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Cornell-Based Insights: Analyzing Farmers' Attitudes towards Scientific Backyard Poultry Farming Using the Guttman Scale

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HIGHLIGHTS

- The article used the Cornell Technique of the Guttman Scale, that effectively captures the varying levels of attitude of farmers towards scientific backyard poultry farming.
- By applying the Guttman Scale's cumulative and hierarchical structure, a refined tool for assessing attitude, ensuring reflection of various dimensions, was constructed.
- The scale offers a reliable method for identifying key areas where interventions can improve farmers' practices, enhancing both productivity and sustainability in backyard poultry farming.

ARTICLE INFO

Keywords: Scientific backyard poultry farming, Scalogram, Guttman scale, Cornell technique, Cutting points.

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Research ethics statement(s):
Informed consent of the participants

ABSTRACT

The study focused on developing a Guttman Scale using the Cornell technique of the scalogram approach to assess farmers' attitudes towards scientific backyard poultry farming. While the Likert-type summated rating scale is commonly used in social science research, this paper explained the application of the Guttman scale. Out of 70 items selected, 55 statements were analysed, with 42 retained after ensuring a reproducibility coefficient of 0.85 or higher. The final scale demonstrated a high reproducibility coefficient of 0.92, reflecting strong accuracy in measuring the attitude of farmers towards scientific poultry farming. The scale's reliability and validity were confirmed through the split-half method, Cronbach's alpha, and content validity assessments. The final scale can be administered using a five-point continuum, ranging from highly unfavourable to highly favourable. This tool offers a valuable platform for assessing farmers' attitudes towards scientific backyard poultry farming. Following the scalogram approach, this cumulative scale will also serve as a useful reference for researchers in the social sciences seeking to develop similar measurement tools.

INTRODUCTION

Backyard poultry enterprise is especially beneficial for landless or economically disadvantaged families due to its low initial investment and high returns (Chakrabarti et al., 2014). Importantly, the sector aligns closely with the government's vision of doubling farmers' income by offering an additional and reliable source of earnings. Landes et al., (2004) reported that around 15 per cent of India's total poultry output comes from backyard systems, highlighting its significant contribution to rural livelihoods. As part of India's broader rural poultry production system, it complements other agricultural activities and strengthens household resilience against economic shocks (Sarwar et al., 2015; Weyuma et al., 2015). Barua & Yoshimura (1997) noted that poultry farming has become a routine practice in villages, creating a sustainable habit of income generation. Together with livestock farming, the poultry sector makes substantial contributions to India's economy (Nath et al., 2012), providing a pathway for small farmers to enhance their

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economic prospects. Furthermore, Mehta et al., (2003) observed that while crop production grows at a modest rate of 1.5–2 per cent annually, the poultry sector, including backyard systems, is growing at a much faster pace of 8–10% per year.

Despite its potential, the adoption of scientific practices in backyard poultry farming remains limited. Understanding farmers' attitudes towards these practices is critical for designing effective extension interventions. This study aims to create and validate a specialized scale for assessing the attitude of farmers toward scientific backyard poultry farming. Various scaling techniques are used for developing the scales on different aspects. The Likert scale, a widely used tool, is often affected by central tendency bias, where respondents may refrain from selecting extreme options, resulting in distorted outcomes. It can also be susceptible to acquiescence bias, where individuals have a tendency to agree with statements, regardless of their actual opinions. In addition, the Thurstone scale, while more sophisticated in its approach by presenting statements and asking respondents to evaluate them on a scale of agreement, can be complex to develop and administer. It also requires a substantial amount of preliminary work to ensure the scale is valid and reliable. In contrast, the Guttman scale introduced by Louis Guttman in 1944, takes a different approach by ensuring that if a respondent agrees with a specific statement, they will also agree with all previous statements in a sequential and cumulative order. The author created a scalogram analysis for tackling the issue of scaling public opinion and attitudes during the war to support research on the morale and associated facets of the US Army. Similar to other scales, it consists of a list of assertions with checkboxes for items that the respondent agrees or disagrees with. This scale's unique characteristic is the way its statements build up to a cumulative series. Since it was initially created at Cornell for instructional purposes, it was referred as the Cornell technique for scalogram analysis in order to differentiate it from a number of competing tools. Guttman scales are advantageous because a single response can be used to predict responses to all items on the scale; therefore, the Guttman scale is deterministic, items are "implicational" or "scalable," which defines them. This hierarchical method minimizes some of the biases associated with Likert and Thurstone scales and can provide a more nuanced understanding of scale.

