

## Utilization Pattern on Use of Mobile Phones among Small Ruminant Farmers in Tirunelveli District

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### ABSTRACT

*The mobile phone has emerged as one of the widely accepted and adopted ICT tool to deliver the information in agriculture, livestock and allied sectors. Though mobile phone in the livestock sector is considered as an emerging tool, there is a need to study the utilisation pattern on use of mobile phone among the farmers who were engaged in animal husbandry enterprises. Accordingly, 60 sheep and 60 goat farmers were selected randomly in Tirunelveli District of Tamil Nadu that constituted a sample size of 120 for this study. The primary data were collected from the selected respondents by using well structured pre-tested interview schedule. The study revealed that, majority of the respondents (77.50 per cent) owned mobile phones and only 22.50 percent did not have mobile phones. About 28.33 per cent of respondents used the mobile phones for contact with extension personnel to get livestock related information. As regard to credibility of information received through mobile phone, 40.83 per cent trust the information to a great extent whereas 40.00 per cent of the respondents reported to trust it to some extent. About 50.00 per cent of the respondents faced signal problem while using mobile phone and 28.33 per cent faced other constraints such as language and voice problem. The study concluded that almost all the respondents were using mobile phones regularly for retrieving information on animal husbandry related information depending on their needs. Hence, it is recommended to develop mobile application software in small ruminants as decision support system to cater to the information needs of farmers.*

**Key words:** Mobile phone, Small ruminant farmers, Utilisation pattern

### INTRODUCTION

Information and Communication Technology (ICT) has major role in acquiring and accessing information to farmers that can be transformed to augment agricultural and animal husbandry production and productivity. Presently, wide range ICT platforms are used to access and share animal husbandry information and knowledge in the form of different media like web pages, audio, video and text messaging. Among various ICT tools, mobile phone has emerged as one of the widely accepted and adopted instruments in most parts of the world to ease the Information Communication process among farming communities (Hayrol *et al.* 2009). Recent advances in Information and Communication Technologies

have changed the way knowledge is produced, processed, stored, retrieved and transferred to different stakeholders in agriculture (Ansari *et al.*, 2013).

Nowadays, the popularity of an Android smart phone is increasing very fast, and the smart phones have become the basic need of mostly every one. An android is one of the smart phone operating system whose most applications are available freely on an android market. An android user can easily and freely download android applications. Android is an operating system for mobile device and also a platform to develop key application for the smart phone. Java programming language is used to develop android application by using Android SDK tools and API (Patel *et al.*, 2014).

Rizvi (2010) observed that access to mobile based advisory services can help to reach poor farmers in remote rural areas. Mittal and Tripathi (2009) reported the key role played by mobiles in lowering transaction costs and raising the income levels of farmers, by efficiently addressing agricultural information requirements, while Inigo *et al.*, (2014) and Mittal *et al.*, (2010) reported that mobile phones contribute greatly to agricultural and animal husbandry information dissemination. With these background, a NABARD funded Project on "Development of mobile based technology transfer application system to empower the small ruminant farmers in Tirunelveli District" is operational at Veterinary College and Research Institute, Tirunelveli, Tamil Nadu, India. As a part of the project, a study with the objective to know the socio-economic profile of the mobile users that determines the utility pattern of mobile phone by livestock farmers has been conducted.

#### METHODOLOGY

Tirunelveli district of Tamil Nadu was purposively selected as project study area since it has sheep and goat population of about 3,03,105 and 3,30,230 respectively (19<sup>th</sup> Livestock Census, 2012). Moreover, Sheep and goat enterprises are one of the livelihood options for the farmers of Tirunelveli district. Accordingly, 60 sheep and 60 goat farmers were selected randomly to study the utilization pattern of use of smart phones in Tirunelveli District of Tamil Nadu, thus constituting a sample size of 120 for this study. An exploratory research design was used in this study. Socio-economic characteristics included age, gender, education, occupation, type of family, family size, family occupation, land holding and type of house. Besides the ability to use the mobile phone, regularity, trust in the information were included to assess the utility and potential of mobile phone use among small ruminant farmers. The primary data were collected from the selected respondents by using well structured pre-tested interview schedule. The data collected from sample

respondents were coded, tabulated, analysed and presented in the form of tables. The statistical tools viz. frequency, percentage and mean were used for analysis of data.

