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Attributes of a Mobile App as Perceived by Field Veterinarians: Case of Pig Master

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ABSTRACT

his study presents the perceived characteristics of pig master, a mobile app developed as a Continuing Veterinary Education (CVE) tool for veterinarians. The CVE programmes are being taken up by various institutions in India and it was observed that many of the field veterinarians are not able to attend the regular CVE programmes for obvious reasons, for whom ICT tools like mobile devices can be useful. In this context, veterinarians' perception of the mobile application on pig farming developed after the need assessment was assessed. The study was carried out with the veterinarians of the State Department of Animal Husbandry (SDAH), Andhra Pradesh. A sample of 91 field veterinarians was studied to whom Android Package on pig farming and questionnaires were sent. The 'pig master' mobile application was found to have good visual quality, more credible, effective in arousal of curiosity and was with high information coverage along with user-friendliness. Moreover, the app was also found with remarkable utility and helpful in decision-making as expressed by the majority of the field veterinarians. This study emphasizes the need of making CVE programmes effective by using digital media towards enrichment of knowledge of veterinarians.

INTRODUCTION

In India, pig farming is taken up mostly as a traditional caste occupation and by the socio-economically weaker sections of the society, whereas, status of livestock ownership at national level suggests that pig production is an economic activity dominated by marginal and smallholders (NSSO, 2019). Pig farming is one of the untapped livestock sectors and gaining momentum in India as a promising source of unconventional livestock farming and is attracting entrepreneurs from all dimensions. Moreover, the increase in per-capita consumption of pig meat at a rate of 1.40 per cent per annum in the last three decades (Bardhan, 2007) presenting good potential for commercial pig farming. Relevant and needy extension advisory services by the key stakeholders i.e. veterinary extension workers play vital role. Lack of veterinary services and need of development of comprehensive community-based vet care system to promote profitable pig production was reported by Sravan & Syed (2020).

Veterinary profession is continually evolving and there is wide gap between research and adoption in piggery enterprise of India (Seth et al., 2018) is necessitating the need of enrichment of the field veterinarians' the middle level extension professionals. Delivery of veterinary services is vital to animal health and productivity which depends on well trained and skilled animal health professionals (Endacott et al., 2020). Continuing Veterinary Education (CVE) aimed at increasing the professional competence

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of veterinarians by providing the latest information available in order to improve the quality of animal health services is being carried out by various state universities and national institutes in the form of trainings, seminars and workshops. However, many of the field veterinarians couldn't attend the continuing veterinary education (CVE) programmes due to various reasons like limited manpower availability and excess workload. Less manpower for veterinary services and extension activities was also reported by Jena et al., (2019) in their study on extension service delivery through mobile veterinary units in Odisha. To meet these situations, CVE rendering agencies can make use of methods like video conferencing, social networking, digital messages, mobile applications etc., for information dissemination (Barton et al., 2017). Moreover, Information and Communications Technology (ICT) can be an important useful media which complements with face-to-face communication in reaching a wider audience more rapidly at relatively low cost (FAO, 2017), whose potential need to be explored to bring location specific and commodity oriented transformative changes in the agriculture extension delivery system (Nain et al., 2019).

Among ICT tools, mobile based applications are gaining a huge popularity now-a-days, because of their easy access and faster dissemination of information. Kasch et al., (2016) in a study reported that veterinary students and the next generation of veterinary practitioners are using mobile devices to a great extent and suggested that new information tools through mobile devices may help veterinarians to seek and share information. To promote commercial pig farming and also to enrich the veterinarians, a mobile app 'pig master' was developed based on the information needs of field veterinarians of Andhra Pradesh and the effectiveness of mobile app was studied.

METHODOLOGY

The state of Andhra Pradesh (12°41' and 22°N latitude and 77° and 84°40'E longitude) was selected for the study which was carried out among the field veterinarians of State Department of Animal Husbandry, Andhra Pradesh using ex post-facto research design. Out of the total 1854 veterinarians working at the field level (Veterinary Assistant Surgeon and Assistant Director), a sample of 91 veterinarians were selected from the total thirteen districts of Andhra Pradesh @ of seven from each district through simple random sampling. Thus, multistage sampling was followed in selection of the study area and finally the respondents.

Sample size was arrived with Confidence level (95%) and Margin of error (10%).

$$Sample\ size = \frac{\frac{Z^2\ X\ p(1-p)}{e^2}}{1+(\frac{Z^2\ X\ p(1-p)}{e^2 N})}$$

N = population size e = Margin of error (percentage in decimal form) z = z-score

The selected veterinarians were sent google forms for prioritization of information needs in pig farming. Android mobile app pig master according to prioritised information needs was developed and made it available to the same group of field veterinarians through google play store and its effectiveness was studied through mailed questionnaires and google forms and data was analysed through suitable statistical tools.

RESULTS AND DISCUSSION

Social media utilisation pattern

Among the active members in usage of various online platforms, 94.51 per cent had membership in WhatsApp and it was the major communicating media used by field veterinarians with farmers as well as with other veterinarians (Table 1).

Table 1. Utilisation pattern of social media by veterinarians

Social media	Active member	Communication behaviour through social media	
	F (%)	Advice to farmer F (%)	Sharing information with veterinarians F (%)
WhatsApp	94.51	43.96	92.31
Facebook	76.92	30.77	68.13
YouTube	71.43	3.30	56.04
Telegram	60.44	05.49	32.97
Twitter	10.99	—	3.30
LinkedIn	10.99	—	—
Hike	02.20	—	—

WhatsApp messenger is a proprietary, cross platform of smart phones for sharing knowledge and information was also stated by Patel et al. (2020). The most popular social media in India were YouTube and Facebook followed by social app i.e. WhatsApp and hence, can be one among the outreach initiatives (Ahmed and Deepak, 2019).

