OPEN ACCESS
Journal of Loomingulisus ja Innovatsioon
Vol. 3 No. 3. June 2026, pp. 334-345
DOI. 10.70177/innovatsioon.v3i3.4289
Research Article

Barriers to Sorghum Commodity Adoption: Evidence from Farmer Responses in Beber District, Indonesia

Aswin Muhammad Pasha [1], Siti Aisyah [2], Tety Suciaty [3]
[1] Agribusiness Study Program, Faculty of Agriculture, Swadaya Mountain Jati University, Jalan Pemuda No. 32, Cirebon, Indonesia
[2] Agribusiness Study Program, Faculty of Agriculture, Swadaya Mountain Jati University, Jalan Pemuda No. 32, Cirebon, Indonesia
[3] Agribusiness Study Program, Faculty of Agriculture, Swadaya Mountain Jati University, Jalan Pemuda No. 32, Cirebon, Indonesia

Corresponding Author:

Aswin Muhammad Pasha,
Department of Electrical Engineering Vocational Education, Faculty of Teacher Training and Education, Kabul University. No. 13, Street No. 2, Lane No 1, Opposite of Shams London School, Kart-e Char, District 3, Kabul City, Afghanistan
Email: aswinpasha@gmail.com

Article Info
Received: January 12, 2026
Revised: March 15, 2026
Accepted: April 10, 2026
Online Version: June 28, 2026

Abstract
Sorghum (Sorghum bicolor L. Moench) is a commodity with potential to support diversification, food security, and sustainable agribusiness development in Indonesia. However, the success of its development is very influenced by the response of farmers as the main agribusiness. This research aims to analyze farmers' response indices to sorghum commodities, measuring index responses on each dimension, as well as identifying the dimensions that are a priority for improvement. The research used a survey method with a qualitative approach. quantitative in the village of Beber, Cirebon Regency. Primary data were obtained through questionnaires and analyzed using index analysis. response based on cognitive, affective, and conative dimensions. The results of the study show that the farmer response reached 66%, which indicates a positive response to sorghum commodities. Partially, the Cognitive dimension obtained an index of 57%, Affective 65%, and Conative 75%, so that the Cognitive dimension becomes the priority main thing to be improved. The novelty of this research lies in the measurement index of comprehensive farmer response through total index and partial index and determination of priority dimensions as a base compilation strategy development commodities sorghum. Implications.

Keywords: Commodities sorghum, Cognitive dimension, Farmer response

© 2026 by the author(s)
This article is an open-access article distributed under the terms and conditions of the Creative Commons Attribution-ShareAlike 4.0 International (CC BY SA) license (https://creativecommons.org/licenses/by-sa/4.0/).

Journal Homepage https://research.adra.ac.id/index.php/innovatsioon
How to cite: Pasha, A. M., Aisyah, S., & Suciaty, T. (2026). Barriers to Sorghum Commodity Adoption: Evidence from Farmer Responses in Beber District, Indonesia. *Journal of Loomingulisus ja Innovatsioon, 3*(3), 334–345. https://doi.org/10.70177/innovatsioon.v3i3.4289
Published by: Yayasan Adra Karima Hubbi

INTRODUCTION

Sorghum (Sorghum bicolor L. Moench) is one of the strategic cereal commodities that has great potential to support diversification, food security, and sustainable agribusiness development in Indonesia (Janah & Barokah, 2025). Compared with other crops, food In addition to sorghum has the advantage of high tolerance to drought, the ability to adapt to marginal land, relatively low water requirements, as well as economic value that can be developed through various food, feed, and raw material products. Industrial standards (Palang et al., 2025). Thus, the level of development of sorghum in Indonesia is still relatively low compared to the potential available power. One of the factors that influences this condition is the diversity of farmers' responses to sorghum commodities, which is reflected in the level of knowledge, perception, and tendency of farmers to accept and develop commodities (Gelu et al., 2021). According to Roger (2007), acceptance of agricultural innovation is very influenced by the process of knowledge formation, persuasion, decision making, implementation, and confirmation experienced by the candidate users of the innovation. Therefore, understanding farmers' responses is a very important aspect in formulating effective and sustainable commodity development strategies for sorghum production worldwide (FAO, 2010; Rogers, 2007).

