CONSTRAINTS FACED BY THE FARMERS IN ACCESSING SERVICES FROM DIGITAL AGRIPRENEURS

ABSTRACT

The agricultural sector has witnessed a transformative shift with the advent of digital technologies and the rise of digital Agripreneurs. These digital Agripreneurs act as intermediaries, connecting farmers to a range of essential services, including market information, weather forecasts, agricultural inputs, financial services, and advisory support. While these services have the potential to revolutionize farming practices and improve farmers' livelihoods, several constraints hinder their effective access and utilization. The study investigated the constraints encountered by farmers while accessing the services from Digital Agripreneurs in Karnataka. The data were collected among the farmers who were getting services related to crop health monitoring, inputs, weather forecast, and market-related information from these Digital Agripreneurs. The ex-post facto research design was employed; several kinds of constraints were gathered through a literature study and expert opinion. They were given in an interview schedule for the farmers to rank accordingly. The acquired data were analyzed, and ranks were assigned based on Rank-Based Quotient percentage. The major constraints faced by the farmers in accessing services provided by Digital Agripreneurs were Lack of practical evidence on the utility of information (98.71%), Fear of loss on adoption (92.64%), Lack of face-to-face contact to verify the credibility of information (86.29%), Lack of service centers in the vicinity (76.29) and so on. By overcoming these limitations, Digital Agripreneurs can empower farmers with valuable insights, tools, and technologies, leading to enhanced agricultural practices, productivity, and sustainable growth in the sector.

Keywords: Constraints, Digital Agripreneurs, Digital Agriculture services, and Farmers

INTRODUCTION

The agricultural sector is undergoing a significant transformation due to the integration of digital technologies, marking the advent of a new era characterized by precision farming and increased agricultural productivity. Farmers now require not only access to advanced technologies and financial resources but also crucial information to optimize their productivity, as emphasized by Viatte (2001). Information plays a pivotal role in human development and survival, and its impact heavily relies on timely and relevant

access to data, as pointed out by Lahiri et al. (2017). Unfortunately, rural communities face challenges in promptly obtaining essential information, which hampers their ability to make well-informed decisions, as highlighted by Mooventhan *et. al.,* (2016). In response to this agricultural revolution, Digital Agripreneurs have emerged as innovative intermediaries utilizing digital platforms to offer farmers a diverse range of services. These services encompass vital aspects such as market information, weather forecasts, agronomic advice, and even financial support. The rise of Digital Agripreneurs has the potential to revolutionize traditional farming practices, injecting efficiency, and precision into agricultural activities, ultimately leading to increased yields and enhanced rural economies. Moreover, it promises to uplift farmers' livelihoods by providing them with the necessary tools and knowledge to thrive in an increasingly technologically-driven world.

The integration of digital technologies through Digital Agripreneurs holds immense promise for revolutionizing agriculture, empowering farmers, and boosting rural economies. However, addressing the existing constraints will require concerted efforts from all stakeholders to ensure that the benefits of this technological transformation are accessible to all farmers, regardless of their location or scale of operation.

This article delves into the intricate challenges farmers encounter when utilizing services offered by Digital Agripreneurs. With the global population increasing, the agricultural sector faces mounting pressure to adopt smart, data-driven solutions that optimize resource utilization and productivity. By addressing the information gap and connecting farmers with modern agricultural practices, Digital Agripreneurs facilitate knowledge sharing and empower farmers to make informed choices. Nonetheless, several barriers hinder the seamless access and utilization of these services, curtailing their transformative impact on agriculture.

The integration of Digital Agripreneur services offers undeniable benefits, but the successful adoption by farmers requires a thorough understanding of the challenges they face. This article aims to illuminate the specific constraints experienced by farmers in diverse contexts, delving into their perspectives and real-life encounters. By identifying these hurdles, stakeholders can develop customized strategies to enhance digital inclusion in agriculture, narrow the digital divide, and empower farmers with the necessary tools to flourish in an ever-changing and interconnected agricultural environment. The article's objective is to shed light on the unique circumstances of farmers, uncovering barriers that hinder their access and

utilization of Digital Agripreneur services. These challenges may encompass limited access to digital infrastructure, inadequate digital literacy, high implementation costs, and concerns regarding data privacy and security. By addressing these issues, the agricultural industry can better harness the transformative potential of digital technologies, ultimately benefitting farmers, their productivity, and the overall sustainability of the sector.

