



## Research Article

# EXPLORING THE PERCEPTION OF THE DAIRY FARMERS IN RELATION TO DIFFERENT COMPONENTS OF THE ANDROID MOBILE APP 'ECO-DAIRY'

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**Abstract-** Environment Friendly Dairy Farming Practices (EFDfPs) is an approach which includes effective adaptive as well as mitigating practices to combat the impact of livestock on environment and vice versa. To disseminate the information regarding the subject matter a mobile application called "Eco-Dairy" was developed. This paper is devoted to explore the perception of the dairy farmers of Urban and Peri- Urban areas of Indian National Capital Region in relation to the android mobile application. To measure the perception level of respondents a list of items seeking responses on different aspects were prepared. These listed items were administered to the respondents. Each respondent was asked to mark on a three-point continuum: highly satisfied, satisfied and least satisfied with the statements, with a score of 3, 2 and 1 for the responses respectively. Based on the scores the perception level was calculated using weighted score and weighted mean score. It was found that the respondents were highly satisfied in the following aspects of app components: user-friendliness, relevance of the content, attractiveness of the photos/graphics and was ranked first among the each of the three categories listed respectively.

**Keywords-** Environment, Livestock, Mobile app, Mitigation, Adaptation, Perception Level.

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## Introduction

In the face of abating financial resources as a result of changing government policies and withdrawal of the World Bank funding, using conventional information dissemination methods like farm/home visit, personal letters etc are becoming less effective and a difficult affair to carry. One of the most emphatic way to address this situation is by encouraging the adoption of Information and Communication Technologies (ICTs) by researchers as well as extension professional to transmit pertinent information to farmers [1]. This finding by the authors was backed by many other similar researches carried out by scientists in different parts of the world, which entrenched many possible applications of ICT in agricultural extension specifically in accessing required information, knowledge and technology required in farming [2].

Among modern ICTs, mobile phones serves as a means for effective transfer of knowledge and information about market and relevant agricultural technology to farmers that enable them to adopt the technology directly to their farm which in turn improves their farming output and make easy access to market [3]. So, considering the above fact Mobile app was thought to be the best means to disseminate EFDfPs among the dairy farmers. EFDfPs have been operationalized as package of practices which includes adaptive and mitigating strategies to combat adverse effect of livestock on environment and vice-versa. This paper tries to uncover the perception of the respondents about different components of the developed android application called "Eco-Dairy". Respondents in this case are the dairy farmers of urban and peri-urban areas of Indian National Capital Region. Perception mainly includes two main elements they are, recognizing and interpreting sensory stimuli, these help human beings to see, hear and understand stimuli coming from surrounding.

## Material and Methods

### Locale of study and sampling plan

The study was conducted in National Capital Region (NCR). The National Capital Region (NCR) of India encompasses 33 districts from national capital territory and states of Haryana, Uttar Pradesh and Rajasthan. Out of them, six districts (namely North Delhi, North West Delhi, Sonapat, Panipat, Bagpat and Alwar) were selected by using proportionate stratified random sampling technique subject to condition that there must be at least one district from each state. Among these selected districts, 25 respondents were selected from each district. Pooling which made a total of 150 respondents that were interviewed to get primary information on the topic with the help of semi-structured interview schedule and open discussion method. Out of which only thirty respondents were randomly chosen, five from each selected district to explore the perception of the dairy farmers.

### Statistics Used in the Study

The degree of effectiveness of the developed android mobile app can be assessed through respondents' perception. Perception can be measured through scale construction as well as by developing questionnaire [4,5] but in this manuscript simple questionnaire method was followed. It is assumed that better the perception by the users in terms of satisfaction derived from the various components of mobile App greater is its effectiveness. On the basis of satisfaction, the farmers were categorised into groups viz., highly satisfied, satisfied and least satisfied. Then weighted score, weighted mean score and rank was calculated. Based on these calculation results were drawn.

## Result and Discussion

For judging the perceptual level of the respondents about the developed android mobile application; three categories were made App Component, Content Component of the app and photo/Graphic Component of the app. Result and Discussion about the same is described below:

### Respondents' perception about the App components

Talking about the app component and its satisfaction level, it was observed from the [Table-1(A)] that respondents were highly satisfied in the following aspects of app components: 'user-friendliness' was ranked first in the satisfaction continuum,

this could be due to the fact that mobile application has self-guiding features, which made the usage of the application easy among the respondents, and 'arousal of curiosity' was ranked second, this could be because every individual have the tendency to get attracted towards new things. While designing of the application and 'Lack of supporting versions on all smart phones' were ranked fourth and fifth in this regard respectively. The probable reasons for this could be because respondents had different types of smart phones while the application was designed for a specific type of smart phone with particular screen size. Later this problem was solved by modifying the coding and designing of the mobile application.