Village Beber, District Beber, Cirebon Regency, Province West Java, Indonesia is one of the regions that has potential for sorghum Because supported by appropriate agroecological conditions and the existence of development programs for alternative food crops (Mahardika, 2024). However, the successful development of sorghum is not only determined by suitability source Power nature, but also by level farmer's response as the main factor in the agribusiness system (Handayana et al., 2014). Positive farmer responses will increase the chances of adopting innovations, accelerate farming development, as well as encourage the formation of agribusiness-empowered sorghum competitiveness. On the other hand, a poor response can hinder the adoption process. Technology and development commodities (Wijayanti et al., 2015). Therefore, analysis of farmer responses to sorghum commodities in the village of Beber become it is important to identify the level of farmer acceptance and formulate policies and mentoring programs that are appropriate to the needs of farmers. The results of this study are expected to be the basis for developing more effective sorghum strategy development through strengthening farmer capacity, extension, partnerships, agribusiness, and increasing market access so that support sustainable agricultural development (Schiffman et al., 2019; Widodo, Triastono, et al., 2023).

Some relevant previous studies , such as: 1) Wijayanti et al. (2015) conclude farmers' response to innovation cultivation sorghum influenced by the dimensions of perception and motivation in the District Srandakan Bantul Regency ; 2) Widodo, Triastono, et al. (2023) explain that in Yogyakarta, farmers showed lack of perception profitable related to processing , profits , sales , and marketing of sorghum, on the other hand , farmers in Central Java have a better perception , especially about technique sorghum cultivation , processing , prices, and profits ; 3) Palang et al. (Palang et al., 2025) that response as motivation, perception , and behavior of farmers have an influence significant to development sorghum in the village Sago , District Adonara, East Flores Regency ; 4) Gelu et al. (2021) conclude farmers' perceptions of farming sorghum is classified in the " very good" category with an average score of 89.6% in the Village Wuakerong Subdistrict Nagawutung Regency Lembata; and 5) (Goran et al., 2021) stated that the variables of non-formal education and the number Family responsibilities have a significant influence on farmers' responses in cultivation and utilization sorghum in di Village Kawalelo Demon Pagong District East Flores Regency , East Nusa Tenggara.

Reviewing the previous research above, it is still there is several research gap that needs to be studied further. Conceptually, most previous studies have focused more on the discussion of farmers' perceptions of farming sorghum, a response to innovation cultivation, or factors that influence farmers' responses, so that farmers' responses to sorghum commodities are not yet

described more comprehensively from an agribusiness perspective, which includes aspects of cultivation, economic value, market opportunities, and prospects for its development. In methodological aspects, previous research generally only describes perceptions or analysis of the connection between variables that influence farmer responses, while research that measures a comprehensive farmer response index, both through the total response and partial index response based on cognitive, affective, and conative dimensions, and determines the dimensions that become a priority to be fixed, is still very little found. In addition, empirically, no research has yet been found that specifically studies farmers' responses to sorghum commodities in the village of Beber, Cirebon Regency, even though the area has quite large potential for developing sorghum as a commodity alternative to support food diversification. Therefore, this research can fill conceptual, methodological, and empirical gaps (Miles, 2017) and, at the same time, give scientific contributions to the development strategy of sorghum that is more effective and based on real conditions at the farmer level.

This research aims to fill the three research gaps, and aims to 1) find out the index of farmers towards commodities sorghum, 2) know the index of farmers' responses in each dimension, and 3) know the dimensions of farmers' responses to commodities sorghum is prioritized for improvement. By filling in gap research, then the novelty has been obtained, which is presented in the Discussion sub-chapter.

Social research: responses of individuals towards an object or innovation generally consist of on three component main, namely cognitive, affective, and conative components. cognitive related to the level of knowledge or understanding an individual to an object; affective is related to the attitude or feeling an individual has towards the object, whereas conative is related to behavioral tendencies or intentions for individuals to act on the object in question. The third component together forms a person's response to a certain phenomenon (Fishbein & Ajzen, 1975; Saifuddin Azwar, 2017).

In the context development agricultural commodities, farmers' response to new commodities is very important Because influence level of acceptance and likelihood of adoption. The level of farmers' knowledge regarding benefits, cultivation techniques, as well as the economic potential of commodities can affect farmers' attitudes towards the introduced commodities. Positive attitudes can further encourage the emergence of the intention or tendency of farmers' behavior to try or develop commodities in their business activities (Rogers, 2007).

Based on the description above, farmers' response to sorghum commodities in this study was analyzed through three main dimensions, namely Cognitive (farmers' knowledge about sorghum), Affective (farmers' attitudes towards sorghum), and Conative (farmers' behavioral intentions to plant or develop sorghum). These three dimensions become indicators to measure the level of farmers' response to the commodity sorghum, so that the research framework can be presented.