Information needs of the veterinarians

Government extension officials were the dominant informants on the sustainable agricultural practices was reported by Niranjan et al., (2022) and also the field veterinarians help in enhancing the socio-economic status of livestock owners to whom designing of need based training modules may serve the purpose (Nanda et al., 2020). In this study, majority of the veterinarians expressed that breeding, feeding, ration formulation, project report making and marketing information were the areas they need updated information (Table 2) in scientific and sustainable pig production.

Effectiveness of mobile app among field veterinarians

Based on the findings of the study (Table 3 and 4) i.e. utilisation of mobile based social media for communication and also need of the information requirement in pig farming, it was planned to develop a mobile application. Pig master mobile app was developed as a Continuing Veterinary Education tool for the field veterinarians and was made available through google play store. Effectiveness of pig master mobile app among field veterinarians was assessed in terms of content quality and level of satisfaction.

Content quality of the pig master application as perceived by veterinarians

Content quality of the developed mobile app was assessed in terms of its relevance, preciseness, simplicity, visual quality and credibility of information (Table 3).

Table 2. Veterinarians according to information needs in piggery

Information needs on Pig farming	Required			Not required	
	Frequency	Percentage	Ranking	Frequency	Percentage
Breeds	86	94.51	II	05	05.49
Breeding management	87	95.60	I	04	04.40
Housing management	83	91.21	IV	08	08.79
Feeding management	87	95.60	I	04	04.40
Ration formulation	87	95.60	I	04	04.40
Health care and preventive measures	84	92.31	III	07	07.69
Project report making	87	95.60	I	04	04.40
Marketing information	87	95.60	I	04	04.40

Table 3. Content quality of the pig master application as perceived by veterinarians

Characteristics of content	Level	Percentage
Relevancy of the content	Most relevant	79.12
	Relevant	18.68
	Less relevant	02.20
Preciseness of content	Very precise	64.84
	Precise	35.16
	Less precise	–
Simplicity of content	Very simple	59.34
	Simple	40.66
	A bit difficult to understand	–
Visual quality	Very good	76.92
	Good	20.88
	Poor	02.20
Credibility of the information	More credible	60.44
	Credible	39.56
	Less credible	–

More than three fourth of the field veterinarians opined that content of the mobile app on pig farming was most relevant to the topic offered, whereas, two third of the veterinarians perceived that the information of the application was very precise. More than half of the veterinarians perceived that the information in the pig master mobile application was very simple to understand and about three fourth of the veterinarians expressed that the visual quality of the developed mobile app on pig farming was very good.

Majority (60%) of the veterinarians felt that the information provided was more credible. The app Pig Master was developed by a veterinarian after analysis of information needs and care was taken to include the information in an interesting way and hence the credible perception. Teza & Sharma (2016) in their study on quality of mobile apps stated that the quality of the mobile app was good on different aspects like holding the interests, visuals and content.

Satisfying and motivating characteristics of mobile application

The use of technology is an integral part of extension-client interaction and nowadays digital technologies can help fulfil the extension's mission of extending knowledge and effective engagement requires satisfaction (Barton et al., 2017). Hence, satisfaction with the usage of mobile application was assessed in terms of arousal of curiosity and interest, information coverage, presentation of information and user friendliness. More than half (56.04%) of the veterinarians opined that mobile app on pig farming developed was very effective in arousal of curiosity and interest in the information which results in satisfaction and enhanced learning (Table 4).

Majority (83.52%) of the veterinarians expressed that the developed application has good information coverage on pig farming and three fourth were highly satisfied with information in the mobile application and felt that the app will have high utility and helps in decision-making in the field conditions which is a motivating factor. It has been reported by Huang & Chueh (2020) that increased levels of perceived accuracy of information could increase satisfaction of the user, which would translate into a greater perceived behavioural intention to use the application. Johnson et al., (2021) also found that the 'VetCan' mobile application was highly functional, possessed pleasant aesthetics, and contained highly informational content. Use of Information and Communication Technology by various agricultural research institutions in the dissemination of information to the stakeholders is in vogue offering excellent possibilities for empowering stakeholders and establishing appropriate communication between research and extension system (Rathore and Sumanth, 2021).

Table 4. Satisfying and motivating characteristics of mobile application

Characteristics of content	Level	Percentage
Arousal of curiosity & interest	Very effective	56.04
	Effective	43.96
	Least effective	–
Information coverage	Good	83.52
	Moderate	16.48
	Poor	–
Presentation of information	Highly satisfied	75.82
	Moderately satisfied	19.78
	Needs improvement	04.40
Perceived utility	High utility	76.92
	Moderate utility	20.88
	Less utility	02.20
Information helpful	Very helpful	70.33
	Helpful	29.67
	Not helpful	–
Helps in decision-making	Highly helpful	53.85
	Moderately helpful	39.56
	Less helpful	06.59

CONCLUSION

Field veterinarians investigated in Andhra Pradesh were the active users of mobile application for extension advisory services, communication as well as knowledge enrichment media. Mobile applications with rich repositories of information can be valuable continuing veterinary education tools for the veterinarians in view of the ever changing needs of various stakeholders like farmers and consumers. The satisfying utility and applicability of pig master mobile app in this study reiterates the need to develop such ICT tools to provide authentic information. Characteristics of the developed mobile application was well understood by the field veterinarians, however, suggested improvement for more refined usage. In the coming years agencies concerned with continuing veterinary education and higher education institutions, can take into account the versatile social media tools like mobile apps for strengthening the veterinary profession by ensuring better and timely extension and advisory services to the farming community.

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