#### RESULTS AND DISCUSSION

The study was conducted to find out the socio-economic profile of the respondents who used mobile phones in the study area. It is clearly evident from the Table 1 that, majority (71.67 per cent) belonged to middle age group and 13.33 per cent were from old age category. Rest of the respondents were in young age category. Gender-wise breakup of the respondents reveals that 85.83 per cent of them were male and rest of the respondents were female. It appears that in the society, males earn for the family and females take care of the household responsibilities.

Further, the results regarding the educational level of the respondent showed that 55.84 per cent were educated up to high school level followed by 23.33 per cent up to primary level. The findings indicate that majority (69.17 per cent) of the respondents belonged to nuclear family and 30.83 per cent of the respondents belonged to joint family. As regards the distribution of the respondents according to family size, majority (73.34 per cent) of the respondents belonged to medium family, 15.83 per cent of the respondents belonged to large family and 10.83 per cent of the respondents' belonged to small family.

The analysis of family income indicates that 58.33 per cent were from medium income group whereas 29.17 per cent respondents were from high income group. These findings are supported by Mariscal, Rivera (2006) and Donner (2005) who reported that in the early years of introduction of mobiles, only high and medium income category people were the major users of mobiles. As regards house type, a large majority of respondents (80.33 per cent) had pucca house, and the rest 19.17 percent had kaccha type houses.

**Table 1**  
**Distribution of the respondents on the basis of socio-economic profile (N= 120)**

Sl. No.	Variables	Frequency	Percentage
I	<b>Age</b>		
a	Young (< 30 years)	18	15.00
b		86	71.67
c	Old (> 50 years)	16	13.33
II	<b>Gender</b>		
a	Male	103	85.83
b	Female	17	14.17
III	<b>Education</b>		
a	Illiterate	06	5.00
b	Primary	28	23.33
c	High School	67	55.84
d	Graduate and above	19	15.83
IV	<b>Family type</b>		
a	Nuclear	83	69.17
b	Joint	37	30.83
V	<b>Family size</b>		
a	Small family (< 5members)	13	10.83
b	Medium family (5-10 members)	88	73.34
c	Large family (>10 members)	19	15.83
VI	<b>Family income</b>		
a	Low income (10,000-50,000 per year)	15	12.50
b	Medium income (50,000-1,00,000 per year)	70	58.33
c	High income (1,00,000-10,00,000 per year)	35	29.17
VII	<b>Type of house</b>		
a	Kaccha	23	19.17
b	Pucca	97	80.33

Mobile phone is now a technology of choice of the rural folk. The mobile has become a necessity for all types of people irrespective of class or place of residence. The data regarding the ownership of mobile phone among the farmers is given in Table 2. It is evident from the table that 77.50 percent of the farmers owned mobile phone that to 65.83 per cent smart phone with android platform.

Further, the distribution of respondents according to the type of mobile phone handset owned and services used by farmers is given in Table 3. Mobile handsets manufactured by various companies are being used by different people according to the choice of features available and their paying capacity. It is clear from the table 3 that

50.00 percent of the farmers had Samsung mobile handset followed by other type of handset i.e lava, micromax etc. This is due to introduction of various android based smart phones with cheaper price or affordable price to the farmers. Majority of the respondents (34.17 %) were using mobile phones for more than five years and 32.5 per cent using mobile phones for 1-2 years. About 28.33 per cent used BSNL network service. About 10 percent respondents were found to be using the services provided by Airtel and Jio. Thus, it can be concluded that Samsung mobile handset is very popular among the farming community and they prefer to use the mobile services provided by BSNL. About 60.83 per cent of respondents use mobile phone every day followed by 39.17 per cent when needed.