RESEARCH METHOD

Research Design

This research uses a quantitative descriptive approach survey. This approach was chosen to obtain a factual picture about farmers' responses to sorghum commodities based on three-dimensional approach descriptive approach because this research is not intended to test causal connections between variables, but rather only to describe systematically and objectively a single variable, namely farmers' responses to sorghum commodities (Sugiyono, 2019).

Research Target/Subject

The population in this study is all farmers in the village of Beber, District Beber, Cirebon Regency, Province West Java, Indonesia, which is registered as member group farmers. Based on village monograph data and data collection group farmer local, total population of identified farmers is 201 farmers. Determination amount sample based on opinion Sugiyono (2019), which explains that for quantitative research, amount The sample size can range from 30 to 500 respondents. The sampling technique is random. simple to farmers who fulfill several criteria, namely: 1) registered as active members of a farmer group in the village of Beber; and 2) control or work on farming land in the village area of Beber, District Beber.

Research Procedure

Operational definition of a variable is a way to describe techniques or methods for measuring research variables so that they are easy to understand and carry out in the field (Sugiyono, 2019). The variable in this study is the farmer's response to the commodity. Sorghum is a latent variable, so the objects measured are its dimensions or indicators (Ghozali & Fuad, 2005). This variable is formed by three dimensions, namely cognitive, affective, and conative (Fishbein & Ajzen, 1975; Saifuddin Azwar, 2017). The operational definition in this study is as follows.

Instruments, and Data Collection Techniques

Primary data collection was carried out by technique direct survey and interviews to farmers based on the questionnaire that had been prepared previously (door-to-door method). The questionnaire containing statement indicator Likert scale (closed statements), such as the response dimensions of cognitive, affective, and conative attitudes of farmers towards the commodity sorghum. In addition, open questions also include: identity and sociodemographic characteristics of respondents (age, education level), formal education, number of family members, area ownership, and farming experience.

Data Analysis Technique

Secondary data collection is carried out using techniques documentation and studies libraries from various source relevant scientific institutions and references, such as: 1) Monograph Data Village and Profile Institutional Group Farmers from the Village Office Beber; 2) Regional, topographical, and climate statistical data from the Cirebon Regency BPS ; 3) Dissemination Program and Policy Report Help Sorghum Bioguma from the Cirebon Regency Agriculture Service and the Directorate Cereals of the Indonesian Ministry of Agriculture; and 4) National scientific journals accredited and library reference related theory adoption innovation and agribusiness sorghum. The data that has been collected is then summarized, sorted, analyzed, and interpreted so that it can be used as materials for compiling research reports.

RESULTS AND DISCUSSION

response index is very important and is used to determine farmers' assessment of commodities. sorghum overall (Anggraini et al., 2015; Syarifudin & Wachdijono, 2026) . The index value makes it easier for researchers to understand how farmers respond to commodities. sorghum (Syarifudin & Wachdijono, 2026) . In addition, the farmer response index also helps the local Agriculture Service and/or investors in conducting evaluations of the adoption program commodities such as sorghum in general and specifically based on assessments of the dimensions prioritized for repair (Adinda et al., 2024; Zamrud, 2025).

There are two types of index figures, namely the total farmer response index and the partial farmer response index (Anggraini et al., 2015). The total farmer response index is

calculated on the main variable (Y), while the partial farmer response index is calculated for each dimension (Y1, Y2, Y3). The total farmer response index is calculated by comparing the total score of respondents' answers with the maximum score obtained, then converted into a percentage (%). The formula for calculating the total farmer response index (IRPt) is:

$$IRPt = \frac{\text{Actual total score}}{\text{Maximum score}} \times 100\% \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (1)$$

Information:

IRPt = Total farmer response index

Actual total score = score obtained from observation results

Maximum score = score obtained from the number of samples x the number of indicators x the highest scale (5) (Syarifudin & Wachdijono, 2026).

Response index numbers for sorghum commodities (after the actual total scores were converted to percentages) are presented in Table 1.

