Original Research Article

Exploring the Constrained Faced by Farmer in Use of ICT Mediated Extension Services in Arghakhanchi District of Nepal

ABSTRACT

A study was conducted to find out the profile characteristics of the respondents and constraints faced by farmers in usages of ICTs mediated extension services by the farmers of Arghakhanchi district of Nepal in 2020. A total of 180 farmers were randomly selected for the study from 6 wards of 2 municipality of the district. Data was collected by structured interview schedule and used different statistical analysis tools for interpreting the data such as Frequency, Percentage, Arithmetic Mean, Standard Deviation and Rank order. The constraints perceived by farmers were divided on 4 sections i.e., Infrastructural constraints, financial constraints, Content related constraints, and Personal constraints. Majority of respondent possessed the lack of network connectivity is first problem among infrastructural constraints, high cost of internet facilities in village on financial constraints, Similarly Complexity of message content on content related constraints and lack of specialized training on ICT on Personal constraints.

Key words: ICT, Agriculture, Farmer, Profile characteristics, Constraints

Introduction:

ICT is broad term that consist of communication technology, computer technology and information management technology which can revolutionize Nepalese agriculture sector and can benefit all farmers including small landholders. Agriculture is the most important sectors that contributes 24.1 % of total GDP and about 60.4% of the total populationofNepal aredepending on it(Agriculture statistics 2022-2023). The conventional approach of agriculture being adapted has lots of challenges in terms of production, marketing, profit etc. In Nepal extension service coverage is significantly less, which is only 15% so minimize this coverage many different agency provides various type of ICT mediated extension services in agriculture. The challenges of the traditional agriculture canbe addressed significantly by using Information and

Communication Technologies (ICT) which could be play an important role in uplifting the livelihoods of the small landholder farmers.This article explores the various profile characteristics of the respondents in research area and identify the constraints faced by the respondent on use of ICT mediated extension services for agriculture purpose.

Some of the important ICT mediated extensionservices in Nepalese agriculture are as follows:

1. **Telecommunication initiatives:**

a. Kisan call center**:**

2. Media initiatives:

A. Mass media

a. Krishi program on Radio Nepal:

b. Krishi program on National television:

c. Krishi T.V.:

B. Print media:

a. Krishi magazine:

b. Krishi diary

c. Krishi Patrika:

3. **Internet-based initiatives:**

a. Smart Krishi:

b. Hamro Krishi:

c. Krishi guru:

Review of literature

Sahar (2019)stated that poor internet connectivity (76.67%), lack location-based information (94.57%) and repairing cost of I.C.T. tools (60.84%) were the major problems faced by the respondents. Lack of trustworthy information (35.8%), required content was not available in a local language, and lack of adequate skills were other constraint faced by the respondent.

Mishra *et al.* (2020) conducted research and they revealed that lack of knowledge about ICT tools, relevant information not received in time and awareness of new ICT service among farmers were the major constraints in use of ICT in agriculture.

Chowhan and Ghosh (2020) found that majority of the farming group and thereby involved extension workers have limited access, usage, knowledge and capacity on the use of ICT tools and media.

Singh et al. (2021)conducted study and shows that Among the personal constraints, the high cost of ICTs tools, lack of awareness about the availability of different ICT tools were major constraints. Similarly, in the case of infrastructural constraints Internet Connectivity and in case of organizational constraints subscription of relevant Journals and e resources and lack of training on ICT tools ranked at top.

Rengaraj and Shibu (2022) did research on - Use of information and communication technology in agriculture among farmers in the south region of India found that factors such as lack of awareness, not enough ICT infrastructure and non-strategic location of information centers were the major constraints.

Mahajan *et al.* (2023) - stated that Lack of awareness of proper functioning about ICT tools, Lack of training of the farmers on ICT tools, Inadequate internet supply, Lack of uninterrupted power supply, Difficulty in understanding the content language, Poor mobile/internet connectivity in rural areas were the major constraints faced by Farmers.

Materials and Methods

The present study is conducted in Sandhikharka municipality and Malarani rural municipality of Arghakhanchi district of Nepal. District and municipalities were purposively selected for the study. There are 12 wards in Sandhikharka municipality and six wards in Malarani rural municipality. Out of 12 wards of the Sandhikharka municipality, ward No. 2, 6, 11 were selected randomly. Whereas from 6 wards of Malarani rural municipality, ward No. 3, 4 and 5 were randomly selected. From each selected ward, 30 farmers were selected randomly for the present study. Hence the total number of respondents was 180. The data were collected by using the structured interview scheduleand collected data was analysed, classified and tabulated. Statistical

tools such as frequency, percentage, mean and standard deviation were used to interpret findings and draw conclusions.

