (5.5)
Not utilizable	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)

Figures in parentheses indicate percentage

**Table 4.** Perception on relevancy of content of information received through SMS

Relevancy of content	Mirik (n=50)	Kalimpong-I (n=50)	Kalimpong-II (n=50)	Kurseong (n=50)	Total (N=200)
Very highly relevant	8 (16)	10 (20)	16 (32)	11 (22)	45 (22.5)
Highly relevant	17 (34)	18 (36)	18 (36)	15 (30)	68 (34)
Relevant	14 (28)	16 (32)	11 (22)	16 (32)	57 (38.5)
Less relevant	11 (22)	5 (10)	3 (6)	5 (10)	24 (12)
Not relevant	0 (0)	1 (2)	2 (4)	3 (6)	6 (3)

Figures in parentheses indicate percentage

**Table 5.** Perception on simplicity of content of information received through SMS

Simplicity of content	Mirik (n=50)	Kalimpong-I (n=50)	Kalimpong-II (n=50)	Kurseong (n=50)	Total (N=200)
Very highly simple	6 (12)	7 (14)	3 (6)	6 (12)	22 (11)
Highly simple	12 (24)	17 (34)	13 (26)	10 (20)	52 (26)
Simple	19 (38)	20 (40)	18 (36)	23 (46)	80 (40)
Less simple	8 (16)	5 (10)	10 (20)	7 (14)	30 (15)
Not simple	5 (10)	1 (2)	6 (12)	4 (8)	16 (8)

Figures in parentheses indicate percentage

#### 4. Conclusion

Delivering the information through SMS is one-way communication so it has the limitation of feedback mechanism. Still the information received by the farmers through SMSs was perceived to be effective in enhancing the knowledge of the farmers. The study has shown that the information received by the farmers through SMSs was perceived to be utilizable and very effective in enhancing knowledge on farm related activities. The respondents had further perceived the SMSs were relevant to their farming situation and were simple to understand. The information delivered through the SMSs to the farmers should have to be highly season oriented, crop specific and depending on categories of farmers for better effectiveness of the SMSs.

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