Table 1total farmer response index figures

No.	Index (%)	Category response
1	81 – 100	Very responsive
2	61 – 80	Response
3	41 – 60	Just respond
4	21 – 40	No response
5	0 – 20	Very unresponsive

Source: Adopting several references from (Anggraini et al., 2015; Prasetyo et al., 2023; Wachdijono et al., 2024)

The actual total score on each farmer response dimension or partial farmer response index number is calculated by comparing the actual total score on each dimension with the maximum score on each dimension, then converted into a percentage (%), to determine the assessment/perception category of each farmer response dimension. The formula for calculating the partial farmer response index (IRPp) is:

$$IRPp = \frac{\text{Actual total score for each dimension}}{\text{Maximum score for each dimension}} \times 100\% \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (2)$$

Information:

IRPp = Partial farmer response index

Actual total score for each dimension = score obtained from observation results on the dimension

The maximum score for each dimension = the score obtained from the number of samples x the number of indicators for each dimension x the highest scale (5) (Syarifudin & Wachdijono, 2026).

Based on the number of dimensions of farmer responses to the commodity sorghum, the partial farmer response index (IRPp) has three types whose scores may vary. Interpretation of the partial farmer response index (IRPp) or scores for each dimension can be seen in Table 2.

Table 2: Interpretation of scores/values for each dimension

No.	**Index (%)**	**Category response**
1	81 – 100	Very good
2	61 – 80	Good
3	41 – 60	Pretty good
4	21 – 40	Not good
5	0 – 20	Very bad

Source: Adopting several references from (Anggraini et al., 2015; Kharisma et al., 2023; Prasetyo et al., 2023).

The farmer response index is used to determine the assessment of farmers' responses to each dimension. Response in more detailed (Pangastuti, 2026; Syarifudin & Wachdijono, 2026). Through this index, researchers can identify dimensions that are considered good (to be maintained) and those that are not. Dimensions with poor scores/values will be prioritized for improvement. (Adinda et al., 2024; Zamrud, 2025) .

Table 4 shows that the index farmers' response to commodity sorghum (index total response) is 0.66 or 66% of the maximum total score (4,500). The magnitude number index shows that farmers have a "response" to commodity sorghum in the "moderately positive response" category, meaning that farmers in the village Beber already have a positive response to accept or adopt commodity sorghum. In addition, it can be interpreted that commodity sorghum has been accepted as one of the commodities that have the potential to be developed in system agribusiness in the village Beber (research location). However, the level of acceptance is not optimal, because there is still an opportunity or space to improve the knowledge, attitudes, and behavioral tendencies of farmers towards commodity sorghum, namely by 34%.

In view of agribusiness, the value index of the farmer response of 66% also shows that commodity sorghum has a large potential for development as an alternative in support of diversification of food and improvement of farmer income. A positive response rate is an important form of social capital because the successful development of commodities is not only determined by technical aspects of cultivation, but also by the level of acceptance by the main perpetrators, namely farmers. Without a positive response from farmers, agricultural innovation, such as the development of commodity sorghum, tends to be difficult to adopt by farmers and also difficult to develop sustainably.

Argumentation: This is in line with Diffusion of Innovations theory, which explains that acceptance of an innovation, such as commodity sorghum, is a process that develops gradually, starting from recognition, formation of perception, evaluation, to the decision to accept and implement the innovation. Therefore, the farmer's response index of 66% can be interpreted as that the process of accepting sorghum is at a good level, but still needs strengthening to become more stable and sustainable acceptance (Rogers, 2007).

This result is also in line with findings several previous studies , such as: 1) Handayani & Febriamansyah (2019) who concluded that overall , the farmers' response to the Farmers' Business Insurance Program Rice (RFI) shows relative attitude neutral , but some farmer categories that show attitude more positive cognitive and affective , especially for those who have decided to continue participation in the Farming Business Insurance Program in Tanah Datar, West Sumatra Province , Indonesia; 2) Wijayanti (2015) conclude that farmers' response to innovation cultivation and utilization sorghum showing better and better farmers' perceptions and motivations regarding innovation the higher the response of farmers in Bantul Regency , Bantul Province Central Java ; and 3) Widodo, Triastono, et al. (2023) mention that a number of areas that have a positive perception of commodities sorghum is Central Java , especially in the sub- district Wuryantoro and Pracimantoro , as well as Yogyakarta, especially in Wonosari and Karangmojo.

Table 4 shows the index of partial farmer responses on each dimension, which can be mentioned in succession, namely Y1 (57%), Y2 (65%), and Y3 (75%). The highest partial response index is Y3 (75%), and the lowest is Y1 (57%), so the farmer's response index is in the "good" and "sufficient" categories. The highest partial response index is the Y3 dimension (Conative) at 75%, meaning that farmers have a positive response. Better action on commodities sorghum compared to dimension Y1 (cognitive). In addition, the high Y3 response also shows that farmers have a tendency to accept, support, or develop sorghum commodities. However, the level of knowledge and understanding they have about sorghum commodities (cognitive) is still relatively lower. Therefore, there is a gap between the desire to

accept/develop sorghum commodities and mastery of necessary information and technical knowledge.