METHODOLOGY

In the present study, construct was assessed as attitude of farmers towards scientific backyard poultry farming under major identified dimensions (construct) as livelihood aspects, nutritional aspects, income aspects, social aspects, technical and management aspects. A tentative list of 70 statements was enlisted keeping in view the suitability of statements to the study area based on review of literature, consultation with the CARI scientists and experts. The statements collected were cautiously edited by following the 14 informal criteria suggested by Edwards (1948). Thus, a total of 55 statements were taken out of 70 statements. When utilizing the Cornell technique of the Guttman scale, item analysis is a crucial step in creating a valid and trustworthy scale. The purpose of item analysis is to identify and eliminate items that do not form an internally consistent scale (Spector, 1997). We assumed that each statement is to have only two response categories such as agree and disagree, we assigned scores of 1 and 0 to the two response categories respectively. The statements were then administered to 30 experts in the field of veterinary sciences. Respondents were asked to respond to each statement in terms of their agreement or disagreement with it. Score was obtained for each respondent t by summing the scores assigned to the response categories being selected. Respondents were then arranged in rank order of their scores from high to low score. Using the Cornell technique, a table was constructed with one column for each response categories for each statement and one row for each respondent for 55 statements with two possible responses to each statement for 30 respondents. This would be a mean table with 110 columns and 30 rows. Starting with the respondent having highest score, the responses of each respondent to each statement were recorded by placing a cross mark in the appropriate cell of Table 1. On completion, the table provides a record of all available data. One can easily approximate the response of each item based solely on an individual's rank in the hierarchy in the Guttman scale. Since perfect reproducibility is not to be expected in practice, it becomes a matter of some importance to measure the degree of reproducibility present for any given set of responses to attitude statement. This is accomplished by setting cutting points for the response categories of each statement. Cutting point marks that place in the rank order of the respondent, where the most common response separates from one category to the other. Guttman offers two rules to be used in locating cutting points. The first is that the cutting point should be located so as to minimize error. The second is that no category should have more errors in it, than non-errors. For each statement, cutting points were placed, and errors were calculated for each of the two categories of 42 statements based on the coefficient of reproducibility e" 0.85. The sum of the errors for each category of overall statements as 97 and a total of (42) (30) = 1260 responses were calculated. The proportion of error is therefore 97/1260= 0.07, subtracting this value from unity gives us 1-0.07=0.92, Guttman called this value as coefficient of reproducibility. It indicated the 92 per cent accuracy with which 1260 responses to the 42 statements can be reproduced from the total scores.

$$CR = 1 - \frac{\text{Number of errors}}{\text{Total responses}}$$

Where, CR = Coefficient of reproducibility

RESULTS

The coefficient of reproducibility for each statement was calculated for the final selection of items by following the procedure discussed above. Items or statements were selected on the basis coefficient of reproducibility value equal to or greater than 0.85. We found that 13 statements had having reproducibility coefficient below 0.85. Therefore, 42 statements were retained in the final scale for assessment of the attitude of farmers towards scientific backyard poultry farming (Table 2).

Standardisation of scale-reliability and validity

The capacity of the testing instrument to provide a measurement score that is reliable, stable, and accurate when used

Table 1. Table showing responses and cutting points of various respondents for the statements (after eliminating statements having coefficient of reproducibility less than 0.85)

