



International Journal of Agriculture and Food Science

ISSN Print: 2664-844X

ISSN Online: 2664-8458

NAAS Rating (2026): 4.97

IJAFA 2026; 8(10): 835-838

www.agriculturaljournals.com

Received: 26-07-2026

Accepted: 08-09-2026

Published: 20-10-2026

Wagh Yogita Babanrao

M.Sc. (Agri.) Scholar,
Department of Agricultural
Extension Education, College
of Agriculture, Vasantao Naik
Marathwada Krishi
Vidyapeeth (VNMKV),
Parbhani, Maharashtra, India

Pravin S. Kapse

Professor, Department of
Agricultural Extension
Education, College of
Agriculture, VNMKV,
Parbhani, Maharashtra, India.

Rajesh P. Kadam

Professor and Head,
Department of Agricultural
Extension Education, College
of Agriculture, VNMKV,
Parbhani, Maharashtra, India

Anuradha S. Lad

Assistant Professor,
Department of Agricultural
Extension Education, College
of Agriculture, VNMKV,
Parbhani, Maharashtra, India

S. S. More

Professor and Head,
Department of Agricultural
Economics, College of
Agriculture, VNMKV,
Parbhani, Maharashtra, India

Corresponding Author:

Wagh Yogita Babanrao

M.Sc. (Agri.) Scholar,
Department of Agricultural
Extension Education,
College of Agriculture,
Vasantao Naik
Marathwada Krishi
Vidyapeeth (VNMKV),
Parbhani, Maharashtra,
India

Relationship between farmer profile and utility perception of AgriStack among beneficiaries in the Marathwada region of Maharashtra

Wagh Yogita Babanrao¹, Pravin S. Kapse², Rajesh P. Kadam³, Anuradha S. Lad⁴, S. S. More⁵

DOI: <https://www.doi.org/10.33545/2664844X.2026.v8.i10k.2096>

ABSTRACT

The study aimed to examine the relationship between the profile of beneficiary farmers and their utility perception of AgriStack. The study was conducted in three talukas (Parbhani, Manvat and Purna) of Parbhani district in the Marathwada region of Maharashtra. Ten AgriStack beneficiary farmers were randomly selected from each of twelve villages, giving a sample of 120 respondents. Data were collected through personal interviews using a pre-tested structured interview schedule. Data were analysed using frequency, percentage, mean, standard deviation and Karl Pearson's correlation coefficient. Most respondents were middle-aged (58.33%), had secondary education (44.17%), medium-sized families (67.50%), marginal to small land holdings (69.17%) and medium annual income (83.33%). A majority had medium extension contact (74.17%), innovativeness (80.00%), network connectivity (71.67%) and techno-savviness (74.17%). Most respondents (83.33%) had a medium overall utility perception. Innovativeness ($r = 0.689$), internet connectivity ($r = 0.544$) and techno-savviness ($r = 0.423$) showed a positive and highly significant relationship with utility perception, and extension contact ($r = 0.220$) a positive and significant one. Age, education, farming experience and land holding showed a positive non-significant relationship, and family size, annual income and social participation a negative non-significant one.

Keywords: AgriStack, Utility perception, Farmer profile, Correlation, Marathwada

1. Introduction

AgriStack is a digital public infrastructure initiative developed to create a unified digital ecosystem for the agricultural sector in India. It brings farmer-related and agricultural information onto a common digital platform so that farmers can access government schemes, subsidies, crop-related information and other services more easily. The Farmer ID created under AgriStack identifies each farmer digitally and links the farmer with these services. In Maharashtra, related digital services such as the E-Peek Pahani mobile application are used for recording crop information.

Digital tools are now widely used to deliver weather, market, advisory and scheme information to farmers, and studies from several states show that their use varies with personal and socio-economic characteristics (Kumar *et al.*, 2023; Naik, 2018; Sontakke *et al.*, 2025) [1, 2, 3]. How useful a platform such as AgriStack is perceived to be shapes whether farmers register, keep using the services and trust the system. The relationship between the farmer's profile and perceived utility of AgriStack has not been studied in Marathwada. The present study was therefore undertaken with the following objectives:

1. To study the profile of the respondents.
2. To delineate the relationship between the profile of the respondents and their utility perception of AgriStack.

