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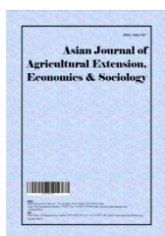
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Content Analysis of Farmers' KVK WhatsApp Group of Villupuram District in Tamil Nadu

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Authors' contributions

This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.

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ABSTRACT

The penetration and use of smart mobile phones with internet connectivity paved way to the increased use of social media tools and among them, WhatsApp is widely used by farmers for personal and group use. The efforts made by public institutions, development departments in reaching farmers and general public through WhatsApp has led to a creation of number of farmers WhatsApp groups for sharing of agricultural knowledge and information. The present study was carried out to analyse the content shared through KVK WhatsApp group. Viluppuram KVK WhatsApp group was purposively selected and the content shared was analyzed by non-participant observation method for 30 days. Data analyzed using frequency and percentage analysis. It was found that majority (83.97%) of the content shared by the farmers were related to agricultural activities. Farmers preferred to use text communication (37.18%) over other mode of messages. Farmers were actively engaged during morning hours in WhatsApp group due to their free time rather than later hours. Farmers opined that WhatsApp positively impacted them in obtaining timely information as well as personalized information.

Keywords: Agriculture; agro advisories; Krishi Vigyan Kendras (KVKs); WhatsApp; non-participant; content analysis.

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1. INTRODUCTION

In recent past, traditional technology transfer and extension information dissemination facing temporal, geographical and economical barriers. Nowadays, these are supplemented by extensive availability and convergence of communication technologies, digital networks, and telecommunications. It has resulted in remarkable capacity for knowledge and information delivery to the rural community. Furthermore, in India, only around 7% of agricultural families have access to technical assistance from appropriate institutional sources of information like extension personnel or Krishi Vigyan Kendras (KVKs) [1]. Mobile internet and smart phone penetration have gone up significantly in the rural areas accounting for half of all internet users by 2020 [2]. Localized and focused information and communication technologies (ICTs) use can help farmers improve productivity and double their income [3]. WhatsApp was a leading smartphone application, is rapidly gaining popularity among Indians, particularly in remote areas. It has been suggested that it would be used by agricultural and allied development agencies to expand the scope and reach of agricultural extension [4]. It provides a flexible method of communication, both in terms of time and location. The share of WhatsApp users in rural India has turned two times over the past year in the middle of declining data costs and boost in internet usage. WhatsApp's trump card has been its group messaging capability, which allows users to send and receive messages, pictures, and videos to people and groups at a lower cost than other multimedia messages (MMS)-based platforms on the market. WhatsApp, along with conventional over-the-internet short message services (SMS), has become a holy grail for reaching farmers with timely information [5]. Beyond regular conversations, adequate bits of knowledge may also be given through WhatsApp, allowing even the most reluctant and shy farmers to engage via encouragement, support and also allows stakeholders to give feedback [6]. WhatsApp allows farmers to interact in real time with peers, extension staff, and experts for taking appropriate decisions and doubt clarification. Hence, the present study was carried out to document the interaction processes, content shared in the group and its use by the farmer members of KVK Villupuram WhatsApp group.

2. METHODOLOGY

Content analysis deals with categorizing the agricultural information, interactions shared in the

selected WhatsApp group. Content can be analyzed in purposively selected KVK Villupuram WhatsApp group in a period of one month July 2021 considered as early samba season in the selected region. The major purpose of this KVK is to test and transfer agricultural innovations in order to reduce the gap between production and productivity, as well as to boost self-employment prospects in rural areas. KVK offers advice to farmers in the Villupuram district on all aspects of agriculture, horticulture, animal husbandry, and other related disciplines. KVK Villupuram is located in Tindivanam, Villupuram district of Tamil Nadu. Villupuram KVK WhatsApp group was created on 06.10.2017 which consists of 240 farmers, 10 scientists and 1 scholar as participants and the group was facilitated by KVK scientists to share agricultural knowledge and to promote interaction among farmers. Content was analyzed through the non-participant observation method in which data were obtained by the researcher without participating in the group activities. The subject matter covered by Villupuram KVK WhatsApp group were categorized into 12 key areas for content analysis such as crop production, crop protection, crop improvement, market information, agri news, advertisements, extension activities, agri machineries, cattle, poultry, fisheries and others which was covering all type of posted messages. Overall group content was read, analyzed, and placed by researcher into the respective categories. The total number of posts grouped under each category was calculated and tabulated to get a meaningful interpretation for content analysis. The collected data were analyzed using descriptive statistics like frequency and percentage.

3. RESULTS AND DISCUSSION

Content analysis was done for Villupuram KVK WhatsApp group and organised the content into categories in such a way that to draw meaningful conclusions. It mainly consists of 3.1, 3.2, 3.3 and 3.4 subsections which are discussed in detail in the following manner.