State-ments	Respon-dent	11	21	23	25	9	7	20	16	30	8	12	17	24	22	27	10	28	29	18	19	14	15	5	6	13	3	1	2	26	4	*f*	Error	Cr of State-ments
1	1	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	X		x	x	x	29	3	
	0																											x				1	0	0.90
2	1	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x		x	x	x	26	3	
	0																					x						x				4	1	0.86
3	1	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x				x												16	1	0.96
	0																x	x	x		x	x	x	x	x	x	x	x	x	x	x	14	0	
4	1	x	x	x	x																											4	0	1.00
	0					x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	26	0	
5	1	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		29	0	1.00
	0																														x	1	0	
6	1	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x		x		x					23	2	0.90
	0												x											x		x		x	x	x	x	7	1	
7	1	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		29	0	1.00
	0																														x	1	0	
8	1	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		29	0	1.00
	0																														x	1	0	
9	1	x	x	x	x	x	x	x	x	x		x	x	x			x	x	x					x								16	1	0.86
	0										x				x	x				x	x	x	x		x	x	x	x	x	x	x	14	3	
10	1	x	x	x	x	x	x	x	x	x	x	x	x				x											x				14	1	0.86
	0													x	x	x		x	x	x	x	x	x	x	x	x	x		x	x	x	16	3	
11	1	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	29	4	0.86
	0																										x					1	0	
12	1	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x		x	x	x	28	3	
	0																							x				x				2	1	0.86
13	1	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x	29	3	
	0																											x				1	0	0.90
14	1	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x	x		2	0.93
	0																												x			1	0	
15	1	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x	29	1	0.96
	0																													x		1	0	
16	1	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x		x	x	x	28	3	0.86
	0																			x								x				2	1	
17	1	x	x	x	x	x	x	x	x	x	x		x		x	x	x	x	x	x	x	x	x	x	x	x	x					24	0	0.93
	0											x		x														x	x	x	x	6	2	
18	1	x	x	x	x		x	x	x		x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x					23	0	0.90
	0					x				x							x											x	x	x	x	7	3	
19	1	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x				x	x	x	x	x	x	x						22	0	0.90
	0																x	x	x								x	x	x	x	x	8	3	
20	1	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	29	4	0.86
	0																										x					1	0	
21	1	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		29	0	1.00
	0																														x	1	0	
22	1	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x				27	0	
	0																												x	x	x	3	0	1.00
23	1	x	x	x	x	x	x	x	x	x		x	x	x								x		x								14	2	0.90
	0										x				x	x	x	x	x	x	x		x		x	x	x	x	x	x	x	16	1	
24	1	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	29	4	0.86
	0																										x					1	0	
25	1	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x					26	0	
	0																											x	x	x	x	4	0	1.00
26	1	x	x	x	x	x	x	x	x	x	x		x		x	x	x	x	x					x		x						18	2	0.86
	0											x		x						x	x	x	x		x		x	x	x	x	x	12	2	
27	1	x	x	x	x	x	x	x	x	x	x		x	x	x			x	x	x	x	x	x	x	x	x	x	x				24	0	0.90
	0											x				x	x												x	x	x	6	3	

Table 1 contd....

State-ments	Respon-dent	11	21	23	25	9	7	20	16	30	8	12	17	24	22	27	10	28	29	18	19	14	15	5	6	13	3	1	2	26	4	*f*	Error	Cr of State-ments
28	1	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x		x								21	0	0.93
	0																				x		x		x	x	x	x	x	x	x	9	2	
29	1	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x		x					24	1	0.93
	0												x													x		x	x	x	x	6	1	
30	1	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x		x		x					23	0	0.90
	0												x											x		x		x	x	x	x	7	3	
31	1	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x		x	x				25	0	0.93
	0												x													x			x	x	x	5	2	
32	1	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x		x		x	x				24	3	0.86
	0											x												x		x			x	x	x	6	1	
33	1	x	x	x	x	x	x	x	x	x		x	x	x		x	x	x	x		x		x									18	0	0.86
	0										x				x					x		x		x	x	x	x	x	x	x	12	4	
34	1	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x				27	0	1.00
	0																												x	x	x	3	0	
35	1	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x					26	0	
	0																											x	x	x	x	4	0	1.00
36	1	x	x	x	x	x	x	x		x	x	x		x	x	x	x	x	x	x	x	x	x	x	x		x	x				24	2	
	0								x				x													x			x	x	x	6	2	0.86
37	1	x	x	x	x	x	x	x	x	x			x																			10	1	0.96
	0										x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	20	0	
38	1	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x				x	x	x	x	x	x							21	0	
	0																x	x	x							x	x	x	x	x	x	9	3	0.90
39	1	x	x	x	x	x	x	x	x	x	x		x	x	x	x		x	x	x	x	x	x	x	x	x		x	x			25	2	0.86
	0											x					x										x			x	x	5	2	
40	1	x	x	x	x	x	x	x	x		x	x	x	x	x	x																14	0	
	0									x							x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	16	1	0.96
41	1	x	x	x	x	x	x	x	x		x	x	x	x	x	x																14	0	
	0									x							x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	16	1	0.96
42	1	x	x	x	x	x	x	x	x			x	x				x															11	1	
	0									x	x			x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	19	2	0.90
Total Score		42	42	42	42	40	40	39	38	37	36	36	36	36	34	34	32	32	32	31	31	31	31	30	30	24	24	17	14	12	11	1260	97	

Table 2. List of final items in scale along with their coefficient of reproducibility for each item