Result and Discussion

Table no 1. Profile characteristics of respondent in research area

Age

Age	Range	Frequency	Percentage
Young	<35 years	60	33.00
Middle	35-58	90	50.00
old	>58 years	30	17.00

Gender

Gender	Frequency	Percentage
Male	75	41.67
Female	105	58.33

Family type

Family type	Frequency	Percentage
Joint	98	54.50
Nuclear	82	45.50

Education

Education level	Frequency	Percentage
Illiterate	11	06.11
Can read only	14	07.77
Can read and write	8	04.44

Primary school	41	22.30
Medium school	16	08.88
High school	57	31.86
Graduated	28	15.85
Post graduated	5	02.79

Occupation

Occupation	**Frequency**	**Percentage**
Agriculture	7	04.00
Agriculture +Livestock	130	72.00
Agriculture + Services	8	04.44
Agriculture + Business	5	02.56
Agriculture +Others	30	17.00

Farm experience

Farm experiences	**Range**	**Frequency**	**Percentage**
Low (mean-S.D)	<7 year	36	20.00
Medium (mean ± S.D)	7-36 year	104	57.78
High (mean +S.D)	>36 year	40	22.22

Annual family income

Annual family income	**Range**	**Frequency**	**Percentage**
Low (Mean –S.D)	<149612.41	35	19.34
Medium (Mean ± S.D)	149612.41-495054.24)	97	54.55
High (Mean –S.D)	>495054.24	47	26.11

Extension agency contact

Extension contact:	**Range**	**Frequency**	**Percentage**
Low(Mean – S.D)	<0.355	50	27.77
Medium (Mean ± S.D)	0.355-10.28	97	53.88
High (Mean + S.D)	>10.28	33	18.33

Mass media exposure

Mass media exposure	**Range**	**Frequency**	**Percentage**
Low<(Mean – S.D)	<2	44	24.44
Medium (Mean ± S.D)	2-5	117	65.00
High > (Mean + S.D)	>5	19	10.55

Social participation

Social participation	**Range**	**Frequency**	**Percentage**
Low < (Mean – S.D)	<0.097	75	41.68
Medium (Mean ± S.D)	0.097-5	77	42.77
High > (Mean + S.D)	>5	28	15.55

Information seeking behavior

Information seeking behavior	**Range**	**Frequency**	**Percentage**
Low (Mean- S.D)	<2.81	40	22.22
Medium (Mean ± S.D)	2.81-8.98	114	63.33
High (Mean +S.D)	>8.98	26	14.45

Land ownership

Landholding	**Range**	**Frequency**	**Percentage**
Small (Mean –S.D)	<0.243 acre	22	12.22
Medium (Mean ± S.D)	0.244 – 1.77 acre	130	72.22

Large (Mean + S.D)	>1.77 acre	28	15.56

Media ownership

Media ownership	**Range**	**Frequency**	**Percentage**
Low(Mean – S.D)	<4.291	17	09.44
Medium (Mean ± S.D)	4.291-6.48	140	77.77
High (Mean + S.D)	>6.48	23	12.79

Age

Half of the total respondents (50%) belonged to the middle age group followed by young age i.e. 33.33 %and 16.66 percent of the farmers were in the old age group.

Gender

Most of the respondent (58.33 %) in the research area were female, and 41.67 per centrespondentwas male

Family type

More than half of the (54.5 %) belonged to the joint family and 45.55 per cent respondent belonged to the nuclear family

Education

Majority of the respondent (31.67%) were having High school level education whereas, 22.77 per cent farmers were having Primary school, 15.55 per cent respondents were Graduated, 8.88 per cent respondents having Medium school level education, 7.77 per cent farmers Could read-only, 6.11 per cent respondents were Illiterate, 4.44 per cent respondents can read and write, and only 2.77 per cent respondents had post-graduate level educations.

Occupation

Most of the respondent (73.33%) were engaged in agriculture + livestock, 4.44 per cent farmers involved in agriculture + services along with their family members and 3.88 per cent farmers engaged in only agriculture while 2.77 per cent farmers involved in agriculture + business.

