

The Effect of Marketing on Pesticide Purchasing Decisions Through Brand Image Among Shallot Farmers in Brebes Regency

Agung Wicaksono*¹, Ulfah Purwaningsih²

¹) Faculty of Economics and Business, Airlangga University, Indonesia

²) Saïd Business School, Oxford University, United Kingdom

Email : agung.wicaksono-2025@feb.unair.ac.id

Abstract

This study examines the influence of product quality, price, place, and promotion on purchasing decisions, with brand image positioned as a mediating variable that reflects farmers' psychological evaluation of trust, perceived quality, and risk reduction toward pesticide brands. Using Structural Equation Modeling (SEM), all measurement indicators were confirmed to meet the required standards of convergent and discriminant validity, while composite reliability values exceeded 0.7, indicating strong construct reliability. The structural model demonstrates substantial explanatory power, with product quality, price, place, and promotion collectively accounting for 61.9% of the variance in brand image, and all independent variables explaining 69.5% of the variance in purchasing decisions. The hypothesis testing results reveal that brand image significantly mediates the relationship between product quality and purchasing decisions, suggesting that farmers' long-term trust in pesticide brands strengthens the effect of perceived product quality on their buying behavior. Brand image also significantly mediates the relationship between price and purchasing decisions, indicating that farmers' willingness to pay is shaped by brand-related trust built up through repeated experience, rather than by price considered in isolation. Theoretically, the study extends the Customer-Based Brand Equity and Stimulus-Organism-Response frameworks into an agribusiness input-purchasing context, showing that among risk-bearing agricultural producers, brand image operates primarily as a trust- and risk-reduction heuristic rather than as an identity- or status-signaling device, as is typically theorized in general consumer markets. The findings also show that farmers tend to remain loyal to familiar brands and prefer outlets that offer accessibility and consistent product availability. Promotional activities alone are insufficient unless supported by clear evidence of product superiority. Overall, the study highlights the importance of maintaining product performance, strengthening distribution channels, and building long-term brand trust to effectively influence purchasing decisions, while extending brand image theory into the underexplored context of agricultural input markets.

Article info

Article history:

Received 19 March 2026

Received in revised form 31 July 2026

Accepted 01 Agustus 2026

Available online 09 Agustus 2026

Keywords: Product Quality, Price, Place, Promotion, Brand Image, Purchasing Decisions

How to Cite: Wicaksono, A. & Purwaningsih, U. (2026). The Effect of Marketing on Pesticide Purchasing Decisions Through Brand Image Among Shallot Farmers in Brebes Regency. *Journal Ilmiah Manajemen dan Bisnis*, 12 (2),170-185.

INTRODUCTION

One of the districts in Central Java, Brebes, also leans on the agricultural sector to keep its economy going after fisheries and coastal-based activities. Agriculture has served as the economic backbone for most Brebes residents to rely on, which makes it fitting that the district often referred to as the “Brebes Shallot Farmers Association” stands out as one of the main shallot-producing areas that helps meet the demand for shallots in Central Java as well as the national supply, contributing around 18.5% of Indonesia's total production (BPS Kabupaten Brebes, 2025). Among the sub-districts that come forward with highly productive land and a strong contribution to shallot output are Wonosari, Wanasari, Larangan, Ketanggungan, and Jatibarang. The biggest challenge shallot farmers run into in this area is the attack of plant-disturbing organisms (pests) and the consequences of pesticide resistance. The pest that most frequently shows up and hits shallot farmers in Brebes Regency is the Onion Armyworm (*Spodoptera exigua*), which keeps turning up every planting season as a recurring obstacle farmers must deal with. The presence of these plant-disturbing organisms (OPT) ends up damaging shallot crops and brings about a high risk of crop failure, leading to financial losses for farmers.

Typically, farmers turn to pesticides as their main tool to fight off pests because they are considered more efficient and cost-effective (Rana et al., 2019). Without pesticides, pest-related damage can hold back shallot productivity. Farmers' perception of pesticide use is seen as essential to cut down on the risk of crop failure (Situmorang et al., 2021). However, the use of chemical pesticides without strict control and guidance can also bring about risks to public health, the environment, and soil conditions due to nutrient depletion (Sarma, 2022). This highlights the importance of farmers picking out the right pesticide products according to their needs so they can tackle pest attacks while at the same time keeping down potential damage to shallot fields. Findings by Apriana et al. (2017) confirm that inappropriate pesticide use can end up lowering shallot productivity, whereas proper use should actually help reduce production risks.

Empirically, farmers' decisions to purchase pesticide products can be looked into through the marketing mix, as supported by the findings of Hariyani (2020), Kumar et al. (2023), Gohel et al. (2023), and Leo & Defrizal (2023), who concluded that the marketing mix comes into play in shaping farmers' purchasing decisions for pesticide products. In this study, the marketing mix refers to product quality, price, place, and promotion factors that have been empirically shown to account for variations in farmers' decisions to buy pesticides. The role of product quality has been backed up by Sari (2022), while the influence of product price has been pointed out in studies by Situmorang et al. (2021), Gohel et al. (2023), and Leo & Defrizal (2023).