**Table-1(A) Respondents' perception about the Android Mobile App "Eco-Dairy"(App Component)(n= 30)**

S. No	Characteristics	Highly Satisfied (3)	Satisfied (2)	Least Satisfied (1)	Weighted Score	Weighted Mean score And Rank
<b>App Component</b>						
a.	Arousal of curiosity	23 (76.67)	4 (13.33)	3 (10.00)	80	2.67(2)
b.	Designing of the application for different mobile screens.	16 (53.34)	13 (43.33)	1(3.33)	75	2.50(4)
c.	Lack of supporting versions on all smart phones	10 (33.33)	17 (56.67)	3(10.00)	67	2.23(5)
d.	User -friendliness	21 (70.00)	9 (30.00)	0(0.00)	81	2.70(1)
e.	Economically feasible	19 (63.33)	8 (26.67)	3(10.00)	76	2.53(3)

(Source :Table data and figure are authors original work )

### Respondents' perception about the Content Component of the App

Talking about the content component and its satisfaction level, it was found from the [Table-1(B)], that respondents were satisfied in following components: Relevance of the content was given first rank, this could be due to the fact that most of the information where of the respondents' use, and completeness of the

information was rank second, this could be because every topic was extensively reviewed and then added. While practical utility was ranked seventh. The probable reasons behind this could be the newness in some of the practices related to feeding and health care and so the practices were not in the trend among the dairy holders.

**Table-1(B) Respondents' perception about the Android Mobile App "Eco-Dairy"(Content Component)**

S. No	Characteristics	Highly Satisfied (3)	Satisfied (2)	Least Satisfied (1)	Weighted Score	Weighted Mean score and Rank
<b>Content Component</b>						
a.	Relevance of the content	22 (73.33)	8 (26.67)	0 (0.00)	82	2.73(1)
b.	Completeness of the information	16 (53.34)	10 (33.33)	4 (13.33)	72	2.40 (5.5)
c.	Accuracy and clarity of the information	21 (70.00)	8 (26.67)	1 (3.33)	80	2.67 (2)
d.	Simplicity in understanding the information	12 (40.00)	18 (60.00)	0 (00.00)	72	2.40 (5.5)
e.	Language of the content	19 (63.33)	11 (36.67)	0(0.00)	79	2.63(3)
f.	Logical presentation of the content	18 (60.00)	12 (40.00)	0 (0.00)	78	2.60 (4)
g.	Practical utility of the message	7 (23.33)	16 (53.34)	7(23.33)	60	2.00(7)

(Source: Table data and figure are authors original work)

### Respondents' perception about the Photo/Graphic Component of the App

Coming to photo/graphic component it can be seen from [Table-1(C)], 'attractiveness of the photos/graphics' was ranked first while 'Appropriateness of the photos /graphics used', 'Quality of the photos/graphics', 'Arrangement of the

photos/graphics' were ranked second, third and fourth respectively. To optimize the size of the mobile application the resolution of photos were reduced; this could be the probable reason behind the above result.

**Table-1(C) Respondents' perception about the Android Mobile App "Eco-Dairy"(Photo/Graphic Component)(n= 30)**

S. No	Characteristics	Highly Satisfied (3)	Satisfied (2)	Least Satisfied (1)	Weighted Score	Weighted Mean score and Rank
<b>Photo / Graphic Component</b>						
a.	Appropriateness of the photos /graphics used	20 (66.67)	10 (33.33)	0 (0.00)	80	2.67 (2)
b.	Attractiveness of the photos/graphics	21 (70.00)	9 (30.00)	0 (0.00)	81	2.70 (1)
c.	Quality of the photos/graphics	19 (63.33)	11 (36.67)	0 (00.00)	79	2.63 (3)
d.	Arrangement of the photos/graphics	18 (60.00)	12 (40.00)	0 (0.00)	78	2.60 (4)

(Source: Table data and figure are authors original work)

## Conclusion

From the study it was found that the respondents were highly satisfied in the following aspects of app components: "user-friendliness" was ranked first in the satisfaction continuum; "arousal of curiosity" was ranked II<sup>nd</sup>. While "designing of the application" and "suitability to get the information to field situation" where ranked fourth and fifth in this regard respectively. Talking about the content component and its satisfaction level, it was found that respondents were satisfied

in following components: "Relevance of the content" was given first rank, and "completeness of the information" was rank second in satisfaction continuum, while "practical utility" was ranked seventh in the continuum defining satisfaction. Coming to photo/graphic component, "attractiveness of the photos/graphics" was ranked first while arrangement of the photos/graphics was ranked fourth in satisfaction continuum. This result supports the fact that in this era of electronics intercommunication mobile apps can act as a bridging link between the farmers

and the extension agencies.

Study conducted by different researchers suggested that most respondents thought that mobile and internet could be a useful means of transferring agricultural information [6]. Through the present study also, it is quite evident that Indian farmers have started accepting contemporary means of communication. Thus, paving a new, easy and cost-effective path for information delivery to the farmers. For better utilization of the ICT tool by the farmers the government should make provisions of their training on the relevant topics related to ICT tool's usage and handling, as trainings has positive effect of the perception regarding the utilization of ICT tools [7]. This study could be replicated in different parts of the country to gain a clear understanding of farmers' perception regarding the modern tools of ICT.

**Application of research:** In this manuscript perception which is qualitative variable has been quantified through questionnaire method vis-a-viz mobile app 'Eco-Dairy', which the authors feel mandatory in digital revolution era.

**Research Category:** Veterinary Extension

#### Abbreviations:

EFDfPs: Environment Friendly Dairy Farming Practices

NCR: National Capital Region

ICT: Information and Communication Technology

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