3.1 Pattern of Messages across Main Theme

KVK WhatsApp groups were created to serve the interests of farming community, to augment the advisory services provided on agriculture and allied sectors. The groups were professionally maintained by the scientists and progressive

farmers as a platform for constructive discussions, knowledge sharing and query addressal related to agriculture. The farmer members of Viluppuram KVK WhatsApp group shared a total of 312 messages over a period of one month. Majority of messages i.e., 262 messages that constitutes 83.97 per cent were related to agricultural practices, followed by messages related to animal husbandry and irrelevant messages contributed to 5.77 per cent and 10.26 per cent respectively. Since this WhatsApp group was created to reach out farming community and helps them in taking informal decisions. The members of the group are self-interested and oriented themselves towards getting information related to agricultural and allied sector. Most of the shared content within the group is confined to agricultural operations. Members don't prefer irrelevant messages because it is created and maintained for productive purposes, members are restricted to some extent for sharing unwanted messages in the group. The distribution of messages according to main theme depicted in the Fig. 1.

3.2 Pattern of Messages across the Different Subthemes

In agriculture theme out of 262 shared messages over one month, 86 messages were related to crop production (27.56%) aspects followed by agri news (13.78%), market information (13.14%) and crop protection (10.58%). These are the major areas where farmers felt the need of sharing information /content shared through WhatsApp group. Apart from this, meagre percentage of messages were regarding advertisements (6.09%), extension activities (5.77%), crop improvement (4.49%) and agri

machineries (2.24%). In animal husbandry sector, out of 18 messages, 2.88 per cent messages were related to cattle followed by poultry (1.92%) and fisheries (0.96%). Apart from these irrelevant messages contributes to 10.26 per cent which are unavoidable but ignorable. Since it was the start of early samba season, most of the posts were related to crop production aspects, specifically focusing on seed availability and production technology of crop varieties. The distribution of messages according to sub theme depicted in the Fig. 2.

3.3 Pattern of Queries across various Themes and Solutions

As it is evident from the Fig. 3, out of 48 queries, maximum queries were related to crop production (31.25%) and crop protection (31.25%) followed by crop improvement (10.42%), market information (8.33%). Rest of the queries were related to advertisements (4.17%), cattle (4.17%), poultry (4.17%) and agri news (2.08%). Farmers put forth majority of queries related to crop production and crop protection aspects, as it was the start of early samba season. Most of the queries were related to seed availability, pest and disease management of major crops like paddy, sugarcane, groundnut and pulses. Over the entire 48 queries, 36 queries (75.00%) were solved and 12 (25.00%) were left unsolved. Out of these 36 solved queries, 21(58.34%) and 15 (41.66%) queries were solved by scientists and fellow farmers respectively. One of the major benefits of social media is the possibility for greater involvement of users, because they can ask questions, share experiences and provide feedback using social media platforms [7].