S.No.	Statements	CR*
	Livelihood Aspects	
1.	I believe that scientific backyard poultry farming can significantly improve their overall livelihood.	0.90
2.	Scientific backyard poultry farming has provided me with an alternative livelihood, especially during agricultural off-seasons.	0.86
3.	By adopting scientific methods in scientific backyard poultry farming, I can better manage risks and uncertainties in their livelihood.	0.96
4.	Scientific backyard poultry farming allows me to diversify my income sources and reduce financial vulnerability.	1.00
5.	I am skeptical about the long-term sustainability of scientific backyard poultry farming due to external factors like market prices.	1.00
6.	I perceive scientific backyard poultry farming as a reliable and relatively low-investment source of additional income.	0.90
	Nutrition Aspects	
7.	Scientific backyard poultry farming enables me to produce fresh, nutrient-rich eggs and meat for family consumption.	1.00
8.	Scientific backyard poultry farming enhances food security by supplementing diets with affordable animal-based protein.	1.00
9.	I feel that Scientific backyard poultry farming has a positive impact on my children's health, improving their growth and development.	0.86
10.	Scientific backyard poultry farming ensures that I can have access to healthy and safe poultry products, free from harmful chemicals.	0.86
11.	I believe that scientific backyard poultry farming contributes to improved nutrition by providing essential micronutrients such as Fe, Zn and Vitamin B12 through eggs and meat.	0.86
12.	Through scientific backyard poultry farming, farmers have access to eggs and poultry meat as daily sources of high-quality protein.	0.86

Table 2 contd...

S.No.	Statements	CR*
13.	I appreciate the role of scientific backyard poultry farming in diversifying food sources, reducing dependency on single crops for nutrition.	0.90
14.	I am motivated to improve poultry nutrition practices, such as proper feeding & disease management, to increase productivity.	0.93
15.	I believe that the nutrition obtained from poultry products can help fight micronutrient deficiencies in rural communities.	0.86
	Income Aspects	
16.	I believe that scientific backyard poultry farming can generate consistent income if managed properly.	0.86
17.	Scientific backyard poultry farming helps me create new income streams, especially for women & young people in rural areas.	0.93
18.	Income from scientific backyard poultry farming is sometime used to meet essential family expenses like healthcare, education, and daily needs.	0.90
19.	I often report higher profit margins with scientific backyard poultry farming practices compared to traditional backyard poultry farming methods.	0.90
20.	Scientific backyard poultry farming opens opportunities for me to access better market prices for poultry products, resulting in higher profits.	0.86
21.	I am increasingly investing in scientific backyard poultry farming as a reliable source of supplemental income, especially in economically unstable regions.	1.00
22.	I believe that with higher technical knowledge of poultry farming tend to achieve better income outcomes compared to those without such knowledge.	1.00
23.	I believe that I might use income generated from scientific backyard poultry farming to reinvest in other aspects of their farming activities, ensuring long-term sustainability.	0.90
24.	I am able to sell backyard poultry products to local markets or even engage in small-scale poultry product processing for additional profit.	0.86
25	I sometime use the profits from Scientific backyard poultry farming to support other businesses or community development initiatives.	1.00
	Social Aspects	
26.	Scientific backyard poultry farming promotes social cohesion by creating opportunities for rural community collaboration and knowledge exchange.	0.86
27.	Scientific backyard poultry farming empowers women, giving them a means of economic independence and decision-making power in the household.	0.90
28.	I gain social recognition for being innovative and adopting modern agricultural practices when engaged in scientific backyard poultry farming.	0.93
29.	Scientific backyard poultry farming fosters social inclusion by enabling marginalized groups, such as landless labourers, to engage in income-generating activities.	0.96
30.	The success of scientific backyard poultry farming is often seen as a source of pride, contributing to improved self-esteem among farmers.	0.90
31.	In some communities, scientific backyard poultry farming has become a social norm, with neighbours helping each other in training, processing, and marketing poultry products.	0.93
32.	Scientific backyard poultry farming enhances rural social structures by creating a network of farmers who share resources, including feeds, vaccines, and technical knowledge.	0.86
33.	I often share scientific backyard poultry farming practices & experiences with neighbours, improving the overall productivity of the community.	0.86
	Technical and management aspects	
34.	I recognize the importance of adopting modern poultry breeds and scientific feeding techniques to optimize growth and production in scientific backyard poultry farming.	1.00
35.	Effective management practices such as proper housing, ventilation, and sanitation are considered crucial to maintaining a healthy and productive flock.	1.00
36.	I emphasize the need for regular health monitoring and vaccination schedules to prevent diseases & ensure poultry well-being.	0.86
37.	I believe that keeping accurate records of feed consumption, growth rates, and production levels helps in better decision-making and farm efficiency.	0.96
38.	Adopting biosecurity measures, such as disinfecting equipment and controlling farm access, is considered essential to reduce the risk of disease outbreaks.	0.90
39.	Technical support, such as access to veterinarians or agricultural extension services, is highly valued by me for trouble-shooting health and management issues.	0.86
40.	The application of sustainable practices, such as utilizing backyard poultry waste as fertilizer, is seen as an important part of long-term farm management and environmental responsibility.	0.96
41.	Proper financial management, including budgeting for feed, healthcare, and infrastructure, is seen as key to ensuring profitability in scientific backyard poultry farming.	0.96
42.	I believe that continuous training & education on new scientific backyard poultry management techniques help them improve productivity, reduce costs, and increase farm sustainability.	0.90