2. Materials and methods

2.1 Locale of the study

The study was conducted in Parbhani district, in the central part of the Marathwada region of Maharashtra. The district lies between 18°45' and 20°10' N latitude and 76°13' and 77°39' E longitude and covers 6,250.58 km² with a population of 1.836 million. It has nine talukas (Parbhani, Jintur, Gangakhed, Pathri, Purna, Palam, Sailu, Manwat and Sonpeth) and 841 villages, and is predominantly agricultural, with 68.24 per cent rural population. The district also hosts Vasantao Naik Marathwada Krishi Vidyapeeth, which advances agricultural education and research.

2.2 Sampling and selection of respondents

Random sampling was used at each stage. Three talukas, namely Parbhani, Manvat and Purna, were selected from Parbhani district. Four villages were selected from each taluka, giving twelve villages: Paralgavhan, Mirkhel, Signapur and Pokharni (Parbhani); Kinhola, Kolha, Somthana and Tad Borgaon (Manvat); and Balsa, Phulkalas, Sirkals and Makhani (Purna). Ten AgriStack beneficiary farmers were selected randomly from each village, making a total sample of 120 respondents ($12 \times 10 = 120$).

2.3 Research design

An ex-post facto research design was used, because the phenomenon had already occurred and the researcher had no direct control over the independent variables.

2.4 Interview schedule and data collection

A structured interview schedule was prepared in line with the objectives. It covered eleven independent variables (age, education, family size, farming experience, land holding, annual family income, social participation, extension contact, innovativeness, network connectivity and techno-savviness) and one dependent variable, the utility perception of AgriStack. It also recorded the constraints faced by respondents and their suggestions for improving AgriStack services. The schedule was pre-tested with 15 beneficiaries in a non-sampled area and modified in light of the pre-test. Data were collected by personal interview between May and June. The investigator explained the purpose of the study to each respondent, built rapport and recorded responses item by item.

3. Results and discussion

3.1 Profile of the respondents

Table 1 shows that the largest group of respondents (58.33%) was middle-aged (36 to 63 years), followed by the old (25.00%) and young (16.67%) groups. Middle-aged farmers are actively engaged in farming and are more likely to use digital services to obtain information and avail services through AgriStack. Similar findings were reported by Gade (2011), Yadav *et al.* (2013), Chaudhary (2014) and Ninama (2015). Two-thirds of the respondents (67.50%) belonged to medium-sized families, in line with Rao (2013), Pawar (2019) [7] and Bhosale (2021). Secondary education was the most common level (44.17%), followed by higher secondary (21.67%); 17.50 per cent were illiterate and 7.50 per cent were graduates. Some formal education is needed to handle digital platforms such as AgriStack. Ainlawar (2012) [8] reported a similar pattern. Most respondents (64.17%) had medium farming experience, consistent with Patel *et al.* (2017) and

2.5 Measurement of variables

Age, family size, farming experience, land holding and annual income were measured in their natural units and classified using the mean $\pm$ standard deviation or equal-interval method, or the Government of Maharashtra norms for land holding. Education was scored from 1 (illiterate) to 5 (college level and above). Social participation was measured using the scale of Supe (2007) [4], extension contact using the procedure of Nirban (2004) [5], and innovativeness using the scale of Moulik (1965) as modified by Natikar (2019) [6]. Network connectivity and techno-savviness were measured with schedules developed for the study.

Utility perception was defined as the degree to which AgriStack, including the E-Peek Pahari application, is perceived as useful by farmers. It was measured through 17 statements on which respondents indicated agree, partially agree or disagree. Total scores were used to classify respondents into low, medium and high categories. Constraints were recorded through close-ended questions and suggestions through open-ended questions; responses were quantified and ranked by percentage.

2.6 Statistical analysis

Responses were transferred to a master sheet, coded and tabulated. Frequency, percentage, arithmetic mean and standard deviation were used to describe the data, and Karl Pearson's coefficient of correlation (*r*) was used to find the relationship between the independent variables and utility perception.