METHODOLOGY

The current study focused on farmers who are utilizing services provided by Digital Agripreneurs in the state of Karnataka, India. Karnataka was purposively chosen as the study area due to its prominence in hosting a significant number of Digital Agriculture startups, as highlighted in the NAASCOM report of 2018. The research process involved two stages. Initially, a list of Digital Agri startups was compiled from secondary data sources. From this list, ten startups were purposively selected based on the establishment year using the classification mentioned by Anupam Anand and Saravanan, R. (2019). Subsequently, ten farmers were randomly chosen from each selected startup, resulting in a final sample size of 100 farmers. Ex post facto research design was employed, and data collection was carried out through personal interviews using a well-structured interview schedule specifically designed for this study. The data collected were then coded, classified, and tabulated. Statistical tools such as Frequency, Percentage, and Rank Based Quotient (RBQ) were employed to interpret the findings and draw conclusions. The data collected pertaining to the problems faced by the respondent was quantified in terms of the number of respondents who gave the rank. The ranks apprehended to the various problems as well as the frequency of respondents which are assigned by the respondents is utilized to calculate the Rank Based Quotient (RBQ). The formulas for the calculation of RBQ are as follows:

$$\text{RBQ} = \frac{\sum_{i=1}^{n}(Fi)(n+1-i)}{Nn} \times 100$$

Where,

F_i = Frequency of respondents for i^{th} rank

N = Number of respondents

n = Number of ranks

$\sum_{i=1}^{n}$ = it directs to sum multiple factors.

$\sum_{i=1}^{n}(Fi)(n+1-i)$ = $F_1 \times n + F_2 \times n - 1 + F_3 \times n - 2$ …….$F_n \times 1$

RESULT AND DISCUSSION

The findings from Table 1 revealed several constraints faced by farmers when accessing services provided by Digital Agripreneurs. The most significant constraint, ranking first with a percentage of 93, is the lack of practical evidence demonstrating the usefulness of the information provided. This lack of evidence makes farmers skeptical about the effectiveness of digital services. The second major constraint, ranking second at 90 percent, is the fear of potential losses associated with adopting new practices or technologies. Farmers are concerned about investing in unfamiliar technologies without concrete assurance of positive outcomes.

The third constraint, with 86 percent of respondents expressing this concern, is the lack of face-to-face contact to verify the credibility of the information received. Farmers feel uncertain and unsafe about adopting new technologies without the ability to directly interact with the Digital Agripreneurs, especially when significant investments are involved. This constraint highlights the need for trust-building measures and credible communication channels.

Another constraint identified is the lack of service centers in close proximity to farmers, ranking fourth with a percentage of 76.29. This forces farmers to visit the headquarters every time they have queries or require assistance, which can be inconvenient. To address this, Digital Agripreneurs should consider opening consultation centers in nearby locations, facilitating easy access for farmers. The fifth constraint, ranking at 68.36 per cent, is the issue of hiked internet charges. The cost of accessing digital services is perceived as a barrier for farmers, limiting their ability to utilize and benefit from the available platforms. Digital Agripreneurs should explore strategies to make Internet services more affordable and accessible for farmers. Another constraint, ranking sixth at 60.64 per cent, is the lack of region-specific information provided by Digital Agripreneurs. Farmers require information and guidance tailored to their specific regions and local conditions. Providing context-specific information would enhance the relevance and usefulness of the services offered. The seventh constraint, with a percentage of 59.43, is the farmers' lack of skills in using digital platforms. Farmers may need training and support to effectively navigate and utilize the available digital tools and services. Digital Agripreneurs should consider providing training programs and resources to improve farmers' digital literacy.

Lack of subsidies ranked eighth at 56.43 per cent, indicating that farmers perceive the need for financial support from the government to afford the technology and machinery

offered by Digital Agripreneurs. Government initiatives to provide subsidies or financial incentives would help alleviate this constraint. Other constraints mentioned include inaccurate information (ranked ninth at 46.29 per cent), lack of individual farmer attention (ranked tenth at 44.14 per cent), high cost of service (ranked eleventh at 43.3 per cent), lack of subject matter knowledge among Agripreneurs (ranked twelfth at 41.86 per cent), complicated subscription processes (ranked thirteenth at 40.93 per cent), and Digital Agripreneurs being too busy to respond (ranked fourteenth at 34.93 per cent). Each of these constraints presents specific challenges that Digital Agripreneurs should address to improve the accessibility and effectiveness of their services.