*CR = Coefficient of Reproducibility

repeatedly using the same instrument is known as reliability. It aids in determining how uniform the scale's objects are. Utilizing the split half method, which divides a scale into two halves depending on even and odd numbers of statements, the reliability of the current scale was determined. Between odd and even scores, the Pearson product moment correlation was 0.70. This coefficient represents the split half scale reliability. To adjust the split half reliability in to full test reliability, Spearman-Brown (1910) prophecy formula was used which is as follows:

$$R = \frac{2r}{1+r} = \frac{2\times 0.7}{1+0.7} = 0.82$$

Where, R= Reliability coefficient of the whole scale
r = Estimated correlation between two halves (Pearson r)

The whole test reliability was found to be 0.82 and found to be significant at 1 per cent level of significance as used by other authors (Singh et al., 2018; Shruti et al., 2019). Split half method is a popular method of assessing reliability of a test primarily for the advantage of single administration of the test and use of one sample. It aids in determining how uniform the scale's objects are. Cronbach's alpha was also used to get more stability and accuracy with the following formula:

$$\alpha_{standardized} = \frac{Kr}{[1+(K-1)r]}$$

Where, K = Number of items in scale
r = Mean of the K (K-1)/2 non-redundant correlation coefficients

The value of Cronbach's alpha calculated and found to be 0.845 which means scale is consistent in measurement. Similar reliability testing methods were used by various authors (Verma et al., 2024; Shruti et al., 2022; Kumar et al., 2021). Validity means ability of an instrument to measure what one intended to measure. The developed scale was tested for content validity. A panel of experts determined the content validity of the scale, which is defined as the representativeness or sample adequacy of the content, substance, matter, and themes of a measuring instrument (Kerlinger, 1987). For measuring content validity, statements were given to six experts, and a four-point scale was used.

DISCUSSION

The final 42 statements with CR value greater than 0.85 were retained. The scale is important as it captures the multifaceted benefits of scientific backyard poultry farming, including its role in providing an alternative livelihood, especially during off-seasons, and reducing financial risk through income diversification. It highlights improved nutrition and food security from access to fresh, nutrient-rich poultry products, contributing to better family health. The scale also reflects how poultry farming supports consistent income generation, empowers rural women and youth, and enables reinvestment into other farming activities. Socially, it promotes collaboration, inclusion, and recognition within communities. For example, scientific backyard poultry farming promotes social cohesion through forming self-help groups and encouraging group training programmes, etc. Additionally, it emphasizes the importance of technical knowledge, effective management, and sustainable practices for improved productivity and long-term success. Validity, reliability, and practicability become the three major dimensions to check for a measurement tool. Fair degree of validity depicted that judges agree that the specific statement (item) has content validity. Not only should the scale measure what it intends to measure, but it should also be done consistently when used among different samples. The reliability of the current scale was determined using split-half method. Between odd and even scores, the Pearson product-moment correlation was 0.70. Reliability scores of 0.845 showed a correlation between the statements, confirming the internal consistency.

CONCLUSION

By focusing on key dimensions such as livelihood, nutritional, income aspects, etc. the scale captures the unique aspects of scientific backyard poultry farming. This scale can be effectively used by researchers, policymakers, and extension workers to monitor progress, and design targeted interventions. The rigorous process, including item analysis, reproducibility checks, and reliability and validity testing, ensured the scale's precision and relevance. This tailored tool addresses gaps in existing attitude measures, providing a valuable resource for enhancing the understanding and management of backyard poultry farming and its productivity. Since the reliability and validity value of the scale shows the accuracy and consistency of the results, this scale can be used to assess the attitude of farmers towards scientific backyard poultry farming in a similar situation beyond the study area with suitable modifications.

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