Mukati (2016). Most respondents held marginal (35.00%) or small (34.17%) land, together 69.17 per cent, so the sample was largely small-scale farmers, as found by Jambhale (2015) and Shelke (2020) [9]. A large majority (83.33%) had medium annual income, and none had low income, in agreement with Pathak *et al.* (2022) [10]. On social participation, 80.00 per cent were members of one organisation, 16.67 per cent of more than one and 3.33 per cent were office holders, similar to Prajapati (2019) and Roy *et al.* (2013). Medium extension contact (74.17%) may be due to the network of extension agencies in the area (Zinzade, 2024; Pawar, 2022) [11]. Medium innovativeness (80.00%), good network connectivity (71.67%) and medium techno-savviness (74.17%) probably reflect that the respondents were smartphone users (Zinzade, 2024; Teza, 2016; Pawar, 2019; Devkule, 2017) [11, 7, 12].

Table 1. Distribution of respondents according to their profile (*N* = 120)

Variable / Category	Frequency	Percentage
Age		
Young (up to 35 years)	20	16.67
Middle (36 to 63 years)	70	58.33
Old (64 years and above)	30	25.00
Family size		
Small (up to 3 members)	29	24.17
Medium (4 to 7 members)	81	67.50
Large (8 and above)	10	8.33
Education		
Illiterate	21	17.50
Primary (1st to 4th)	11	9.17
Secondary (5th to 10th)	53	44.17
Higher secondary (11th to 12th)	26	21.67
Graduate and above	9	7.50
Farming experience		

(continued on next page)

Variable / Category	Frequency	Percentage
Low (up to 11 years)	24	20.00
Medium (12 to 36 years)	77	64.17
High (37 years and above)	19	15.83
Land holding		
Marginal (up to 1 ha)	42	35.00
Small (1.1 to 2 ha)	41	34.17
Semi-medium (2.1 to 4 ha)	15	12.50
Medium (4.1 to 10 ha)	13	10.83
Large (above 10 ha)	9	7.50
Annual income		
Low (up to Rs. 24,107)	0	0.00
Medium (Rs. 24,108 to Rs. 4,49,558)	100	83.33
High (Rs. 4,49,559 and above)	20	16.67
Social participation		
No participation	0	0.00
Member of one organisation	96	80.00
Member of more than one organisation	20	16.67
Office holder	4	3.33
Extension contact		
Low (up to 9)	25	20.83
Medium (10 to 20)	89	74.17
High (21 and above)	6	5.00
Innovativeness		
Low (up to 30)	24	20.00
Medium (31 to 36)	96	80.00
High (37 and above)	0	0.00
Network connectivity		
Poor (up to 20)	29	24.17
Good (21 to 26)	86	71.67
Excellent (27 and above)	5	4.17
Techno-savviness		
Low (up to 23)	21	17.50
Medium (24 to 28)	89	74.17
High (29 and above)	10	8.33

3.2 Relationship between profile and utility perception

Table 2. Correlation between profile of respondents and utility perception of AgriStack

Sr. No.	Independent variable	Correlation coefficient (r)
1	Age	0.021 NS
2	Family size	-0.179 NS
3	Education	0.028 NS
4	Farming experience	0.108 NS
5	Land holding	0.099 NS
6	Annual income	-0.150 NS
7	Social participation	-0.067 NS
8	Extension contact	0.220 *
9	Innovativeness	0.689 **
10	Network / internet connectivity	0.544 **
11	Techno-savviness	0.423 **

* Significant at 0.05 level; ** significant at 0.01 level; NS: non-significant.

Innovativeness ($r = 0.689$), internet connectivity ($r = 0.544$) and techno-savviness ($r = 0.423$) had a positive and highly significant relationship with utility perception, and extension contact ($r = 0.220$) a positive and significant one. The other variables were non-significant (Table 2).

Innovative farmers are venturesome and adopt new ICT tools such as AgriStack easily and efficiently, so they perceive more utility (Lad, 2014; Pawar, 2019) [7]. Good network connectivity is needed to download the application, log in and register for benefits. Techno-

savvy farmers handle the platform with more confidence (Devkule, 2017) [12]. Farmers with more extension contact are exposed to new ideas and technologies, and extension personnel create awareness about handling online platforms and portals, which is consistent with Zinzade *et al.* (2024) [11]. The findings suggest that increasing extension contact encourages farmers to adopt modern agricultural technology.

Age, education, farming experience and land holding showed a positive but non-significant relationship, and family size, annual income and social participation a negative non-significant one. This suggests that perceived utility of AgriStack did not depend on these characteristics: farmers of different ages, income levels and family sizes had similar needs from, and access to, AgriStack services. Similar results were reported by Ainlawar (2012) [8], Pawar (2020), Zinzade *et al.* (2024) [11], Shelke (2020) [9], Pathak *et al.* (2022) [10] and Prajapati (2019).