**Table 2**  
Distribution of the respondents according to mobile phone ownership (N=120)

Sl. No.	Mobile phone ownership	Yes	%
a	Own a mobile phone	93	77.50
b	Smart phone with android	79	65.83

**Table 3**  
Distribution of respondents according to type of handset and service used (N 120)

Sl. No.	Mobile phone	Frequency	Percentage
<b>I</b>	<b>Handsets Owned</b>		
a	Nokia	11	9.17
b	Samsung	60	50.00
c	Others	49	40.83
<b>II</b>	<b>Using mobile since when</b>		
a	< 1 year	17	14.17
b	1 - 2 years	39	32.50
c	3 - 5 years	23	19.17
d	> 5 years	41	34.17
<b>III</b>	<b>Services providers</b>		
a	BSNL	34	28.33
b	AIRTEL	12	10.00
c	IDEA	21	17.5
d	Jio	13	10.83
<b>IV</b>	<b>Frequency of use</b>		
a	When needed	47	39.17
b	Every day	73	60.83

**Table 4**  
Distribution of the respondents according to mobile phone usage (N=120)

Sl. No.	Mobile phone	Frequency	Percentage
<b>I</b>	<b>Purpose of keeping mobile</b>		
a	Contact with family members	70	58.33
b	Contact with Extension Personnel	34	28.33
c	Contact with A.H department	16	13.33
<b>II</b>	<b>Trust the information</b>		
a	To a great extent	49	40.83
b	To some extent	48	40.00
c	Not at all	23	19.17
<b>III</b>	<b>Constraints in using mobile phone</b>		
a	Signal problem	60	50.00
b	Tariff / Cost of mobile use	26	21.67
c	Others	34	28.33

**Table 5**  
Distribution of the respondents on the basis of willingness to pay (N=120)

Sl. No.	Payment for mobile services	Yes	%
a.	Less than Rs.100 p.m.	02	01.67
b.	Rs. 100-200 p.m.	32	26.67
c.	Rs. 200- 300 p.m.	70	58.33
d	> 300	16	13.33

People keep and use mobile for a variety of purpose. The respondents were asked to indicate the purpose of mobile phone usage, constraints in this use and trustworthiness of the information received through mobile. The results obtained are present in Table 4.

Majority of respondents (58.33 per cent) reported that they use mobile to remain in touch with their family members whereas 28.33 percent used it to retrieve animal husbandry related information. As regard the credibility of information received through mobile phone, only 40.83 per cent trust the information to a great extent whereas 40.00 percent of the respondents reported to trust it 'to some extent' and about 19.17 per cent 'do not trust at all'. Further, most of the respondents (50.00 per cent) faced signal problem while using mobile phone and 28.33 per cent faced other constraints such as language and voice problem etc.

Use of mobile phone has increased substantially, thanks to the gradual and regulated expansion of telecommunication services in the country. The people living in urban as well as rural area have access to one or more mobile services. The farmers are also reportedly using the mobile phones for a variety of purpose. It is yet to be established as to what extent the farmers would be willing to use and pay for getting the information through mobile.

About 58.33 percent of respondents are willing to pay for Rs. 200-300 per month and 26.67 per cent of respondents are willing to pay Rs.100-200 per month to utilise the services.

The findings clearly showed that majority of farmers own and use the mobile for a variety of purpose. Farmers are capable and open to use mobile phones for receiving variety of information. In addition, mobile phones are also being used for livestock marketing, to obtain agriculture credit, etc. The information provided through mobile must be in local language, information must be provided in form of voice messages as the text messages may be a limiting factor to literate farmers. They are also willing to receive and pay for such information. There is huge potential for the use of mobile phones in communicating livestock related information to the farming community.

#### Recommendations

- There is no doubt that android based smart mobile phones have penetrated in urban as well as rural areas and the ownership is distributed across various socio-economic strata.
- Further, android based smart mobile phone can be used to reach the widely scattered and diverse farming community.
- It can overcome the constraints of time, space and scare human resources.
- Hence this research recommends that developing mobile application software in small ruminants will be useful to farmers, entrepreneur and other stakeholders.

*Received : July 16, 2018*

*Accepted : July 30, 2018*

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