Farm experience

Majority of the respondent (57.78%) had a medium level of farm experiences followed by high (22.22%) and low (20.00%) level of farm experiences

Annual family income

More than half (54.55 %) of the farmers had earned a medium level of annual family income, while 26.11 per cent farmers fell under a high level of annual family income and 19.34 per cent farmers fell under low-income group

Extension agency contact

More than half (53.88%) of the respondents had a medium level of extension contact followed by low (27.77%) and high (18.33%) respectively.

Mass media exposure

Majority of the respondent (65%) had a medium level of mass media exposure followed by low (24.44%) and high (10.55%) mass media exposure respectively.

Social participation:

Majority of the respondent (42.77%) had a medium level of social participation followed by low (41.68%) and high (15.55%) level of social participation.

Information seeking behavior

out of the total farmers, 63.33 per cent of farmers had medium information-seeking behavior, 22.22 per cent farmers had low information-seeking behavior, and 14.45 per cent of farmers had high information-seeking behaviors

Land holding

Majority (72.22%) of farmers had medium-size farm holding followed by high (15.56%) and low (12.22%) size farm holdings.

Media ownership

More than two-thirds (77.77%) of the farmers had a medium level of media ownership. followed by 12.79 per cent of farmers had a high level of media ownership and 9.44 per cent of farmers had a low level of media ownership

Table2: Constraints perceived by the farmer towards the use ofICT Based extension services in agriculture

A.	**Infrastructural constraints**	**Frequency**	**Percentage**	**Mean**	**Rank order**
1.	Irregular supply of power or electricity	6	03.00	0.66	IV
2.	Lack of network connectivity	156	86.67	1.73	I
3.	Lack of accessibility of ICT tools	10	05.22	0.12	V
4.	Lack of awareness of ICT initiatives	133	74.00	0.899	III
5.	Lack of awareness of ICT tools	71	39.34	1.61	II
B.	**Financial constraints**				
1.	High cost of internet facility in village	127	70.59	0.483	I
2.	High cost of ICT tools	7	03.88	1.455	II
C.	**Content related constraints**				
1.	Complexityof message content	8	04.44	0.522	I
2.	Lack of reliable and useful content	6	03.34	0.47	II
3.	Lack of updating of information	6	03.34	0.44	III
D	**Personal constraints**				
1**.**	Lack of education	120	66.67	1.40	III

2.	Lack of skills in handling in ICT tools	153	85.00	1.71	II
3.	Lack of specialized training on ICT	170	94.46	1.944	I

The data presented on table 2 revealed that among five constraints in infrastructure constraints, lack of network connectivity with mean 1.73 was on first ranked followed by lack of awareness of ICT initiatives (1.61), lack of awareness of ICT tools (0.899), Irregular supply of power or electricity (0.66) and lack of accessibility of ICT tools (0.12) with rank II, III, IV, V respectively.

Similarly, the high cost of internet facilities in villages with mean 1.455 was on I ranked and high cost of ICT tools constraints was ranked II with 0.483 mean in financial constraints.

It was observed from the table that among three content related constraints, the complexity of message content with mean 0.522 was on the first rank whereas, lack of reliable and useful content with mean 0.47 was on the second rank, and lack of updating of information with mean 0.44 was rank on the third.

And lack of specialized training on ICT with mean 1.944 was ranked on first whereas lack of skill in the handling of ICT tools with mean 1.71 was on the second rank and lack of education with mean 1.40 was ranked on the third Personal constraints.

These findings are in conformity with the findings of the **Kumari (2019)**, **Singh et al. (2021)**, **Mishra *et al.* (2020** and **Rengaraj and Shibu (2022)**.

Conclusion:

The study concluded that the major constraints faced by the farmer in the research area are Lack of awareness of ICT initiatives, lack of specified training on ICTs, low literacy rate, lack of skills on the handling of ICTs tools, distrust the information obtains from the ICTs tools, technophobia among the farmers and low advertisement of ICT initiatives are the main reason for low usages of ICT in agriculture. To overcome these problem government of Nepal should advertise, should conduct various training and workshop at farmers level about ICT, should made available of

Internet facility at low cost, information should be provided in local language and, increase the extension agency contact of the farmers.

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