4. Conclusion

Most beneficiaries were middle-aged, had secondary education, small holdings and medium income, with medium levels of social participation, extension contact, innovativeness, network connectivity and techno-savviness. Overall utility perception of AgriStack was medium for most (83.33%). Innovativeness, internet connectivity, techno-savviness and extension contact were significantly and positively related to utility perception, while the other seven profile variables showed no significant relationship.

Efforts to raise perceived utility should therefore focus on building farmers' digital skills, ensuring reliable connectivity and strengthening extension contact and guidance, rather than targeting particular age, income or land-holding groups.

References

1. Kumar S, Singh M, Singh P, Rohit K. Utilization pattern of ICT tools by paddy growers in Uttar Pradesh. *Indian J Ext Educ.* 2023;59(2):135-137.
2. Naik BJ. A study on ICT tools usage by the farmers in Anantapur district of Andhra Pradesh [master's thesis]. Guntur: Acharya N.G. Ranga Agricultural University; 2018.
3. Sontakke NB, Deshmukh PR, Kadam RP, Kapse PS, Pathrikar DT. Utilization pattern of ICT tools among cotton growers in Marathwada region. *Int J Adv Biochem Res.* 2025;SP-9(9):844-847.
4. Supe SV. *Measurement Techniques in Social Sciences*. Udaipur: Agrotech Publishing Academy; 2007.
5. Nirban AJ. Analysis of Agricultural Produce Market Committees in Konkan and Western Maharashtra with Reference to Their Potential Role in Agricultural Marketing Extension. Ph.D. Thesis, Mahatma Phule Krishi Vidyapeeth, Rahuri, Maharashtra, India. 2004.
6. Jamanal SK, Natikar KV, Halakatti SV. A Study on Farmers Knowledge about Crop Insurance Schemes in Northern Karnataka. *International Journal of Environment and Climate Change.* 2019;9(12):691-700.
7. Pawar HY. Utility perception of AgroTech VNMKV mobile app by the users (Master's thesis). Vasantrao Naik Marathwada Krishi Vidyapeeth, Parbhani, Maharashtra, India. 2019.
8. Ainlawar. Utility perception of farmers about Red Kandhari cattle by the rearers [Unpublished Master's thesis]. Vasantrao Naik Marathwada Krishi Vidyapeeth, Parbhani, Maharashtra. 2012.
9. Shelke SV. Utility perception of Krishi Patrika by its subscribers (Master's thesis). Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola, Maharashtra, India. 2020.
10. Pathak A, Sharma A. Correlates of utility perception of agricultural information by farmer readers. *Indian Research Journal of Extension Education.* 2022;22(5):295-299.
11. Zinzade PS, Kapse PS, Puri SG, Kadam RP. Correlates of utility perception of E-Peek Pahani Mobile App by user farmers. *International Journal of Agriculture Extension and Social Development.* 2024;7(2):06-09.
12. Devkule. Farmers' attitude towards Kisan mobile phone advisory services [Unpublished Master's thesis]. Mahatma Phule Krishi Vidyapeeth, Rahuri. 2017.
13. Balu D, Kavaskar M, Santha G. Constraints faced by the farm youth in utilization of information and communication technology (ICT) tools. *Indian J Ext Educ.* 2018;8(4):14-8.
14. AS, Deshmukh PR. Utility perception of mass media by farm women. *International Journal of Extension Education.* 2014;10:76-79.
15. Sontakke NB, Deshmukh PR, Kadam RP, Kapse PS, Pathrikar DT. Profile and constraints faced by the cotton growers towards utilization pattern of ICT tools in the Marathwada region of Maharashtra. *Int J Agric Food Sci.* 2025;7(10):30-34.

How to cite this article: Wagh YB, Kapse PS, Kadam RP, Lad AS, More SS. Relationship between farmer profile and utility perception of AgriStack among beneficiaries in the Marathwada region of Maharashtra. *International Journal of Agriculture and Food Science.* 2026;8(10):835-838. doi: <https://www.doi.org/10.33545/2664844X.2026.v8.i10k.2096>