The findings and arguments above are in line with the Diffusion of Innovations theory put forward by Rogers (2007) and provide a perspective about how innovation, such as cultivation of sorghum, can be disseminated and accepted by farmers through increasing farmer knowledge and experience. In addition, this theory also explains the importance of various factors in adopting innovation, which may include affective and conative components. Therefore, efforts to improve farmers' response to commodity sorghum are not enough to build motivation, interest, and action in the field, but it must also be followed with improvement in the capacity of knowledge and experience of farmers.

This study in harmony with the results of previous research, such as: 1) Handayani & Febriamansyah (2019) which shows that the conative dimension (behavior) provides the largest (prominent) contribution to the Farmers' Business Insurance Program in Tanah Data; 2) Jayaputra et al. (2021) explain that contribution the biggest comes from " extension and training activities" which are identical to the conative dimension because of the activity provide new knowledge and practical skills that can be immediately applied in agricultural businesses in North Lombok Regency; and 3) Sunanto et al. (2019) explain that aspect conative as factors contributing to the increase Arabica coffee productivity, which is seen in the action real farmers in participate in the improvement program productivity, such as training, outreach, and implementation technology in business coffee farming in the Regency North Toraja, South Sulawesi.

In an attempt to increase farmers' response to the commodity sorghum, it can be adopted from the opinion of Parasuraman et al. (1988), which explains that to fix the total consumer perception, it can be prioritized on dimensions that have the lowest partial consumer perception index value. In this study has known that the Y1 (Cognitive) dimension has the lowest partial farmer response index value, namely 57 %. The index value of partial farmer response of 57% (< 60%) indicates that aspects of knowledge, understanding, belief, and perception of farmers' rationale regarding the commodity sorghum in the category "enough" or "meaning not optimal", so that it still requires efforts or intervention actions through extension and training. The farmer response index of 57% also shows that the level of knowledge, understanding, and perception of farmers regarding the commodity sorghum is still at the " moderate " level towards " positive response ", so that farmers have an understanding base about characteristics, benefits, and potential development of sorghum, but understanding is not yet fully comprehensive. Therefore, some knowledge or information about the technique of cultivation, economic benefits, market opportunities, and utilization of sorghum products is not yet fully known by farmers.

Findings: This is in harmony with the Diffusion of Innovations theory, that knowledge (cognitive) is a stage beginning in the adoption process of innovation that is very decisive in the formation of attitude (affective) and a person's decision to accept an innovation (conative). The higher the level of knowledge possessed, the greater the opportunity for an individual to adopt innovation (Rogers, 2007). Therefore, the value index response of 57% indicates that development of commodity sorghum still needs strengthening through several efforts, such as counseling, field demonstrations, cultivation training, and dissemination of information about the benefits and economic prospects of commodity sorghum so that farmers' knowledge increases comprehensively. At this level, it will push the acceptance and adoption of commodity sorghum more broadly. Findings: This is also in line with research on Economic Value, Farmers' Perception, and Strategic Development of Sorghum in Central Java and Yogyakarta, which states that farmers' knowledge and perception (cognitive) of economic value and prospects development of commodity sorghum is an important thing that influence success development commodities the (Widodo, Triastono, et al., 2023).

Related to the mark Y1 dimension index (Cognitive), which only reaches 57%, the priority development or improvement of the index mentioned, it is better directed at improving farmer knowledge capacity through continuous extension, field schools, demonstration cultivation, technical training, utilization of digital media, and strengthening partnerships with research institutions and industry. The strategy will strengthen knowledge and index farmers' response to commodities such as sorghum, which, according to Diffusion of Innovations theory, is a prerequisite important before formation positive attitude and decision to adopt agricultural innovation (Rogers, 2007). In addition, increased understanding and education about agricultural innovation, and development skills needed to adopt new technologies, fair market integration, and diversification of business are also mentioned as strategies to improve farmer welfare, which in turn can influence farmers' attitudes towards the system innovation, such as integrated farming (Suwardike & Prabawa, 2014).