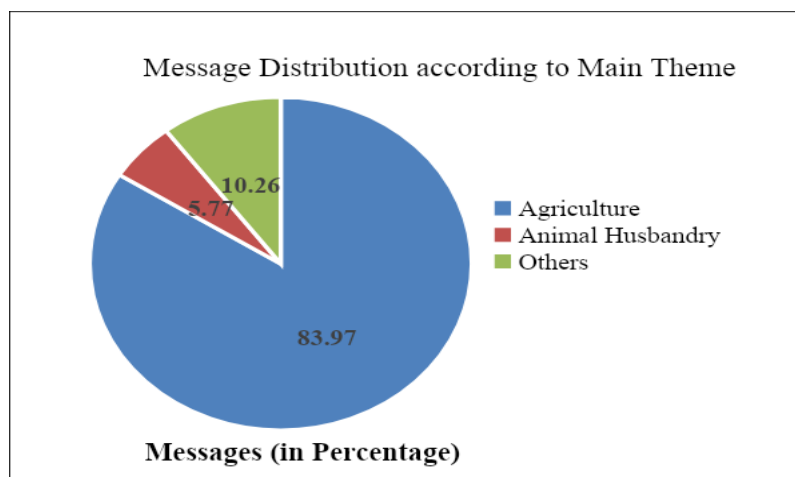


Fig. 1. Distribution of messages according to main theme

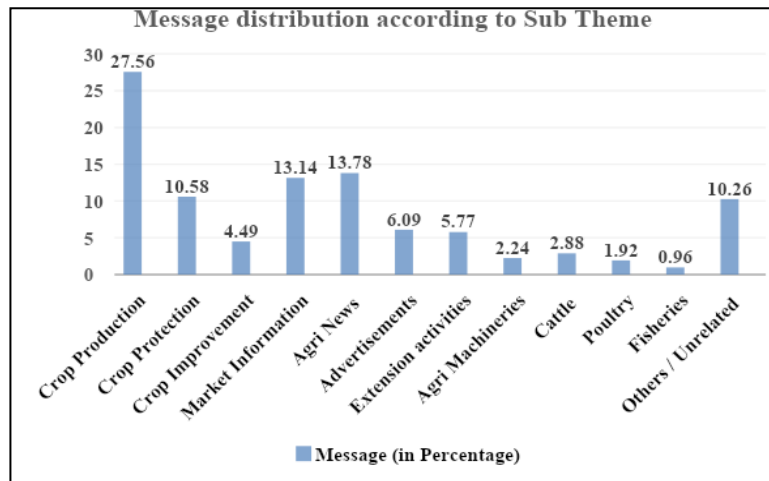


Fig. 2. Distribution of messages according to subtheme

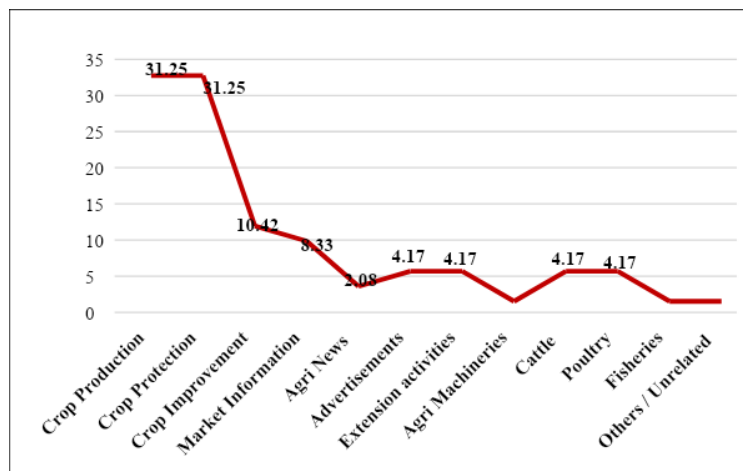


Fig. 3. Queries distribution according to subtheme

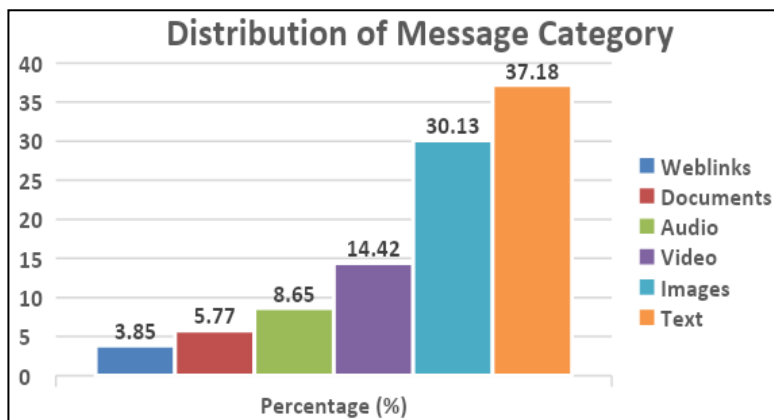


Fig. 4. Distribution of messages according to its type

3.4 Pattern of Messages across Different Message Category and Content Creation

As presented from Fig. 4, farmers favored text communication (37.18%) over pictures, video,

documents, audio, and weblinks. This might be due to farmer's preference for typing and forwarding messages as most of the members are functionally literate. In comparison to other alternatives, it was also clear that farmers rarely

utilized the weblink option (3.85%). This is due to lack of familiarity with WhatsApp's advanced technological features. Farmers were posting roughly similar numbers of messages with their own content (51.60%) and forwarded content (48.40%) in terms of content creation. This might be related to farmer's interest and enthusiastic behaviour to share information. The morning hours were shown to have higher (38.14%) message flow in the WhatsApp group than afternoon, evening, and night. This might be because farmers found morning hours to be useful in getting valuable and accurate information regarding weather which might be useful for planning irrigation schedule, harvesting, performing post-harvest practices like drying etc. and market price that could act as a deciding factor for marketing their farm produce.

4. CONCLUSION

WhatsApp groups are not only connecting farmers to peers and experts but also supports farmers in decision making. Farmers are regularly exchanging information and getting their queries solved by using WhatsApp. Agricultural and animal husbandry messages are the major content shared through this WhatsApp group. Majority of the content shared dealt with queries related to crop production, crop protection, crop improvement and marketing aspects. The shared content was knowledge intensive with a mix of personal farming experiences which helps and encourage fellow farmers to follow the better practices. Farmers favored text communication over the other means pictures, video, documents, audio, and weblinks. Farmers are becoming more digitally literate as a result of the social media enabled WhatsApp, which is helping them handle farming related issues effectively. In addition to WhatsApp other social media tools potential has to be exploited in a productive way to bring location-specific and crop-oriented improvements in the agricultural extension delivery system.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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