Table 1. Constraints faced by the farmers in accessing services by Digital Agripreneurs

SL. No	Constraints	RBQ Value	Rank
1	Lack of practical evidence on the utility of information	98.71	I
2	Fear of loss on adoption	92.64	II
3	Lack of face-to-face contact to verify the credibility of information	86.29	III
4	Lack of service centers in the vicinity	76.29	IV
5	Hiked internet charges	68.36	V
6	Lack of region-specific information	60.64	VI
7	Lack of skill in operating the Digital Platform	59.43	VII
8	Lack of subsidies	56.43	VIII
9	Inaccurate information	46.93	IX
10	Individual farmer attention is not provided	44.14	X
11	High cost for services	43.43	XI
12	Lack of subject matter knowledge among Digital Agripreneurs	41.86	XII
13	Very complicated steps when buying a subscription	40.93	XIII
14	Digital Agripreneurs are too busy to respond to the farmer's query	34.93	XIV

CONCLUSION

Farmers face various constraints while accessing services provided by Digital Agripreneurs. These challenges encompass a range of issues, including the lack of practical evidence

demonstrating the utility of information, fear of potential losses, limited face-to-face contact to verify credibility, absence of nearby service centers, high internet charges, lack of region-specific information, insufficient digital skills, absence of subsidies, inaccurate information, inadequate individual attention, high service costs, insufficient subject matter knowledge among Agripreneurs, complicated subscription processes, and limited responsiveness.

Addressing these constraints is crucial to enhancing farmers' access to and adoption of digital services in agriculture. Digital Agripreneurs should focus on building trust through evidence-based information and transparent communication. The provision of region-specific information, training programs to improve farmers' digital literacy, and the establishment of consultation centers in proximity to farmers can significantly enhance accessibility. Collaboration with governments to offer subsidies and financial incentives would help alleviate cost-related challenges. By overcoming these constraints, Digital Agripreneurs can effectively empower farmers with valuable insights, tools, and technologies, ultimately leading to improved agricultural practices, increased productivity, and sustainable growth in the agricultural sector.

REFERENCES

Abu, N., Bukhari, W., Ong, C., Kassim, A., Izzuddin, T., Sukhaimie. M., Norasikin, M., & Rasid, A. (2022). Internet of Things Applications in Precision Agriculture: A review. Journal of Robotics and Control (JRC), 3(3), 338-347.

Anupam Anand. And Saravanan, R. (2019) Agritech Startups: The Ray of Hope in Indian Agriculture, Discussion Paper 10, MANAGE-Centre for Agricultural Extension Innovations, Reforms and Agripreneurship, National Institute for Agricultural Extension Management (MANAGE), Hyderabad, India

Burman, R.R., and Singh, S.K. (2004). The scope and opportunities of recent advances in information and communication technologies in extension. Indian Res. J. Ext. Edu.,4(3), 5-9.

Ikuemonisan, E., & Akinbola, A. (2021). Agripreneurship and Agricultural Labour Market: Agripreneurial Intensions among Undergraduate Students in Ondo state, NigeriaAgripreneurship and Agricultural Labour Market: Agripreneurial Intensions among Undergraduate Students in Ondo State, Nigeria. European Journal of Agriculture and Food Sciences, 3(3), 76-85

Klerkx, L., Jakku, E., & Labarthe, P. (2019, 2019/12/01/). A review of social science on digital agriculture, smart farming and agriculture 4.0: New contributions and a future research agenda. NJAS – Wageningen Journal of Life Sciences, 90-91, 100315. https://doi.org/https://doi.org/10.1016/j.njas.2019.100315

Lahiri, B; Anurag, S; Chauhan, J.K.; Sangam, A.K., and Sangam, S.M. (2017). Mobile phone use efficiency of Garo tribal farmers in north-eastern Himalayan region of India. Indian Res. J. Ext. Edu., 17 (1) : 24-31.

Mooventhan, P.; Kadin, K.S., and Karpagam, C. (2015). Tribal farmers' perceived constraints in the usage of modern multimedia communication technology gadgets. J. Ext. Edu., 27(4).

Nambisan, S. (2017). Digital entrepreneurship: Toward a digital technology perspective of entrepreneurship. Entrepreneurship theory and practice, 41(6), 1029-1055.

NASSCOM (2018b) Agritech In India – Maxing India Farm Output. Retrieved from http://www.nasscom.in/knowledge-centre/publications/agritech-india-%E2%80%93-maxing-india-farm-output

Viatte, G. (2001). Adopting technologies for sustainable farming systems: an OECD perspective. In adoption of technologies for sustainable farming systems Wageningen workshop proceedings. (Vol. 14, pp. 14-23). Paris, France: OECD