Novelty is a thing discovered in a study and offered academically, which becomes differentiators and value-adds in A scientific work, product, or thought. Research: This gives scientific contributions through a more comprehensive approach in analyzing farmers' response to commodity sorghum. Different from previous research, which generally only studies farmer perception, response to innovation cultivation, or factors that influence response, this research measures a comprehensive farmer response index through calculations of the total response index and partial responses based on cognitive, affective, and conative dimensions, then determines the dimensions that become priority to be fixed as base compilation strategy development. In addition, this research expands the study perspective from the response to farming or innovation cultivation to the response to commodities, sorghum, in the context of the agribusiness system, which includes aspects of cultivation, economic value, market opportunities, and development prospects. The empirical basis of this research also lies in the provision of scientific evidence regarding farmers' responses in the village of Beber, Cirebon Regency, which until now has not been widely reported in the literature, so that the results of this study can enrich the treasure trove of development of sorghum in Indonesia.

The results of the study show that farmers' response to sorghum commodities is at a positive level, but still needs strengthening to be able to push the development of sorghum sustainably. Therefore, the government, regional governments, agricultural extension workers, research institutions, and groups farmer need prioritize improvement programs for farmer capacity through continuous extension, field schools, demonstration cultivation, post-harvest training, and dissemination of information about economic benefits and market opportunities for sorghum. In addition, strengthening partnerships between farmers and industry processing cooperatives, actors, businesses, and institutions marketing needs to be developed to expand market access, improve market-ready products, as well as provide certainty in marketing of harvested produce. Support policy in the form of provision of superior, mentoring technical, access to financing, and development chain sorghum value chain also becomes important in increasing power competition commodities. Thus, the strategy development of sorghum is not only oriented to production, but also to strengthening farmer capacity and sustainability system agribusiness sorghum as a whole.

CONCLUSION

The results of the study show that the index of farmers' response to sorghum commodities in the village of Beber, Cirebon Regency, reached 66%, which indicates that, in general, farmers provide a positive response to the development of sorghum. Measurements in each dimension show variations in response level, with the Cognitive dimension obtaining an index of 57%, the Affective dimension 65%, and the Conative dimension 75%. Findings show that farmers' tendency to accept and support the development of sorghum is relatively good, but there are still limitations in terms of knowledge and understanding about commodities.

Therefore that is, the Cognitive dimension become priority main thing that needs to be improved so that farmers' response to sorghum commodities is increasingly optimal. Overall, this research gives proof that strengthening farmers' knowledge capacity is a factor important in support success development of sustainable sorghum in the village of Beber, in particular.

Based on the research results (conclusions above), it is suggested that government regions, agricultural extension workers, and universities prioritize improving the cognitive dimension of farmers through continuous extension, field schools, demonstration cultivation, post-harvest training, as well as providing information about the economic benefits and market opportunities of sorghum commodities. In addition, strengthening partnerships between farmers and research institutions, industry processing, cooperatives, and actors marketing need improved use, expanding access to technology, markets, and value add product.

This research has several necessary limitations noticed in interpreting the research results. First, the research was only conducted on farmers in the village of Beber, Cirebon Regency, so the research results cannot be generalized to other areas that have the same characteristics. Different social, economic, and agroecological aspects. Second, this research only focuses on measuring farmers' response to sorghum commodities through cognitive, affective, and conative dimensions without analyzing factors that influence response formation and its impact on the level of adoption of technology, productivity, and farming income. Third, the data used is cross-sectional, so it only describes the condition of farmer responses during the research period and is not yet capable explain change response over time. Therefore, further research is recommended to use wider regional coverage, a longitudinal approach, and to develop an analysis model that integrates factors determining responses and their implications for development agribusiness sustainable sorghum cultivation. Data analysis methods used Structural Equation Modeling (SEM) and Bootstrapping to obtain a robust structural model.

DECLARATION OF AI AND AI ASSISTED TECHNOLOGIES IN THE WRITING PROCESS

During the development of this manuscript, the authors employed ChatGPT (OpenAI), Google Translate, and Grammarly exclusively as language-support tools. These technologies were used to facilitate English translation, improve grammar, enhance linguistic accuracy, refine terminology, increase sentence coherence, and strengthen the overall academic quality of the writing. Every AI-generated or AI-assisted suggestion was carefully examined, validated, and revised by the authors to ensure the precision, consistency, and appropriateness of the final manuscript. The authors assume full responsibility for the originality, integrity, accuracy, interpretation, and final presentation of the work, including its suitability for publication.

ACKNOWLEDGMENTS

I would like to thank you funding for this research. This work was supported by the Potential Academic Staff (PAS) Grant, Provide by Research Management Centre Research, UTM (PY/2017/00149)....

AUTHOR CONTRIBUTIONS

Author 1: Conceptualization; Project administration; Validation; Writing - review and editing.

Author 2: Conceptualization; Data curation; In-vestigation.