The contribution of promotion has been laid out in the work of Sumantri et al. (2015), and the influence of place has been brought forward in studies by Solehat et al. (2017) and Fahera (2022). This study also brings in brand image, considering that farmers often hold on to certain brands based on their past experiences. The contribution of brand image has been spelled out in the studies of Ratnasari &

Suswardji (2016), Kumar et al. (2023), and Gohel et al. (2023), which show that brand image can drive up pesticide purchases.

Despite this growing body of evidence, most existing studies linking the marketing mix, brand image, and purchasing decisions have been conducted in urban retail or fast-moving consumer goods settings, where choices are frequently shaped by lifestyle association, symbolic value, and promotional exposure (Yang et al., 2023). Comparatively little empirical attention has been paid to how these mechanisms operate among agricultural producers such as shallot farmers, whose purchasing behavior for production inputs like pesticides is primarily driven by the need to minimize production risk and safeguard crop yield rather than by symbolic consumption (Sarma, 2022; Meira et al., 2025). This distinction matters theoretically: unlike typical retail consumers, farmers evaluate brands mainly through repeated exposure to product performance under real field conditions, and their trust in a brand accumulates across planting seasons rather than through short-term promotional campaigns (Liu & Wang, 2023). Whether brand image — understood as a psychological construct built from trust, perceived quality, familiarity, and risk reduction — still mediates the relationship between the marketing mix and purchasing decisions within this distinctive agribusiness context therefore remains an open empirical question, and it constitutes the central gap that this study seeks to address.

This distinction becomes concrete in the Brebes context itself. According to Croplife Indonesia data cited by the Brebes Agriculture and Food Security Office, annual pesticide transactions in the regency reach approximately Rp350 billion, and Brebes is recorded as the highest pesticide-consuming regency in Southeast Asia at the district level; of the roughly 3,200 pesticide brands registered with Indonesia's Ministry of Agriculture, around 1,300 circulate in this single regency (Dinas Pertanian dan Ketahanan Pangan Kabupaten Brebes, as cited in Hidayah, 2017). Such an intensely fragmented brand landscape means that Brebes shallot farmers routinely choose among hundreds of competing pesticide brands under constant pressure to avoid crop failure a purchasing environment markedly different from a retail consumer selecting among a handful of shelf-stable, symbolically differentiated brands in a supermarket. This pattern is consistent with international evidence on agro-input buying behavior: while smaller farm operations can behave like retail consumers in terms of limited market power, their evaluation criteria for inputs remain distinctive from typical FMCG purchasing (Harbor et al., 2008). A comprehensive study among Indian vegetable farmers found that, specifically for pesticide purchases, perceived effectiveness was rated as extremely important by 63.75% of respondents and price by 57.50%, with brand ranked only third at 48.75%, while fellow farmers exerted the single strongest influence on the purchase decision at 68.75% a pattern that contrasts with seed and fertilizer purchases, where brand is the dominant consideration (Suman, 2020). This body of evidence reinforces why brand image cannot be assumed to operate for farmers exactly as it does for retail consumers, and why testing

its mediating role specifically within the Brebes pesticide market constitutes a meaningful empirical contribution.

Given the issues outlined above, it becomes compelling to look into the purchasing behaviour of farmers in the Wonosari, Wanasari, Larangan, Ketanggungan, and Jatibarang Sub-districts of Brebes Regency by examining the marketing mix and the extent to which brand image can step in as a mediating factor in pesticide purchasing decisions. The objectives of this study are to identify and describe the direct and indirect effects of the marketing mix on pesticide purchasing decisions and to analyse the ability of brand image to bridge the relationship between the marketing mix and farmers' purchasing decisions. Beyond its practical value for companies seeking to understand the marketing mix and brand image strategies that farmers weigh when choosing pesticide products, this study contributes theoretically by extending brand image research conventionally examined in retail and lifestyle consumption contexts into the agricultural input market, offering evidence on how a psychological brand construct operates when purchasing decisions are primarily risk-driven rather than symbolic.

Marketing Mix and Purchasing Decisions

The marketing mix — product quality, price, place, and promotion — has long been established as a determinant of consumer purchasing decisions, and this logic extends to agricultural input markets. Prior studies confirm that farmers' decisions to purchase pesticides, fertilizers, or seeds are shaped jointly by these four elements, alongside the perceived reliability of the seller (Hariyani, 2020; Kumar et al., 2023; Gohel et al., 2023). What remains less settled in this literature is the mechanism through which these stimuli are translated into a purchasing response, which is where brand image is theorized to play a mediating role.

Brand Image as a Psychological Construct

Keller (1993) conceptualizes brand image as the set of associations held in consumers' memory that give a brand its meaning, distinguishing it from brand awareness (the ability to recall or recognize a brand) and brand loyalty (the behavioral and attitudinal commitment to repurchase). Building on this, Aaker (1991) positions perceived quality, brand associations, brand awareness, and loyalty as complementary sources of brand equity, with brand image functioning as the associative core that links product attributes to consumer trust. For products whose quality is difficult to verify prior to use such as pesticides, whose effectiveness against pests can only be judged after application in the field signaling theory (Spence, 1973) offers a complementary explanation: a well-established brand functions as a market signal that reduces information asymmetry and perceived purchase risk, allowing farmers to infer unobservable product quality from observable brand reputation.

Stimulus–Organism–Response and Consumer Decision-Making Theory

The mediating role of brand image can be further situated within the Stimulus-Organism-Response (S-O-R) framework (Mehrabian & Russell, 1974), in which the marketing mix elements act as external stimuli, brand image represents the internal cognitive-affective evaluation (the organism), and the purchasing decision constitutes the behavioral response. This view is consistent with the consumer decision-making process described by Engel, Blackwell, and Miniard (1995), in which problem recognition and evaluation of alternatives are filtered through accumulated brand beliefs before a purchase is made. Framed this way, brand image is not merely an outcome variable but the psychological bridge that determines whether a given marketing stimulus is converted into a purchasing response.

Agricultural Marketing Perspective

Because farmers are agribusiness consumers rather than typical retail shoppers, their evaluation of pesticide brands is also shaped by considerations that extend beyond the conventional marketing mix, including production-risk reduction (Sarma, 2022), guidance received through agricultural extension services, the strength of the relationship with local input distributors and dealers, and recommendations from fellow farmers within the same farmer group (Rana et al., 2019). A study of supplier selection in the crop protection retail sector similarly found that product quality, price, brand reputation, and promotional support are evaluated jointly by manufacturers and retailers, with brand-related trust playing a role distinct from price and quality alone (Ahn & Kim, 2023). In a related vein, risk perception has been shown to mediate the relationship between trust and purchase-related behavior among farm managers, reinforcing that trust and risk perception rather than price or promotion in isolation are central to agricultural purchasing decisions (Meira et al., 2025). These agribusiness-specific factors help explain why farmers' purchasing behavior tends to place heavier weight on demonstrated field performance and peer-validated trust than on promotional communication alone, a pattern that later empirical findings in this study help to substantiate.

Prior Empirical Evidence and Positioning of the Study.

Empirical studies outside the agricultural sector consistently report that brand image mediates the relationship between product-related marketing mix elements and purchasing decisions (Saraswati & Rahyuda, 2017; Hendrayani et al., 2022; Islamiah et al., 2023; Sihombing et al., 2023). Recent studies within agricultural and rural consumer settings similarly show that brand image and brand trust shape consumer response toward agricultural products, whether through perceived value (Yang et al., 2023) or trust-based attitude formation (Liu & Wang, 2023; Liu & Zheng, 2023). Closer to the present context, recent agri-input studies confirm that brand image and brand loyalty are central to farmers' repurchase behavior: brand image was found to be the strongest direct predictor of farmer satisfaction in the purchase of hybrid tomato seeds in Indonesia (Khoirudin et al., 2026), brand loyalty outweighed price

discounts and product information in Kenyan maize farmers' seed choice (Rutsaert et al., 2024), and cognitive brand loyalty was shown to shape agrochemical brand preference and repurchase decisions among cocoa farmers in Ghana (Boateng & Bannor, 2026). Building on this theoretical foundation, this study hypothesizes that brand image mediates the relationships between product quality, price, place, and promotion, respectively, and farmers' purchasing decisions, while acknowledging that the strength of this mediation may vary depending on how directly each marketing mix element relates to farmers' underlying concern for production-risk reduction. The study's novelty lies primarily in this contextual extension testing an established brand image mediation model within the agricultural input market for shallot farmers rather than in the introduction of an entirely new theoretical construct.

METHOD

The research sample refers to a selected segment of the population that stands in for the larger group because it carries the same characteristics (Sekaran & Bougie, 2017). In this study, the sample consists of a portion of shallot farmers across five sub-districts in Brebes Regency — Wonosari, Wanasari, Larangan, Ketanggungan, and Jatibarang — who were picked out to take part in the research, with a total of 100 respondents distributed across these sub-districts. Farmers in these sub-districts are organized into active farmer groups, which allowed the research questionnaire to be handed out through these groups for efficiency.

Sampling followed a purposive, group-based procedure: respondents were drawn from farmer groups actively cultivating shallots and using pesticides during the survey period across the five sampled sub-districts, which helped ensure that participants shared comparable exposure to the marketing mix and brand choices under study. Distributing the questionnaire through established farmer groups, rather than through open convenience sampling, was intended to improve coverage of these sub-districts' active shallot-farming population and to reduce the risk of including respondents unfamiliar with pesticide purchasing decisions. Even so, because the sampling procedure is non-probability in nature, the findings should be interpreted as representative of farmers affiliated with these groups rather than of the full farmer population in Brebes Regency, and this constraint is revisited in the Limitations section.

The data analysis process went through several stages, beginning with validity and reliability testing of the instrument, followed by structural model testing using SEM with SmartPLS. Hypothesis acceptance rests on whether the t-statistic hits 1.96 at a 5 per cent alpha level; if so, the hypothesis is considered acceptable.

While farmer-specific characteristics such as farming experience, land size, and pesticide-use intensity may plausibly influence purchasing behavior, this study focuses specifically on the marketing mix and brand image constructs central to the research objectives; these background characteristics

were therefore not measured as control variables in the present survey instrument. This scope decision is revisited in the Limitations section.

RESULTS AND DISCUSSION

The results of the Structural Equation Modeling (SEM) analysis resulted in several findings which are presented as follows:

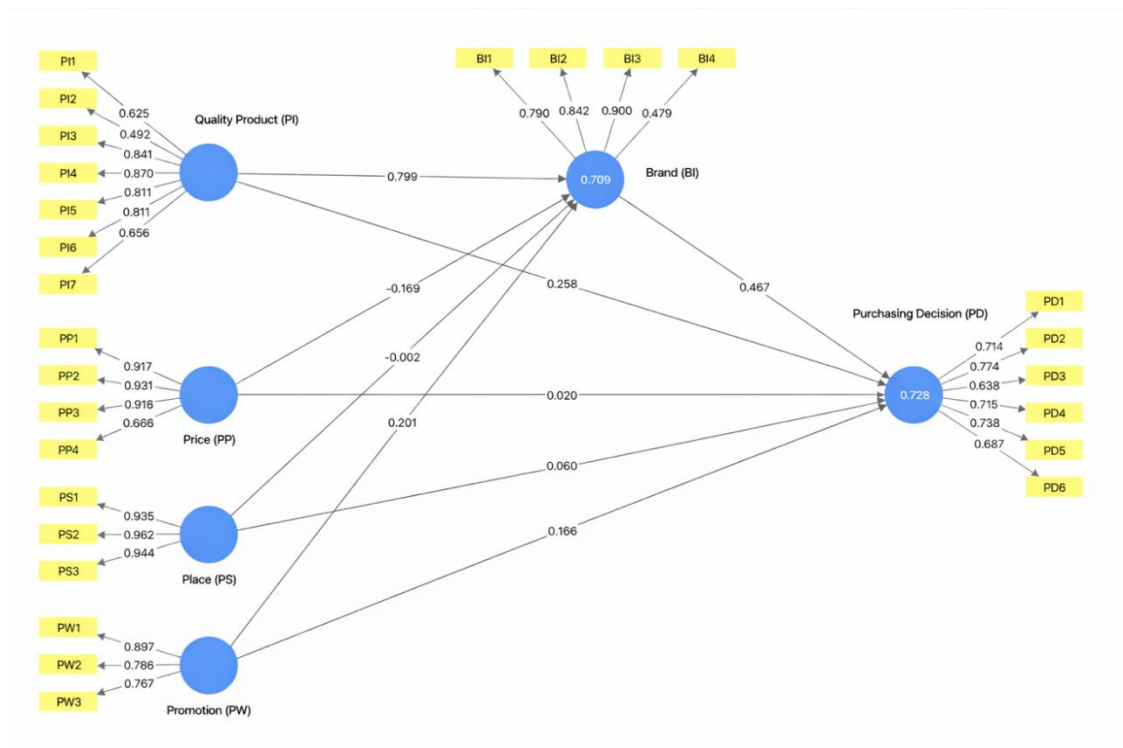


Figure 1. Structural Model (SEM-PLS) Estimation Results

Based on the results of data processing loading factors that have been presented in the figure, the value of each indicator can be explained as follows:

Table 1. Outer Loadings (Convergent Validity)

Variable	Outer loadings	Rule of thumb	Remark
BI1 <- Brand (BI)	0.790	0.700	Valid
BI2 <- Brand (BI)	0.842	0.700	Valid
BI3 <- Brand (BI)	0.900	0.700	Valid
PD1 <- Purchasing Decision (PD)	0.714	0.700	Valid
PD2 <- Purchasing Decision (PD)	0.774	0.700	Valid
PD4 <- Purchasing Decision (PD)	0.715	0.700	Valid
PD5 <- Purchasing Decision (PD)	0.738	0.700	Valid
PI3 <- Quality Product (PI)	0.841	0.700	Valid
PI4 <- Quality Product (PI)	0.870	0.700	Valid
PI5 <- Quality Product (PI)	0.807	0.700	Valid
PI6 <- Quality Product (PI)	0.811	0.700	Valid
PP1 <- Price (PP)	0.917	0.700	Valid
PP2 <- Price (PP)	0.931	0.700	Valid
PP3 <- Price (PP)	0.913	0.700	Valid
PP4 <- Price (PP)	0.947	0.700	Valid
PS1 <- Place (PS)	0.935	0.700	Valid
PS2 <- Place (PS)	0.962	0.700	Valid
PS3 <- Place (PS)	0.944	0.700	Valid
PW1 <- Promotion (PW)	0.897	0.700	Valid
PW2 <- Promotion (PW)	0.785	0.700	Valid
PW3 <- Promotion (PW)	0.767	0.700	Valid

All indicators across the research variables show loading factor values that exceed the commonly accepted threshold, indicating that every indicator satisfies the validity criteria. The subsequent assessment of discriminant validity using the Fornell–Larcker criterion is presented as follows:

Table 2. Discriminant Validity – Fornell–Larcker Criterion

	Brand	Place	Price	Promotion	Purchasing Decision	Quality Product
Brand (BI)	0.864					
Place (PS)	0.203	0.947				
Price (PP)	0.537	0.239	0.927			
Promotion (PW)	0.670	0.152	0.622	0.818		
Purchasing Decision (PD)	0.792	0.249	0.527	0.683	0.753	
Quality Product (PI)	0.756	0.267	0.638	0.673	0.736	0.864

Most constructs demonstrate loading values that are higher than their respective cross-loadings, indicating that they meet the discriminant validity criteria. One exception is observed for Purchasing Decision (PD), whose square root of AVE (0.753) is marginally lower than its correlation with Brand (BI) (0.792), indicating a degree of conceptual overlap between brand image and purchasing decision that falls just short of the strict Fornell–Larcker threshold; this is noted as a limitation of the measurement model. The subsequent evaluation based on the AVE values can be presented as follows:

Table 3. Reliability and Validity (Cronbach's Alpha, Composite Reliability, and AVE)

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
Brand (BI)	0.830	0.833	0.898	0.747
Place (PS)	0.943	0.959	0.963	0.897
Price (PP)	0.945	0.948	0.961	0.859
Promotion (PW)	0.751	0.761	0.858	0.669
Purchasing Decision (PD)	0.746	0.758	0.839	0.567
Quality Product (PI)	0.887	0.890	0.922	0.746

The AVE values obtained from the analysis indicate that all variables exceed the commonly accepted threshold of 0.5, confirming that they satisfy the discriminant validity criteria. The subsequent assessment of construct reliability was conducted using composite reliability (CR), where a coefficient above 0.7 is considered indicative of adequate reliability. The results of this evaluation are presented as follows:

Table 4. Composite Reliability Summary

	Composite Reliability (rho_a)	Rule of thumb	Remark
Brand (BI)	0.833	0.600	Reliable
Place (PS)	0.959	0.600	Reliable
Price (PP)	0.948	0.600	Reliable
Promotion (PW)	0.761	0.600	Reliable
Purchasing Decision (PD)	0.758	0.600	Reliable
Quality Product (PI)	0.890	0.600	Reliable

The composite reliability test results indicate that all variables have CR values exceeding the accepted threshold, confirming that each construct meets the reliability criteria. In addition, the coefficient of

determination (R^2) illustrates the extent to which the independent variables contribute to purchasing decisions and to brand image.

Table 5. Coefficient of Determination (R-Square)

	R-square	R-square adjusted
Brand (BI)	0.619	0.603
Purchasing Decision (PD)	0.695	0.679

The R^2 value for brand image is 0.619, indicating that product quality, price, place, and promotion collectively account for 61.9 percent of the variance in the brand image construct. Meanwhile, the R^2 value for purchasing decisions is 0.695, meaning that all independent variables explain 69.5 percent of the variability in purchasing decisions. The subsequent stage involves hypothesis testing, which is presented below:

Table 6. Hypothesis Testing – Specific Indirect Effects (Mediation via Brand Image)

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values
Price (PP) -> Purchasing Decision (PD)	0.140	0.148	0.059	2.375	0.018
Quality Product (PI) -> Purchasing Decision (PD)	0.261	0.265	0.093	2.793	0.005

The test results indicate that brand image successfully steps in to mediate the relationship between product quality and purchasing decisions, with an indirect effect of 0.261 that is positive. The t-statistic of 2.793 is higher than 1.96 ($2.793 > 1.96$), and the p-value of 0.005 falls below the 0.05 threshold ($0.005 < 0.05$), thereby meeting the required significance level. Based on these findings, the tenth hypothesis can be accepted and is empirically supported. Farmers tend to stick with brands they have trusted over long periods, so when pest problems come up during the planting season, they usually fall back on the same products.

However, many farmers still mix up different brands according to their own beliefs and perceptions; Darwis et al. (2021) found that around 80 per cent of farmers combined multiple pesticide brands. The test results also show that brand image successfully mediates the relationship between price and purchasing decisions. The indirect effect of 0.140 is positive, the t-statistic of 2.375 is higher than 1.96 ($2.375 > 1.96$), and the p-value of 0.018 falls below the 0.05 threshold ($0.018 < 0.05$), thereby meeting the required significance level. Based on these findings, the eleventh hypothesis can be accepted and is empirically supported. This is consistent with agricultural marketing evidence showing that farmers rely on brand-related trust alongside perceived production risk and expected yield outcomes when evaluating the price of pesticide inputs (Meira et al., 2025).

Both mediation paths can be explained theoretically through the same underlying logic. Following Keller's (1993) customer-based brand equity framework, brand image is built from cumulative associations tied to product performance — in this case, a pesticide's demonstrated effectiveness against pests such as the Onion Armyworm — as well as from farmers' repeated experience with a brand's pricing over successive planting seasons. Because pesticide quality is difficult to verify before use, signaling theory (Spence, 1973) suggests that farmers rely on brand reputation as a proxy for unobservable efficacy, which is why product quality translates into purchasing decisions through brand image. Price operates through a related but distinct mechanism: because farmers evaluate whether a price is fair largely in light of the brand's track record of performance and reliability, brand image also functions as the lens through which perceived price is translated into a purchasing response, rather than farmers assessing price independently of brand considerations. This is consistent with a Stimulus-Organism-Response reading of the model (Mehrabian & Russell, 1974), in which both marketing stimuli tested here — quality and price — are channeled through the brand-image organism before shaping farmers' behavioral response, underscoring the central role of accumulated brand trust in this agribusiness input-purchasing context.

Similar conclusions have been backed up by the studies of Yasmine (2021), Hendrayani et al. (2022), Saraswati & Rahyuda (2017), and Islamiah et al. (2023). Farmers who have had positive past experiences with a particular pesticide brand and feel satisfied with its performance are generally willing to pay out an amount they consider reasonable. In practice, farmers tend to stick to the same agricultural products and buy from the same places that offer good accessibility and convenience. Regarding the place indicator, three key components can be looked into within the distribution channel.

Outlets located close to farmers' residences will naturally be chosen if they stock up on the pesticide brands farmers need. Likewise, shops that carry the targeted brands become preferred options, since farmers depend on a small set of trusted local outlets for both product availability and informal technical advice — meaning place functions simultaneously as a convenience factor and as an extension of the trust relationship normally associated with brand image (Ahn & Kim, 2023). Therefore, it can be understood that if producers only push out promotional activities without providing concrete evidence of the superiority of their pesticide products, such efforts will not come across as convincing or directly influence farmers' perceptions.

A further pattern worth highlighting is that, among the marketing mix elements tested, product quality and brand image emerge as stronger drivers of purchasing decisions than promotion alone. This is consistent with the agricultural marketing perspective outlined earlier: farmers, as agribusiness consumers, place greater weight on verifiable field performance, peer-group recommendations, and cumulative trust built over repeated growing seasons than on marketing communication (Rana et al., 2019; Sarma, 2022). For pesticide companies and agricultural extension

workers, this suggests that field demonstrations, farmer-to-farmer testimonials, and consistent product performance are likely to be more persuasive than promotional messaging alone, and that promotional investment yields the greatest return when it is paired with, rather than substituted for, demonstrable product quality and reliable distribution.

CONCLUSIONS

The SEM analysis confirms that all measurement indicators used in this study meet the required standards of validity and reliability. Convergent validity is demonstrated through loading factors above the accepted threshold, and AVE values exceeding 0.5 support this further. Discriminant validity via the Fornell–Larcker criterion is satisfied for nearly all construct pairs, with one marginal exception between brand image and purchasing decision noted as a limitation of the measurement model. Composite reliability values above 0.7 further indicate that each construct is internally consistent and dependable. The structural model also shows strong explanatory power. Product quality, price, place, and promotion collectively explain 61.9% of the variance in brand image, while all independent variables account for 69.5% of the variation in purchasing decisions. These findings highlight the substantial influence of marketing mix components on farmers' purchasing behavior.

Hypothesis testing reveals that brand image successfully mediates the relationship between product quality and purchasing decisions, indicating that farmers' long-term trust in a brand strengthens the impact of perceived product quality on their buying choices. Brand image also significantly mediates the relationship between price and purchasing decisions, suggesting that farmers' willingness to pay is shaped by brand-related trust accumulated through repeated experience rather than by price considered on its own. Theoretically, these findings extend brand image research traditionally examined through customer-based brand equity, signaling, and Stimulus-Organism-Response perspectives in retail and lifestyle consumption settings into the agricultural input market, showing that brand image plays a central mediating role across both quality- and price-related marketing stimuli in this agribusiness input-purchasing context.

Overall, the results emphasize that farmers tend to remain loyal to familiar pesticide brands and purchase from accessible outlets that consistently provide the products they need. Promotional activities alone are insufficient unless supported by clear evidence of product superiority. Managerially, these insights suggest that pesticide companies should prioritize maintaining consistent product performance, strengthening distribution channels, and building long-term brand trust; in addition, closer collaboration with local input distributors and dealers, investment in field-based demonstrations, and partnership with agricultural extension programs and farmer groups are likely to be more effective in reinforcing brand image than promotional messaging alone. Future research could extend this model by incorporating digital marketing and relationship marketing constructs, applying it to other agricultural commodities

and regions to test generalizability, and exploring agricultural branding strategies such as farmer-education initiatives and extension-based trust building as complementary levers for strengthening brand image among agribusiness consumers.

This study has several limitations. The use of self-reported data may introduce response bias, and the focus on a specific region and product category limits the generalizability of the findings. The cross-sectional design also prevents analysis of changes in farmer behavior over time. In addition, the model includes only selected marketing mix variables, leaving out other potential factors such as distributor influence, product availability, or regulatory conditions. The model also includes only the four conventional marketing mix variables; farmer-specific characteristics such as farming experience, land size, and pesticide-use intensity, as well as distributor influence, were not measured as control variables in this study. Because these factors may moderate how strongly farmers rely on brand image versus direct product evaluation, future research incorporating them either as control variables or as moderators would help clarify the boundary conditions of the mediation model proposed here.

REFERENCES

- Aaker, D. A. (1991). *Managing Brand Equity: Capitalizing on the Value of a Brand Name*. New York: Free Press.
- Ahn, B., & Kim, B. (2023). A decision-making model for selecting product suppliers in crop protection retail sector. *Administrative Sciences*, 13(4), 97. <https://doi.org/10.3390/admsci13040097>
- Apriana, N., Fariyanti, A., & Burhanuddin, B. (2017). Preferensi risiko petani padi di daerah aliran sungai Bengawan Solo, Kabupaten Bojonegoro, Provinsi Jawa Timur. *Jurnal Manajemen dan Agribisnis*, 14(2), 165–175. <https://doi.org/10.17358/jma.14.2.165>
- Boateng, D. A., & Bannor, R. K. (2026). Agrochemicals brands preferences and repurchasing decisions for sustainable input marketing to support cocoa production in Ghana. *Cleaner and Responsible Consumption*, 21, 100412. <https://doi.org/10.1016/j.clrc.2026.100412>
- BPS Kabupaten Brebes. (2025). *Kabupaten Brebes Dalam Angka 2025*. Brebes: Badan Pusat Statistik Kabupaten Brebes.
- Darwis, V., Muslim, C., & Anugrah, I. S. (2021). Perilaku petani dalam penggunaan pestisida pada budidaya bawang merah di Kabupaten Cirebon. *Journal of Food System and Agribusiness*, 5(2), 166–177. <https://doi.org/10.25181/jofsa.v5i2.2101>
- Engel, J. F., Blackwell, R. D., & Miniard, P. W. (1995). *Consumer Behavior* (8th ed.). Fort Worth: Dryden Press.
- Fahera, G. L. (2022). Analisis faktor-faktor yang mempengaruhi keputusan pembelian obat-obatan pertanian di Kecamatan Pujut Kabupaten Lombok Tengah. [Skripsi]. Universitas Mataram
- Gohel, P. R., Panigrahy, S. R., & Zala, S. (2023). Farmer's purchasing behavior and satisfaction level

- towards insecticide for cotton in Mangrol Taluka of Junagadh District, Gujarat. *The Pharma Innovation Journal* 2023; SP-12(6): 05-08
- Harbor, A. L., Martin, M. A., & Akridge, J. T. (2008). Assessing input brand loyalty among U.S. agricultural producers. *International Food and Agribusiness Management Review*, 11(1), 17–34.
- Hariyani, N. (2020). Pengaruh bauran pemasaran terhadap keputusan pembelian pestisida organik secara online di Landbouw Mart Ketindan. *Jurnal AgroSainTa: Widyaiswara Mandiri Membangun Bangsa*, 4(2), 105–116.
- Hendrayani, E., Ningsih, A., Triani, M., & Lukman Arief, M. (2022). Brand image sebagai mediasi pengaruh promosi dan harga terhadap keputusan pembelian Pondok Raos di Kota Solok. *Jurnal Manajemen Universitas Bung Hatta*, 17(1), 69–73. Doi: 10.37301/jmubh.v17i1.19986
- Hidayah, N. N. (2017). Penegakan hukum terhadap penggunaan pestisida kimia pada tanaman bawang di Kabupaten Brebes [Working paper]. Universitas Negeri Semarang.
- Islamiah, F., Rusmiati, & Adawiah, R. (2023). Peran citra merek sebagai mediasi pada pengaruh kualitas produk dan harga terhadap keputusan pembelian. *Forum Ekonomi; Jurnal Ekonomi, Manajemen dan Akuntansi*, 25(3), 472-479.
- Keller, K. L. (1993). Conceptualizing, measuring, and managing customer-based brand equity. *Journal of Marketing*, 57(1), 1–22. <https://doi.org/10.2307/1252054>
- Khoirudin, M., Aminah, M., & Johan, I. R. (2026). Building farmer loyalty through marketing mix and brand image of tomato seeds: The mediating role of satisfaction using PLS-SEM approach. *Jurnal Penelitian Pendidikan IPA*, 12(5), 591–601. <https://doi.org/10.29303/jppipa.v12i5.15346>
- Kumar, P., Dwivedi, P., Azad, R., & Kumar, S. (2023). Study on consumer buying behaviour and product preference of insecticides (ampligo) in Muzaffarnagar district of uttar Pradesh. *International Journal for Research Trends and Innovation*, 8(5), 2456-3315.
- Leo, Y. U. & Defrizal. (2023). Pengaruh kualitas produk, harga dan promosi terhadap keputusan pembelian konsumen bima jaya di Sidomulyo. *Jurnal Ilmiah Manajemen dan Bisnis*, 6(1), 286-291.
- Liu, Q., & Wang, X. (2023). The impact of brand trust on consumers' behavior toward agricultural products' regional public brand. *PLOS ONE*, 18(11), e0295133. <https://doi.org/10.1371/journal.pone.0295133>
- Liu, Y., & Zheng, S. (2023). Factors affecting consumers' purchase intention for agriculture products omni-channel. *Frontiers in Psychology*, 13, 948982. <https://doi.org/10.3389/fpsyg.2022.948982>
- Meira, A. P. G., Zanin, L. M., Favaro, B. F., Stedefeldt, E., & da Cunha, D. T. (2025). Pesticide risk perception as an attitudinal mediator: Exploratory research with farm managers and consumers. *Food Research International*, 200, 115449. <https://doi.org/10.1016/j.foodres.2024.115449>
- Mehrabian, A., & Russell, J. A. (1974). *An Approach to Environmental Psychology*. Cambridge, MA:

MIT Press.

- Rana, G. J., Momin, I. A., & Birari, U. (2019). Factors influencing the brand preference and farmers loyalty towards Bt cotton in Sabarkantha district. *International Journal of Chemical Studies*, 7(5), 111-115.
- Ratnasari, I., & Suswardji, E. (2016). Pengaruh kualitas produk dan citra merek terhadap keputusan pembelian produk fungisida PT Bayer Cropscience pada para petani di Kecamatan Rawamerta. *Jurnal Manajerial*, 15(1), 87–96. <https://doi.org/10.17509/manajerial.v15i1.9474>
- Rutsaert, P., Donovan, J., Murphy, M., & Hoffmann, V. (2024). Farmer decision making for hybrid maize seed purchases: Effects of brand loyalty, price discounts and product information. *Agricultural Systems*, 218, 104002. <https://doi.org/10.1016/j.agry.2024.104002>
- Saraswati, A. R., & Rahyuda, K. (2017). Brand image memediasi kualitas produk dan harga dengan keputusan pembelian smartphone Apple di Kota Denpasar. *E-Jurnal Manajemen Unud*, 6(6), 3252-3282.
- Sari, D. A. (2022). The Influence of Personal Selling and Price on Purchasing Decisions with Word of Mouth as an Intervening Variable in Consumers of Oriflame Products in Medan City. Thesis.
- Sarma, P. K. (2022). Farmer behavior towards pesticide use for reduction production risk: A Theory of Planned Behavior. *Cleaner*. <https://doi.org/10.1016/j.clcb.2021.100002>
- Sekaran, U., & Bougie, R. (2017). *Metode Penelitian Bisnis*, Edisi 6, Jakarta: Penerbit Salemba Empat.
- Sihombing, L. A., Suharno, S., Kuleh, K., & Hidayati, T. (2023). The effect of price and product quality on consumer purchasing decisions through brand image. *International Journal of Finance, Economics and Business*, 2(1), 44–60. <https://doi.org/10.56225/ijfeb.v2i1.170>
- Situmorang, H., Noveri, N., Putrina, M., & Fitri, E. R. (2021). Perilaku petani padi sawah dalam menggunakan pestisida kimia di Kecamatan Harau, Kabupaten Lima Puluh Kota, Sumatera Barat, Indonesia. *Agro Bali: Agricultural Journal*, 4(3), 418–424. <https://doi.org/10.37637/ab.v4i3.743>
- Solehat, I., Muani, A., & Dolorosa, E. (2017). Analisis faktor-faktor yang mempengaruhi keputusan pembelian pupuk NPK non subsidi di Kecamatan Binjai Hulu Kabupaten Sintang. *Jurnal Social Economic of Agriculture*, 6(2), 84-96.
- Spence, M. (1973). Job market signaling. *Quarterly Journal of Economics*, 87(3), 355–374. <https://doi.org/10.2307/1882010>
- Suman, S. (2020). Do agro-inputs' brands affect the buying decision process of farmers: A comprehensive study. *Indian Journal of Agricultural Research*, 55(2), 207–211. <https://doi.org/10.18805/IJARE.A-5576>
- Sumantri, A., Edwina, S., & Eliza. (2015). Pengaruh Bauran Pemasaran terhadap Keputusan Konsumen dalam Pembelian Pestisida di UD Agrimart Sejahtera Kota Pangkalan Kerinci Kabupaten Pelalawan. *Jom Faperta*, 2(2), 1-9.

- Yang, H., Zhang, P., & Liu, H. (2023). The influence of the brand image of green agriculture products on China's consumption intention: The mediating role of perceived value. *PLOS ONE*, 18(10), e0292633. <https://doi.org/10.1371/journal.pone.0292633>
- Yasmine, F. A. (2021). Pengaruh harga terhadap keputusan pembelian melalui brand image saat pandemi covid-19. The 2nd Widyagama National Conference on Economics and Business (WNCEB 2021). Program studi manajemen Fakultas Ekonomi dan Bisnis Universitas Widyagama Malang. 358-368.