Author 3: Data curation; Investigation.

DECLARATION OF COMPETING INTEREST

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

REFERENCES

FAO. (2010). Guide To Good Farming Practices For Animal Production Food Safety. Food And Agriculture Organization. https://www.fao.org/4/i0482t/i0482t00.pdf

Ghozali, I., & Fuad, H. (2005). Structural Equation Modeling: Teori, Konsep & Aplikasi dengan Program Lisrel 8.54. Badan Penerbit Universitas Diponegoro.

Saifuddin Azwar. (2017). Penyusunan skala psikologi (2nd ed.). Pustaka pelajar.

Schiffman, Leon, G., Wisenblit, & Joseph. (2019). Consumer Behavior (12th ed.). Pearson.

Sugiyono. (2019). Metode Penelitian Kuantitatif Kualitatif dan R&D. Penerbit Alfabeta Bandung.

Suwardike, P., & Prabawa, P. S. (2014). Sistem pertanian terpadu (1st ed.). PT Media Penerbit Indonesia.

Widodo, S., Ladyani, F., Asrianto, L. O., Rusdi, N., Khairunnisa, Lestari, S. M. P., Wijayanti, D. R., Devriany, A., Hidayat, A., Dalfian, Nurcahyati, S., Sjahriani, T., Armi, N., Widya, N., & Rogayah, N. (2023). Buku Ajar Metode Penelitian (M. Seto (ed.); 1st ed.). CV. Science Techno Direct.

Adinda, N. S., Mulyadi, D. N., & Pulungan, S. N. (2024). Jurnal Ilmu Manajemen Dan Pendidikan Analisis Sistem Dalam Peningkatan Kinerja Manajerial Di Sekolah Dasar Jurnal Ilmu Manajemen Dan Pendidikan. Ilmu Manajemen Dan Pendidikan, 01(03), 28–34.

Anggraini, L. D., Deoranto, P., & Ikasari, D. M. (2015). Analisis Persepsi Konsumen Menggunakan Metode Importance-Performance Analysis Dan Customer Satisfaction Index. Jurnal Industri, 4(2), 74–81.

Asdar, & Badrullah. (2016). Method of Successive Interval in Community Research (Ordinal Transformation Data to Interval Data in Mathematics Education Studies). International Journal of Social Science and Humanities Research, 4(2), 356–363. www.researchpublish.com

Fauziah, H., Sudirman, I., Gunawan, R., & Wachdijono. (2025). Optimizing Refugia Planting Areas And Increasing The Frequency Of Predator Sightings Can Increase Environmentally Friendly And Sustainable Rice Production. Jurnal Impresi Indonesia (JII), 4(2), 1132–1145. https://doi.org/10.58344/jii.v4i2.6319

Fishbein, M., & Ajzen, I. (1975). Belief, Attitude, Intention and Behaviour: An Introduction to Theory and Research. Reading, MA: Addison-Wesley. https://www.researchgate.net/publication/233897090_Belief_attitude_intention_and_behaviour_An_introduction_to_theory_and_research

Gelu, T., Kapa, M. M. J., & Nainiti, S. P. N. (2021). Farmer Perception on Sorghum Farming In Wuakerong Village Of Nagawutung Sub-District, Lembata Regency. Buletin Ilmiah IMPAS, 22(1), 74–79.

Goran, M. B., Sinu, I., & Pellokila, M. R. (2021). Penentu Respons Petani terhadap Budidaya dan Pemanfaatan Sorgum. Journal of Agricultural Socio-Economics, 1(1), 25–32. https://doi.org/10.33474/jase.v1i2.13038

Handayana, A. W., Fadwiwati, A. Y., & Muhammad, H. (2014). Faktor-faktor yang memengaruhi respons petani terhadap penyediaan benih upbs bptp Gorontalo. Agroteksos, 270, 1–18.

Handayani, S., & Febriamansyah, R. (2019). Cognitive, Affective, and Conative Attitude of Farmers to Rice Farming Insurance (RFI) Program in Tanah Datar District, West Sumatera Province, Indonesia. International Journal of Agricultural Sciences, 3(2), 50–56. https://doi.org/10.25077/ijasc.3.2.50-56.2019

Janah, F. N., & Barokah, U. (2025). Nusantara Hasana Journal. Nusantara Hasana Journal, 5(2), 187–196.

Jayaputra, Nurrachman, & Santoso, B. B. (2021). Peningkatan Pendapatan Petani Melalui Diversifikasi Dan Intensifikasi Tanaman Hortikultura Di Lahan Kering Desa Gumantar Kabupaten Lombok Utara. Jurnal Gema Ngabdi, 3(1), 29–39. https://doi.org/10.29303/jgn.v3i1.133

Kharisma, D., Simatupang, S., & Hutagalung, H. (2023). Pengaruh Kualitas Pelayanan Terhadap Kepuasan Konsumen Pada UD. Restu Mulia Pandan. JUMANSI, 5(1), 32–42.

Miles, D. (2017). A taxonomy of research gaps: Identifying and defining the seven research gaps. Journal of Research Methods and Strategies, August, 1–15.

Nurjanah, Sach, G. A., & Wachdijono. (2025). The Effect of Using Owl Houses on Reducing Rattus Argentiventer and Its Impact on Increasing Rice Production. Journal of World Science, 4(8), 1110–1121.

Palang, A., Apelabi, G. O., & Wanda, T. Lawan S. (2025). Respons Petani Terhadap Pengembangan Tanaman Sorgum Pada Kelompok Tani Sinar Harapan. Journal Agriculture, 2(2), 1–14.

Pangastuti, L. (2026). Studi Kebutuhan dan Kondisi Toilet Umum di Taman Prestasi Surabaya: Tinjauan Kualitas Pelayanan DLH Sebagai Dasar Pengawasan Komisi C DPRD. ACADEMIA, 6(1), 9–20.

Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1988). Servqual: A Multiple-item Scale for Measuring Consumer Perceptions of service Quality. Journal of Retailing, 64(1), 12–40.

Prasetyo, E. D., Maulana, M. T., & Wachdijono, W. (2023). Pengaruh Barista Terhadap Suasana Coffee Shop Melalui Variabel Produk. Mimbar Agribisnis : Jurnal Pemikiran Masyarakat Ilmiah Berwawasan Agribisnis, 9(2), 2860. https://doi.org/10.25157/ma.v9i2.10749

Pratiwi, V. A., Sulaiman, E., Budiastuti, E., & Ajie, A. (2022). Store Atmosphere and Service Quality on Cafe Consumer Satisfaction. Enrichment: Journal of Management, 12(4), 2893–2900.

Rogers, E. M. (2007). Diffusion of Innovations. Journal of Minimally Invasive Gynecology, 14, 776–777. https://doi.org/10.1016/j.jmig.2007.05.018

Sunanto, S., Salim, S., & Rauf, A. W. (2019). Analisis Kesepakatan Peningkatan Produktivitas Kopi Arabika Pada Pengembangan Kawasan Di Kabupaten Toraja Utara. Jurnal Sosial Ekonomi Pertanian, 15(1), 42. https://doi.org/10.20956/jsep.v15i1.6369

Syarifudin, H., & Wachdijono. (2026). Understand Consumer Perception of Waiting Time in Services Urban Developing : A Study in Cirebon City, Indonesia. Journal of Social Entrepreneurship and Creative Technology, 3(1), 87–100. https://doi.org/10.70177/jseact.v2i1.3422

Widodo, S., Triastono, J., Sahara, D., Pustika, A. B., Kristamtini, Purwaningsih, H., Arianti, F. D., Praptana, R. H., Romdon, A. S., Sutardi, Widyayanti, S., Fadwiwati, A. Y., & Muslimin. (2023). Economic Value, Farmers' Perception, and Strategic Development of Sorghum in Central Java. Agriculture, 13(516), 1–22. https://doi.org/10.3390/agriculture13030516

Wijayanti, A., Subejo, & Harsoyo. (2015). Farmer Response to Innovation in Cultivation and Use of Sorghum in Srandakan Sub District Bantul Regency. Agro Ekonomi, 26(2), 179–191.

Winda Amilia, Rusdianto, A. S., Choiron, M., Mahardika, N. S., & Lestari, D. I. (2023). Marketing Strategy Planning Of Kahyangan Coffee Using Marketing Mix in Coffee Shop. Jurnal Sosial Ekonomi Pertanian (J-SEP), 16(3), 287–300. https://doi.org/10.19184/jsep.v16i3.43030

Zamrud, Q. T. (2025). Strategi Manajerial Dalam Meningkatkan Efisiensi Sumber Daya Di Lembaga Pendidikan. Pendidikan Indonesia, 5(2), 227–235. https://doi.org/10.59818/jpi.v5i2.1450

Copyright Holder :
© Aswin Muhammad Pasha et al. (2026).

First Publication Right :
© Journal of Loomingulisus ja Innovatsioon

This article is under:

