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HOW GREEN MARKETING MIX INFLUENCES CONSUMER BEHAVIOUR TOWARD ORGANIC AGRICULTURAL PRODUCTS: EVIDENCE ON THE MEDIATING ROLES OF TRUST AND PERCEIVED VALUE

Chutimant Boonnual¹, Suchira Promsri² and Sarapee Chanatup^{3*}

¹King Mongkut's Institute of Technology Ladkrabang, Prince of Chumphon Campus, Thailand, Email: chutimant.bo@kmitl.ac.th

²King Mongkut's Institute of Technology Ladkrabang, Prince of Chumphon Campus, Thailand, Email: 65200341@kmitl.ac.th

³Suratthani Rajabhat University, Thailand, Email; sarapee.cha@sru.ac.th

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Corresponding Author: Sarapee Chanatup
(sarapee.cha@sru.ac.th)

ABSTRACT

This study examines how green marketing mix influences consumer behaviour toward organic agricultural products, with particular attention to the mediating roles of trust and perceived value. Using a quantitative research design, data were collected from 400 consumers of organic agricultural products and analyzed using partial least squares structural equation modelling (PLS-SEM). The results indicate that green marketing mix has a robust positive effect on trust and a significant direct effect on consumer behaviour. Trust, in turn, shows a stable positive association with consumer behaviour. By contrast, the value-related direct paths are weaker and should be interpreted with caution. Although green marketing mix is positively associated with perceived value, and perceived value is positively related to consumer behaviour, these direct effects are statistically fragile when evaluated against confidence-interval criteria. Despite this qualification, the mediation analysis reveals that both trust and perceived value transmit the effect of green marketing mix on consumer behaviour, with the indirect pathway through perceived value showing a comparatively stronger magnitude. The findings therefore suggest that green marketing mix shapes consumer behaviour not only through direct market influence, but also through internal evaluative mechanisms, especially consumers' trust formation and value assessment. The study contributes to the green marketing and sustainable consumption literature by moving beyond purchase intention and offering a broader, mechanism-based explanation of consumer behaviour in the organic agriculture context. Practically, the results imply that marketers should prioritize credibility-building strategies, transparent communication, and value-justification mechanisms in order to encourage more sustainable consumer responses.

KEYWORDS: Green Marketing Mix, Consumer Behaviour, Organic Agricultural Products, Trust, Perceived Value.

1. INTRODUCTION

The market for organic agricultural products has expanded from a niche segment into a significant component of the broader sustainability transition in food systems. Globally, demand for organic food and drink continues to increase, with worldwide retail sales reaching approximately 145 billion euros and organically managed agricultural land approaching 99 million hectares, indicating that organic consumption is no longer a temporary trend but a structurally important market development (Willer, 2026). In Thailand, this momentum is reinforced by national policy. The country's Organic Agriculture Action Plan for 2023–2027 seeks to expand certified organic production, strengthen standards and traceability, and increase the economic value of organic products, reflecting the strategic role of organic agriculture in rural development and value-added competitiveness. These developments make the study of consumer responses to organic agricultural products especially timely in Thailand, where market growth now depends not only on production capacity but also on the ability of firms to influence consumer behaviour effectively.

Despite this favourable market trajectory, consumer adoption of organic products remains far from automatic. Organic and green products possess important credence attributes, meaning that many of their environmental and health-related qualities cannot be directly verified by consumers at the point of purchase. Under such conditions, information asymmetry becomes a central challenge, and firms must rely on credible market signals to communicate product quality, environmental integrity, and authenticity (Spence, 1973; Connelly et al., 2011). This is precisely where green marketing becomes strategically important. Rather than being limited to environmental advertising claims, green marketing is better understood as an integrated set of product, price, place, and promotion decisions designed to reduce environmental harm while creating customer value (Dangelico & Vocalelli, 2017). However, green marketing can generate skepticism when firms overstate environmental claims or fail to support them with verifiable practices, thereby increasing the risk of greenwashing and weakening consumer confidence (Delmas & Burbano, 2011). Accordingly, the effectiveness of a green marketing mix should be judged not only by how "green" it appears, but by whether it can produce meaningful psychological and behavioural responses among consumers.

Among the mechanisms that may explain how green marketing influences market outcomes, trust and perceived value are particularly consequential.

Trust is critical in markets characterized by uncertainty and unverifiable quality because it lowers perceived risk and makes consumers more willing to rely on firms' claims and promises (Mayer et al., 1995). In green consumption settings, this logic has been extended to the notion of green trust, which emphasizes confidence in a brand's environmental performance and sincerity (Chen & Chang, 2013). Perceived value, in turn, refers to the consumer's overall assessment of what is received relative to what is given up, integrating judgments about quality, price, benefits, and sacrifices (Zeithaml, 1988). In organic and sustainable food contexts, prior research suggests that consumers respond not simply to functional product features, but to whether such products are seen as worth the premium, effort, and uncertainty often associated with them (Sirdeshmukh et al., 2002; Konuk, 2018). Taken together, trust and perceived value offer a theoretically coherent explanation for why green marketing activities may succeed or fail in shaping actual consumer responses.

Even so, the current literature still leaves important questions unresolved. First, much of the green marketing and organic food literature concentrates on purchase intention rather than consumer behaviour in a broader processual sense. This distinction matters because consumer behaviour encompasses not only the final purchase decision but also earlier and later stages such as need recognition, information search, evaluation of alternatives, purchase action, and post-purchase behaviour. Second, trust and perceived value are often examined separately, even though both are plausible mediating mechanisms through which green marketing may influence behavioural outcomes. Third, empirical evidence remains relatively limited in the context of Thailand's organic agricultural market, particularly in the Southern Economic Corridor, where the interaction between regional agricultural potential, local entrepreneurship, and sustainable market development gives this setting strategic relevance. The present study addresses these gaps by focusing explicitly on organic agricultural product consumers in Chumphon, Ranong, Surat Thani, and Nakhon Si Thammarat, as specified in the research framework, and by modelling trust and perceived value simultaneously as mediators between green marketing mix and consumer behaviour.

This study therefore makes several contributions. Theoretically, it extends the green marketing literature by shifting attention from narrow intention-based outcomes to a more behaviourally grounded framework centered on consumer

behaviour toward organic agricultural products. It also integrates signalling theory with a value-based evaluation perspective, arguing that consumers respond to green marketing not merely because firms communicate environmental friendliness, but because such communication can reduce uncertainty, build trust, and increase perceived value. Empirically, the study contributes evidence from an emerging-market context where organic agriculture is economically and strategically important but still underexplored in international scholarship. Practically, the findings are expected to inform how organic producers and marketers can design greener products, pricing strategies, distribution systems, and promotional communication in ways that are credible, value-enhancing, and behaviour-shaping rather than merely image-building.

Situated at the intersection of green marketing, sustainable consumption, and consumer behaviour research, this article develops and tests a structural model in which green marketing mix operates as the antecedent, trust and perceived value serve as mediating mechanisms, and consumer behaviour toward organic agricultural products is specified as the outcome. The study pursues three interrelated objectives: first, to examine the direct effect of green marketing mix on consumer behaviour; second, to assess its effects on trust and perceived value; and third, to determine whether these constructs mediate the relationship between green marketing mix and consumer behaviour. On this basis, the article advances hypotheses predicting positive effects of green marketing mix on trust, perceived value, and consumer behaviour, as well as positive effects of trust and perceived value on consumer behaviour, with both variables expected to mediate the focal relationship. By doing so, the study moves beyond intention-based models of green consumption and offers a broader mechanism-based account of how green marketing strategies are translated into consumer behaviour in Thailand's organic agricultural sector.

2. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

2.1. *Green Marketing Mix and Consumer Behaviour Toward Organic Agricultural Products*

Green marketing has evolved from a narrow promotional tactic into a broader strategic orientation that integrates environmental considerations into the core marketing mix. In the foundational literature, green marketing was initially

framed as a response to environmental pressures and ethically oriented consumption, whereas later work emphasized that its effectiveness depends on whether environmental commitments are embedded across product design, pricing, distribution, and communication rather than confined to symbolic claims (Peattie & Crane, 2005). A systematic review by Dangelico and Vocalelli (2017) further clarified that the green marketing mix is best understood as a coordinated bundle of managerial actions, including greener product attributes, environmentally justified pricing, cleaner distribution systems, and credible promotional messages. More recent evidence continues to support the relevance of the 4Ps logic in sustainable markets, showing that the green marketing mix can shape environmental attitudes and purchase-related responses when consumers perceive it as coherent and credible (Su & Li, 2024).

In the context of organic agricultural products, this integrated view is particularly important because organic attributes are not always directly observable at the point of purchase. Consumers often cannot independently verify whether production processes truly meet environmental or health-related standards, making organic quality a classic credence attribute. Under these conditions, marketing actions do more than merely inform; they function as signals that help consumers interpret product authenticity, reduce uncertainty, and form behavioral judgments. Signaling theory is therefore especially relevant in this context. When firms provide consistent signals through certified products, transparent pricing logic, accessible and trustworthy channels, and non-deceptive promotion, consumers are more likely to interpret the offering as authentic and worthy of response (Spence, 1973; Connelly et al., 2011). By contrast, exaggerated or weakly substantiated green claims may be discounted as greenwashing, thereby undermining the credibility of the entire offering (Delmas & Burbano, 2011).

Empirical research also suggests that green marketing can shape outcomes beyond attitudes and purchase intention. Su and Li (2024), for example, found that the green marketing mix positively affects environmental attitudes and purchase intentions in emerging-market settings. In related work on sustainable consumption behavior, digital and social-media-based green marketing stimuli have been shown to influence sustainable consumption through psychological and cognitive processes rather than through simple exposure alone (Nekmahmud et al., 2022). Taken together, these findings indicate that green marketing is capable of shaping broader consumer responses when it is perceived as credible,

consistent, and relevant.

Based on this reasoning, the green marketing mix should exert a positive direct influence on consumer behaviour toward organic agricultural products. When consumers perceive organic products as environmentally responsible, fairly priced in relation to their benefits, accessible through convenient channels, and promoted through credible claims, they are more likely to move from information search and evaluation to purchase and post-purchase engagement.

H1: Green marketing mix positively influences consumer behaviour toward organic agricultural products.

2.2. Green Marketing Mix and Trust

Trust is a central construction in markets characterized by uncertainty, limited consumer expertise, and unverifiable quality claims. Mayer et al. (1995) defined trust as the willingness to accept vulnerability based on positive expectations regarding another party's intentions or conduct. In green and organic markets, this logic becomes especially salient because consumers often must rely on sellers' claims about environmental friendliness, safety, and ethical production without being able to verify them directly. As a result, trust has become a key explanatory construct in research on green brands, green marketing, and organic consumption behaviour (Chen, 2010; Chen & Chang, 2013).

The relationship between green marketing and trust can be explained through signaling theory. When firms adopt a coherent green marketing mix, they send observable signals about attributes that are otherwise difficult for consumers to assess directly. Green product features such as organic certification, safer ingredients, and environmentally sound packaging may signal substantive commitment. Green pricing can communicate fairness when consumers understand why a premium exists and how it reflects environmental or quality-related investment. Green place can reinforce trust by making products available through traceable, reputable, or specialized channels. Green promotion can either strengthen or weaken trust depending on whether consumers perceive the message as transparent or exaggerated. This logic is consistent with prior evidence showing that greenwashing undermines green trust, whereas credible environmental communication and quality-related signals help strengthen it (Chen & Chang, 2013; Delmas & Burbano, 2011).

Empirical studies in organic and green product markets further support this argument. Konuk (2018)

found that trust contributed meaningfully to purchase intentions in the context of organic private-label food. Similarly, Ladwein et al. (2021) emphasized the importance of trust in producers and retailers for organic food purchasing. Related research has also shown that trust helps consumers cope with uncertainty concerning traceability, quality, and authenticity in organic consumption settings (Canova et al., 2020; Roh et al., 2022). Taken together, these studies suggest that a credible green marketing mix should help build trust by reducing ambiguity and signaling sincerity.

H2: Green marketing mix positively influences trust.

2.3. Green Marketing Mix and Perceived Value

Perceived value refers to the consumer's overall assessment of a product's utility based on what is received relative to what is given up (Zeithaml, 1988). This definition remains highly relevant in green and organic markets because consumers often face a complex trade-off among functional benefits, health and environmental benefits, emotional or symbolic rewards, and the sacrifices associated with higher prices, search costs, or uncertainty. Accordingly, perceived value should not be reduced to price alone; rather, it is a multidimensional and net evaluative judgment of whether an offering is worth choosing over available alternatives.

A coherent green marketing mix can shape this value assessment in several ways. Green product attributes may enhance perceived benefits through safety, healthfulness, quality, and environmental responsibility. Green pricing may strengthen perceived value when a premium is interpreted as justified rather than exploitative. Green place may reduce consumer sacrifice by improving convenience, availability, and search efficiency. Green promotion may further enhance value by clarifying benefits, educating consumers, and helping them interpret the meaning of organic or environmental claims. In this sense, the green marketing mix does not merely communicate that a product is environmentally responsible; it also helps consumers evaluate whether such responsibility translates into meaningful utility.

Empirical evidence in organic and green food markets supports this logic. Sultan et al. (2021) found that perceived food value is a central driver of behavioural intention toward organic food within an S-O-R framework. Similarly, Konuk (2018) showed that perceived value plays an important role in explaining purchase intentions toward organic private-label food. In a related green food context,

Woo and Kim (2019) also linked green perceived value to consumer attitudes and buying behavior. Taken together, these studies suggest that when green marketing efforts are perceived as credible, relevant, and worthwhile, they are likely to enhance consumers' value perceptions.

Based on this reasoning, the green marketing mix is expected to exert a positive influence on perceived value. In organic agricultural markets, where consumers often need to justify both price premiums and effortful search, perceived value becomes especially consequential in shaping how green marketing is evaluated.

H3: Green marketing mix positively influences perceived value.

2.4. Trust, Perceived Value, And Consumer Behaviour

Trust is expected to influence consumer behaviour because it reduces perceived risk and facilitates action under conditions of uncertainty. In organic food markets, trust has been linked to consumers' willingness to purchase and to broader buying behaviour because it helps translate favorable beliefs into actual choice under conditions of limited verifiability (Canova et al., 2020; Roh et al., 2022). Related research also underscores the importance of trust in relationships with producers and retailers in shaping organic food purchasing decisions (Ladwein et al., 2021). The behavioral implication is straightforward: when consumers trust that organic products genuinely deliver what is promised, they are more willing to search for them, evaluate them favorably, purchase them, and maintain supportive post-purchase responses.

Perceived value is also expected to positively influence consumer behavior. Consumers are more likely to act when they judge that the benefits of an offer outweigh its associated costs. In green and organic contexts, these benefits may include functional quality, health advantages, environmental contribution, emotional reward, and symbolic alignment with personal values. Empirical evidence supports this logic. Sultan et al. (2021) found that perceived food value stimulates behavioural intention toward organic food, while Konuk (2018) showed that perceived value is an important predictor of purchase intention in the context of organic private-label food. In a related green food context, Woo and Kim (2019) further showed that green perceived value is associated with favorable consumer attitudes and buying behavior. Taken together, these studies suggest that perceived value is not merely an ex-post justification but is likely to

function as an important driver of favorable consumer response.

These arguments lead to the following hypotheses:

H4: Trust positively influences consumer behaviour toward organic agricultural products.

H5: Perceived value positively influences consumer behaviour toward organic agricultural products.

2.5. The Mediating Roles of Trust and Perceived Value

The proposed mediating roles of trust and perceived value follow directly from the theoretical logic developed above. A green marketing mix should not influence consumer behaviour simply because firms adopt environmentally themed strategies. Rather, consumers interpret and respond to those strategies through internal evaluative mechanisms. Trust reflects the extent to which consumers believe that a firm's claims are credible and that its products will satisfy environmental and quality-related expectations. Perceived Value, in turn, reflects whether consumers judge the offering to be worthwhile in light of its expected benefits relative to its associated sacrifices. This dual-path logic is consistent with signaling theory and value-based evaluation: marketing signals reduce uncertainty, shape consumer beliefs, and thereby influence subsequent behavioral responses.

Prior empirical research also supports this type of mediation reasoning. In relational exchange settings, trust and value have been shown to be closely associated with downstream behavioral outcomes, suggesting that consumer responses are often formed through intermediate evaluative processes rather than through direct stimulus alone (Sirdeshmukh et al., 2002). In the organic and green product literature, Roh et al. (2022) showed that green perceived value positively affects trust, which in turn contributes to organic purchase formation. Likewise, Konuk (2018) found that perceived value plays a meaningful role in explaining purchase intentions toward organic private-label food. Taken together, these findings suggest that green marketing initiatives are unlikely to generate strong consumer responses unless they first enhance consumers' trust and value perceptions. Accordingly, trust and perceived value are expected to function as complementary mediating mechanisms linking Green Marketing Mix to Consumer behaviour in the present model.

Therefore, the final hypotheses are proposed as follows:

H6: Trust mediates the relationship between

green marketing mix and consumer behaviour toward organic agricultural products.

H7: Perceived value mediates the relationship between green marketing mix and consumer behaviour toward organic agricultural products.

2.6. Conceptual Framework

Drawing on signalling theory, value-based evaluation, and the consumer decision-making perspective, this study proposes a mechanism-based framework explaining how green marketing mix shapes consumer behaviour toward organic agricultural products through the mediating roles of trust and perceived value. The framework assumes that green marketing is not merely a symbolic

environmental posture, but an integrated strategic configuration of product, price, place, and promotion that communicates environmental commitment and market credibility to consumers (Peattie & Crane, 2005; Dangelico & Vocalelli, 2017). In markets characterized by information asymmetry and credence attributes, such as organic agriculture, these green marketing elements function as signals that help consumers infer authenticity, reduce uncertainty, and evaluate the worth of the offering (Spence, 1973; Connelly et al., 2011). Accordingly, the model posits that green marketing mix influences consumer behaviour both directly and indirectly by strengthening trust and enhancing perceived value. This conceptualization provides the theoretical basis for the proposed hypotheses and the structural model tested in this study.

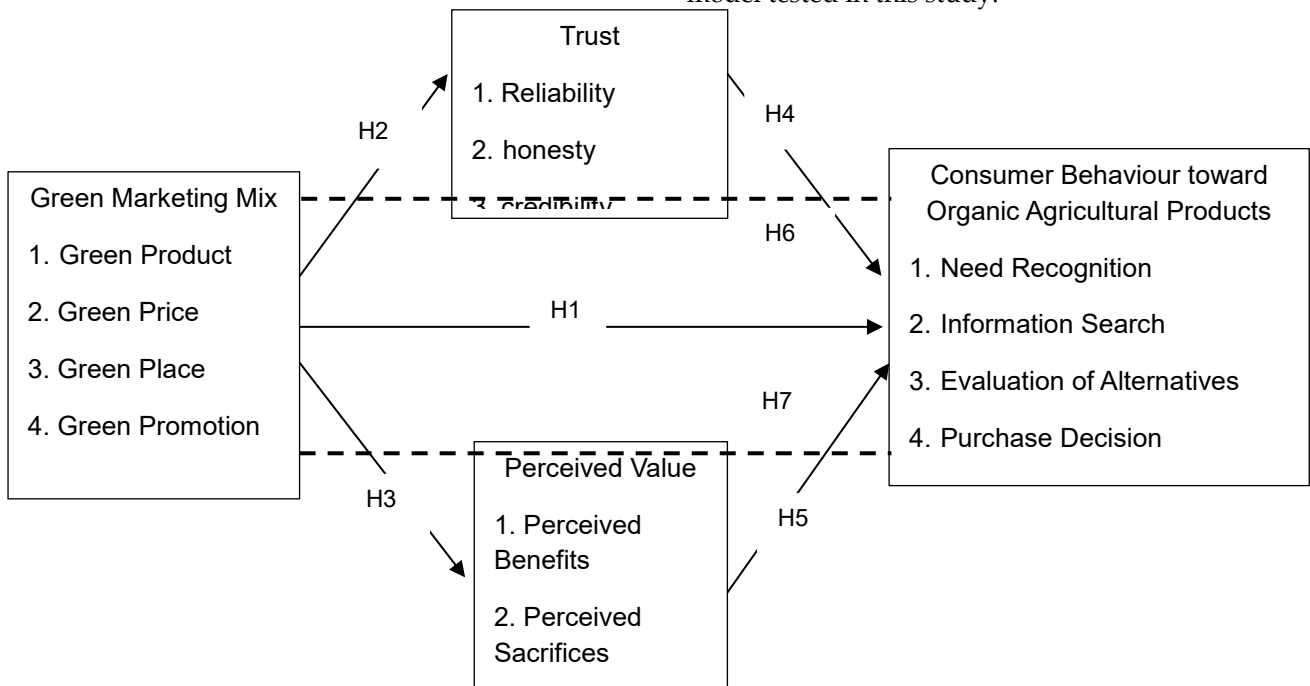


Figure 1: Conceptual Framework.

3. RESEARCH METHODOLOGY

3.1. Research Design and Context

This study employs a quantitative, cross-sectional survey design to examine the structural relationships among green marketing mix, trust, perceived value, and consumer behaviour toward organic agricultural products. A quantitative design is appropriate because the study aims to test theory-driven hypotheses and estimate the magnitude and significance of both direct and indirect relationships among latent constructs in a structured model (Creswell & Creswell, 2018). In line with the conceptual framework, the research is explicitly mechanism-based, focusing not only on whether

green marketing mix influences consumer behavior, but also on whether this influence is transmitted through trust and perceived value.

The empirical context of the study is the organic agricultural market in Southern Thailand, specifically in Chumphon, Ranong, Surat Thani, and Nakhon Si Thammarat. This setting is theoretically relevant because organic agricultural products are characterized by information asymmetrical and credence attributes, meaning that consumers often cannot verify environmental and quality-related claims directly at the point of purchase (Spence, 1973; Connelly et al., 2011). Under such conditions, green marketing cues become particularly important as signals that shape trust, value judgments, and

behavioral responses.

Consistent with the proposed conceptual framework, green marketing mix is treated as the antecedent construct, trust and perceived value are specified as mediating mechanisms, and consumer behaviour toward organic agricultural products is modeled as the outcome construct. This design reflects the study's theoretical position that consumer responses to green marketing are not formed solely through direct exposure to marketing activities, but also through internal evaluative processes that shape how consumers judge credibility and value.

Given the model's prediction-oriented nature, the inclusion of multiple latent constructions, and the presence of mediation paths, the study applies partial least squares structural equation modeling (PLS-SEM) for data analysis. PLS-SEM is appropriate for research that emphasizes theory extension, prediction, and the estimation of complex structural relationships among latent variables, particularly when higher-order constructs and mediation are involved (Hair et al., 2022; Sarstedt et al., 2022).

3.2. Sampling And Data Collection

The target population consisted of consumers aged 18 years and above who resided in Chumphon, Ranong, Surat Thani, or Nakhon Si Thammarat and had previously purchased or consumed organic agricultural products. These criteria were established to ensure that respondents possessed direct experience relevant to the focal constructs and the empirical context of the study.

Data were collected through a self-administered online questionnaire. This approach was appropriate because the study sought standardized perceptual responses across multiple latent constructs from geographically dispersed consumers. Given the absence of a complete sampling frame for organic-product consumers in the study area, a non-probability screening approach was employed in practice.

The target sample size was determined using Cochran's logic for large or unknown populations at the 95% confidence level, which yields a minimum benchmark of 385 cases (Cochran, 1953). To reduce the risk of unusable or incomplete responses, the target was increased to 400, and this number was retained for the final analysis. This sample size is also adequate for PLS-SEM applications involving multiple latent constructs and mediation paths in prediction-oriented models (Hair et al., 2022).

Several procedural steps were taken to improve data quality and reduce the likelihood of method-related bias in this self-report design. Participation

was voluntary, respondents were informed that their answers would be treated confidentially, and they were free to discontinue the survey at any time. In addition, the questionnaire used clear screening questions, straightforward wording, and a structured sequence of sections to reduce ambiguity and evaluation apprehension. Such procedural remedies are consistent with established recommendations for minimizing common method bias in survey-based behavioral research (Podsakoff et al., 2003; MacKenzie & Podsakoff, 2012). Ethics exemption for this study was granted by the Human Research Ethics Committee of King Mongkut's Institute of Technology Ladkrabang (EC-KMITL_69_091; 9 March 2026).

3.3. Measurement Of Variables

To validate the proposed research model, this study employed Partial Least Squares Structural Equation All focal constructs were measured using a structured multi-item questionnaire developed from the conceptual domains identified in the research framework and informed by established literature on green marketing, trust, perceived value, and consumer behaviour. The instrument was organized into sections covering respondent characteristics, green marketing mix, trust, perceived value, and consumer behaviour toward organic agricultural products. This multi-item design was adopted to capture the latent nature of the focal constructs and to support structural modelling using PLS-SEM (Hair et al., 2022).

Green marketing mix was specified as a multidimensional construct reflecting four first-order components: green product, green price, green place, and green promotion. This specification is consistent with the view that green marketing should be understood not as a single communication tactic, but as an integrated strategic configuration through which firms communicate environmental commitment and market credibility (Peattie & Crane, 2005; Dangelico & Vocalelli, 2017).

Trust was measured as consumers' evaluative belief in the reliability and credibility of the product, brand, or producer. Consistent with the broader trust literature, the construct captures expectations regarding dependability, honesty, and the extent to which the offering is believed to deliver what it promises (Mayer et al., 1995; Chen & Chang, 2013).

Perceived Value was operationalized as the consumer's overall evaluation of whether the benefits of organic agricultural products justify the sacrifices associated with obtaining them. This conceptualization follows Zeithaml's (1988)

definition of value as an assessment of what is received relative to what is given up. Because value in organic-product markets involves both positive utility and sacrifice-related considerations, the construct was modeled to reflect a benefit-sacrifice logic rather than a purely one-directional evaluative perception.

Consumer behaviour toward organic agricultural products was measured as a broader behavioral response process rather than as purchase intention alone. In line with the study's framework, the construct covered key stages of consumer response, including problem recognition, information search, evaluation of alternatives, purchase decision, and

post-purchase response, which is consistent with the broader consumer decision-making perspective (Kotler & Keller, 2016).

All items were measured using a five-point Likert scale ranging from 1 ("strongly disagree") to 5 ("strongly agree"). In the final analysis, the adequacy of the instrument was assessed primarily through the PLS-SEM measurement model, including indicator loadings, internal consistency reliability, convergent validity, and discriminant validity, which are appropriate criteria for evaluating latent-variable measurement in this analytical context (Hair et al., 2022; Henseler et al., 2015).

Table 1: Summary of Measurement of Variables.

Construct	Role in Model	Dimensions	Operational Definition	Measurement Focus	Key Sources
Green Marketing Mix	Independent variable	Green Product, Green Price, Green Place, Green Promotion	Consumers' overall perception that the firm's marketing activities are environmentally responsible, credible, and relevant across product attributes, pricing practices, distribution channels, and promotional communication	The extent to which respondents perceive the marketing mix as reflecting environmental commitment and market credibility	Peattie and Crane (2005); Dangelico and Vocalelli (2017)
Trust	Mediating variable	Reliability, honesty, credibility	Consumers' evaluative belief that the product, brand, or producer is dependable, truthful, and capable of delivering what is promised in terms of quality, safety, and environmental responsibility	The extent to which respondents believe that organic products and related green marketing claims are credible and trustworthy	Mayer et al. (1995); Chen and Chang (2013)
Perceived Value	Mediating variable	Perceived Benefits, Perceived Sacrifices	Consumers' overall evaluation of whether the benefits obtained from organic agricultural products justify the monetary, effort-related, and other sacrifices associated with obtaining them	The extent to which respondents judge organic products as worthwhile based on a benefit-sacrifice trade-off	Zeithaml (1988); Konuk (2018)
Consumer Behaviour toward Organic Agricultural Products	Dependent variable	Need recognition, information search, evaluation of alternatives, purchase decision, post-purchase behavior	Consumers' broader behavioural response toward organic agricultural products across key stages of the decision-making process rather than purchase intention alone	The extent to which respondents report behavioral tendencies related to searching, evaluating, purchasing, and responding after purchase	Kotler and Keller (2016); related consumer behaviour literature

4. ESULTS

4.1. Measurement Model Assessment

The measurement model was assessed prior to structural testing to ensure that the focal constructs were measured with adequate reliability and validity. Because green marketing mix, trust, perceived value, and consumer behaviour were conceptualized as multidimensional constructs, the evaluation considered both the lower-order dimensions and the higher-order conceptualization.

At the first-order level, all reflective dimensions demonstrated satisfactory measurement quality. Indicator loadings were consistently high, and the reliability and convergent-validity statistics were within acceptable ranges. Specifically, Cronbach's alpha values ranged from .842 to .886, composite reliability values ranged from .894 to .922, and average variance extracted (AVE) values ranged from .679 to .746. Taken together, these results indicate acceptable internal consistency and convergent validity for the lower-order constructs.

To provide a clearer overview of the lower-order measurement quality, Table 2 summarizes the reliability and convergent validity results for all first-order reflective constructs. All first-order reflective

constructs met acceptable measurement thresholds. Indicator loadings were consistently high, while Cronbach's alpha, rho_A, composite reliability, and AVE values all fell within recommended ranges.

Table 2: Reliability And Convergent Validity of the First-Order Constructs.

Construct	No. of Items	Loading Range	Cronbach's α	rho_A	Composite Reliability	AVE
CBD	4	0.838–0.884	0.883	0.885	0.920	0.741
CBE	4	0.835–0.884	0.886	0.888	0.922	0.746
CBI	4	0.858–0.868	0.884	0.884	0.920	0.742
CBN	4	0.842–0.865	0.875	0.875	0.914	0.727
CBP	4	0.816–0.889	0.877	0.878	0.916	0.731
GPD	4	0.823–0.877	0.862	0.862	0.907	0.710
GPL	4	0.837–0.896	0.877	0.878	0.915	0.730
GPM	4	0.840–0.889	0.878	0.879	0.916	0.731
GPR	4	0.837–0.886	0.875	0.876	0.914	0.726
PVR	4	0.810–0.851	0.842	0.843	0.894	0.679
PVS	4	0.828–0.885	0.868	0.871	0.909	0.715
TRB	4	0.834–0.884	0.875	0.876	0.914	0.726
TRC	4	0.855–0.895	0.886	0.886	0.921	0.744
TRI	4	0.845–0.880	0.878	0.879	0.916	0.732

At the higher-order level, green marketing mix and consumer behaviour demonstrated strong reliability and acceptable convergent validity. Trust also showed high internal consistency, although its AVE (.495) fell slightly below the conventional .50 threshold, indicating marginal convergent validity. Perceived value was the weakest component of the higher-order measurement model and should therefore be interpreted with caution. Although the perceived-benefit dimension loaded positively and significantly on the higher-order construct ($\beta = .946$, $p = .028$), the perceived-sacrifice dimension loaded negatively as theoretically expected but did not reach

conventional statistical significance ($\beta = -.868$, $p = .074$). This pattern is substantively meaningful for a benefit-sacrifice specification of value, but it also indicates that the higher-order Perceived Value construct is less stable than the other focal constructs under conventional reflective measurement criteria. Table 3 reports the reliability and convergent validity results for the higher-order constructs and their dimensions. The results show that green marketing mix and consumer behaviour demonstrated strong higher-order measurement properties, whereas Trust showed marginal convergent validity and Perceived Value should be interpreted with greater caution.

Table 3: Reliability And Convergent Validity of the Higher-Order Constructs.

Higher-order construct	Dimension	β	SE	t-value	p-value	95% BC CI LL	95% BC CI UL	Cronbach's α	rho_A	CR	AVE
Green Marketing Mix (GP)	GPD	0.948	0.012	77.382	< .001	0.922	0.970	0.936	0.937	0.944	0.512
	GPL	0.949	0.013	70.636	< .001	0.920	0.972				
	GPM	0.936	0.013	71.145	< .001	0.907	0.959				
	GPR	0.947	0.013	71.502	< .001	0.919	0.971				
Trust (TR)	TRB	0.955	0.013	72.779	< .001	0.927	0.979	0.907	0.908	0.922	0.495
	TRC	0.964	0.013	73.656	< .001	0.936	0.987				
	TRI	0.950	0.016	60.717	< .001	0.917	0.978				
Perceived Value (PV)	PVR	0.946	0.430	2.200	.028	-0.904	0.997	0.676	0.801	0.011	0.416
	PVS	-0.868	0.485	1.789	.074	-0.921	0.918				
Consumer Behaviour (CB)	CBD	0.950	0.011	83.543	< .001	0.926	0.970	0.956	0.956	0.960	0.546
	CBE	0.913	0.014	63.052	< .001	0.879	0.937				
	CBI	0.947	0.012	81.009	< .001	0.922	0.968				
	CBN	0.925	0.014	67.135	< .001	0.894	0.949				
	CBP	0.936	0.012	76.387	< .001	0.911	0.959				

Note: BC CI = Bias-Corrected Confidence Interval; CR = Composite Reliability; AVE = Average Variance Extracted. Green Marketing Mix and Consumer Behaviour Met Recommended Criteria at the Higher-Order Level.

Trust showed strong internal consistency but marginal convergent validity (AVE = .495). Perceived Value should be interpreted with caution because the

higher-order construct was specified as a benefit-sacrifice trade-off, yielding a theoretically meaningful negative loading for the sacrifice

dimension but weak conventional reflective reliability.

Discriminant validity was assessed using the heterotrait-monotrait ratio (HTMT). All HTMT values among the four focal higher-order constructs were below the conservative threshold of .85, ranging from .334 to .583. Specifically, the HTMT values were .423 between consumer behaviour and green marketing mix, .497 between consumer behaviour and perceived value, .430 between consumer

behaviour and trust, .583 between green marketing mix and perceived value, .356 between green marketing mix and trust, and .334 between perceived value and trust. These results support discriminant validity among the focal higher-order constructs. Nevertheless, acceptable discriminant validity does not remove the need for caution regarding the higher-order specification of perceived value. Table 4 presents the HTMT values for the higher-order constructs.

Table 4: Discriminant Validity of the Higher-Order Constructs (HTMT).

Construct	CB	GP	PV	TR
CB	–	0.423	0.497	0.430
GP	0.423	–	0.583	0.356
PV	0.497	0.583	–	0.334
TR	0.430	0.356	0.334	–

4.2. Structural Model Assessment and Mediation Analysis

After the adequacy of the measurement model was established, the structural model was assessed to test the proposed hypotheses. Collinearity diagnostics indicated no critical multicollinearity concerns among the predictor constructs. The structural results showed that green marketing mix had a robust positive effect on trust ($\beta = .357$, $t = 7.252$, $p < .001$) and a significant positive direct effect on consumer behaviour ($\beta = .132$, $t = 2.470$, $p = .014$). Trust also showed a stable positive effect on consumer behaviour ($\beta = .272$, $t = 5.679$, $p < .001$).

By contrast, the value-related direct paths were weaker and should be interpreted more cautiously. Green marketing mix was positively associated with perceived value ($\beta = .587$, $t = 2.078$, $p = .038$), and perceived value was positively related to consumer behaviour ($\beta = .332$, $t = 1.981$, $p = .048$). However, the 95% bias-corrected confidence intervals for both relationships still included zero. Accordingly, although these two paths met the conventional .05 threshold based on bootstrap t and p values, they are better characterized as statistically fragile rather than robustly supported. Table 5 reports the direct structural relationships, together with the corresponding hypothesis-testing results.

Table 5: Direct Effects and Hypothesis Testing.

Hypothesis	Path	β	SE	t-value	p-value	95% BC CI LL	95% BC CI UL	f ²	Decision
H1	GP → CB	0.132	0.053	2.470	.014	0.028	0.239	0.031	Supported
H2	GP → TR	0.357	0.049	7.252	< .001	0.259	0.453	0.121	Supported
H3	GP → PV	0.587	0.282	2.078	.038	-0.577	0.669	0.349	Marginal support*
H4	TR → CB	0.272	0.048	5.679	< .001	0.178	0.363	0.087	Supported
H5	PV → CB	0.332	0.168	1.981	.048	-0.324	0.451	0.077	Marginal support*

As shown in Table 5, H1, H2, and H4 received clear empirical support. By contrast, H3 and H5 reached conventional significance based on p -values, but their 95% bias-corrected confidence intervals still included zero. These paths were therefore interpreted as providing only marginal support.

The mediation analysis provided stronger support for the indirect relationships than for some of the direct value-related paths. The indirect effect of green marketing mix on consumer behaviour through trust was positive and statistically

significant ($\beta = .097$, $t = 4.277$, $p < .001$). The indirect effect through perceived value was also positive and statistically significant ($\beta = .195$, $t = 5.206$, $p < .001$), and its magnitude was larger than that of the trust pathway. When both specific indirect effects were considered jointly, the total indirect effect of green marketing mix on consumer behaviour remained significant ($\beta = .292$, $t = 7.103$, $p < .001$). Table 6 presents the indirect effects and mediation results for the proposed model.

Table 6: Indirect Effects and Mediation Results.

Hypothesis	Indirect path	β	SE	t-value	p-value	95% BC CI LL	95% BC CI UL	Decision
—	GP → CB (total indirect effect)	0.292	0.041	7.103	< .001	0.216	0.377	Significant
H6	GP → TR → CB	0.097	0.023	4.277	< .001	0.059	0.146	Supported
H7	GP → PV → CB	0.195	0.037	5.206	< .001	0.128	0.274	Supported

As shown in Table 6, both indirect paths were statistically significant, supporting the mediating roles of trust and perceived value. The indirect pathway through perceived value was stronger in magnitude, although the corresponding direct value-related paths remained statistically fragile.

This pattern is substantively important. Although the direct paths involving perceived value were statistically fragile, the indirect pathway through perceived value was robust. This suggests that perceived value may function more convincingly as a transmission mechanism within the broader behavioral process than as a stand-alone direct predictor under the present higher-order specification. Because the direct effect of green marketing mix on consumer behaviour remained significant after the mediators were included in the model, the overall pattern is best interpreted as

partial mediation rather than full mediation.

The explanatory power of the model was moderate. Green marketing mix explained 10.8% of the variance in Trust ($R^2 = .108$) and 25.9% of the variance in perceived value ($R^2 = .259$). When green marketing mix, trust, and perceived value were considered jointly, the model explained 29.6% of the variance in Consumer behaviour ($R^2 = .296$). The effect-size estimates further indicated that green marketing mix exerted a moderate effect on perceived value ($f^2 = .349$), a small-to-moderate effect on Trust ($f^2 = .121$), and a small direct effect on consumer behaviour ($f^2 = .031$). Trust ($f^2 = .087$) and Perceived Value ($f^2 = .077$) made additional small contributions to consumer behavior. Table 7 summarizes the explanatory power of the model and the descriptive model-fit index.

Table 7: Explanatory Power and Model Fit.

Endogenous construct / Index	Value	Interpretation
Trust (TR)		
R ²	0.108	Weak to moderate explanatory power
Adjusted R ²	0.106	Consistent with limited but meaningful variance explained
Perceived Value (PV)		
R ²	0.259	Moderate explanatory power
Adjusted R ²	0.257	Indicates meaningful variance explained by Green Marketing Mix
Consumer Behaviour (CB)		
R ²	0.296	Moderate explanatory power
Adjusted R ²	0.291	Suggests the model explains a meaningful proportion of behavioral variance
Model fit		
SRMR	0.078	Descriptively acceptable model fit

Note. R² Values Indicate the Proportion of Variance Explained in Each Endogenous Construct.

Adjusted R² values account for model complexity. SRMR = standardized root means square residual. In line with current PLS-SEM guidance, SRMR is reported as a descriptive fit index, whereas model evaluation relies more substantively on measurement quality, path coefficients, indirect effects, and explanatory power.

Figure 2 illustrates the measurement model of the study, including the relationships between the higher-order constructs and their underlying dimensions. The figure provides a visual representation of the latent-variable structure used for subsequent reliability, validity, and structural assessments.

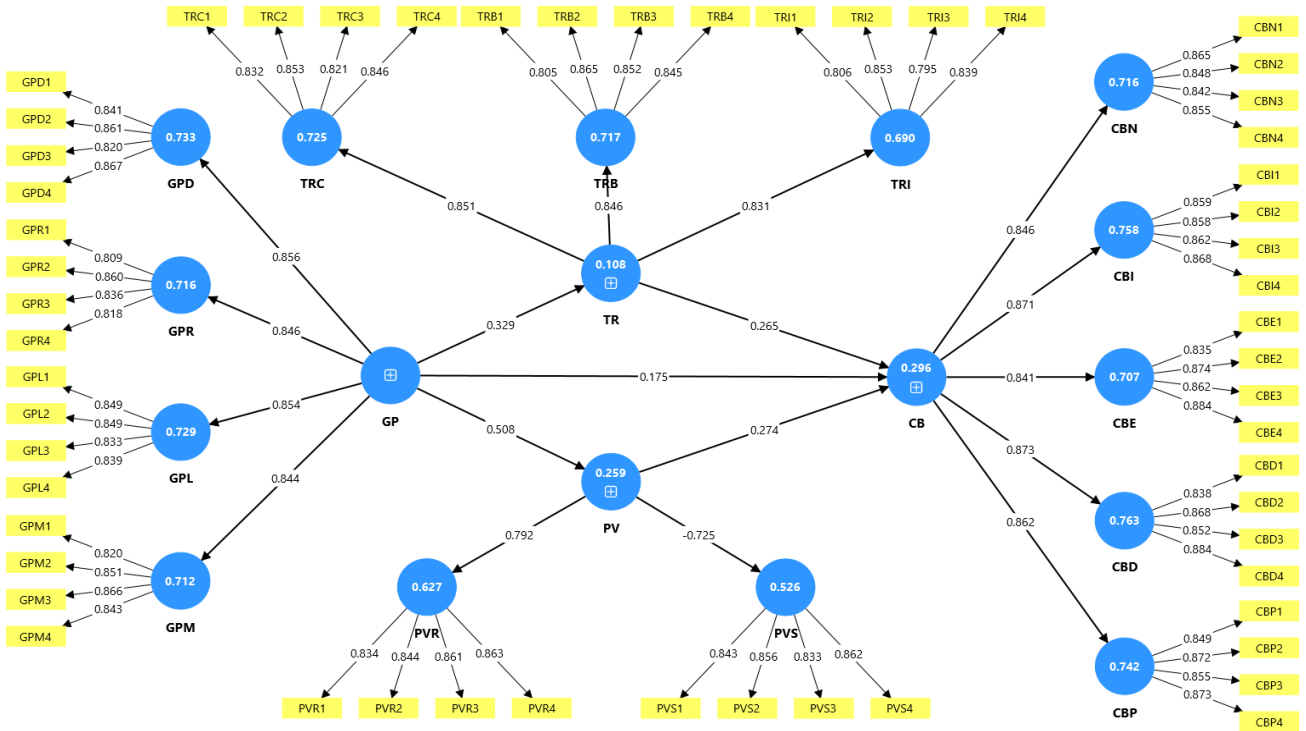


Figure 2: Measurement Model.

5. DISCUSSION OF RESEARCH FINDINGS

The findings of this study broadly support the article’s central proposition that green marketing mix influences consumer behaviour toward organic agricultural products both directly and indirectly through trust and perceived value. However, the evidence is not equally strong across all structural paths. More specifically, the trust-related relationships proved to be more robust and stable than the direct value-related paths. This pattern is important because it suggests that the behavioral influence of green marketing mix in the organic agricultural context is transmitted more convincingly through credibility-based mechanisms than through uniformly strong direct effects across all evaluative pathways.

The direct effect of green marketing mix on consumer behaviour indicates that environmentally oriented marketing practices can shape broader consumer responses beyond attitudinal or intention-based outcomes. This finding reinforces the view that green marketing should not be understood merely as a symbolic communication tactic, but as an integrated strategic configuration of product, price, place, and promotion that can influence how consumers search, evaluate, purchase, and respond after purchase. In this respect, the present study extends prior work that has predominantly focused on green purchase intention by showing that green marketing mix can also influence a broader

behavioral process in the context of organic agricultural products.

At the same time, the structural results showed that green marketing mix had a robust positive effect on trust, and that trust, in turn, had a stable positive effect on consumer behavior. These findings are strongly consistent with signalling theory. In markets characterized by information asymmetry and credence attributes, consumers cannot easily verify whether products genuinely meet environmental and quality-related claims. Under such conditions, a coherent green marketing mix appears to function as a credible signal that reduces uncertainty and supports trust formation. Once trust is established, consumers are more willing to act on favourable evaluations, including engaging in information search, evaluating products positively, making purchase decisions, and maintaining supportive post-purchase responses. The trust pathway therefore emerges as the most stable and empirically defensible mechanism in the present model.

By contrast, the value-related relationships require more careful interpretation. Although green marketing mix was positively associated with perceived value, and perceived value was positively related to consumer behavior, both direct paths were statistically fragile when evaluated against bias-corrected confidence-interval criteria. Accordingly, these effects should not be interpreted as equally robust relative to the trust-based relationships. Even

so, the value pathway remains theoretically meaningful. In organic agricultural markets, consumers often face a trade-off between the benefits of environmental responsibility, healthfulness, and product quality on the one hand, and the sacrifices associated with price premiums, search effort, and uncertainty on the other. In this sense, Perceived Value continues to matter because green marketing helps consumers determine whether the offering is worth choosing in net evaluative terms.

A particularly important result is that the indirect pathway through perceived value was significant and substantively stronger than the indirect pathway through Trust, even though the direct value-related paths were less stable. This pattern suggests that Perceived Value may operate more convincingly as a transmission mechanism within the broader behavioural process than as a stand-alone direct predictor under the present higher-order specification. Put differently, value may be more influential when it functions as part of the process through which green marketing mix is translated into behaviour, rather than as an independently strong direct driver in the structural model. This interpretation helps reconcile the theoretical importance of value with the more cautious statistical treatment required by the present findings.

Taken together, the results indicate that green marketing mix affects consumer behaviour through two complementary but not equally stable mechanisms. Trust represents the more robust credibility-based route through which green marketing reduces uncertainty and supports action. Perceived value, by contrast, represents a meaningful but more measurement-sensitive evaluative route through which consumers assess whether the offering justifies its associated benefits and sacrifices. The coexistence of these two pathways supports the article's mechanism-based framework, while also suggesting that the internal processes connecting green marketing to consumer behaviour are more nuanced than a simple direct-effects model would imply.

From a theoretical perspective, this study makes several contributions. First, it extends the green marketing literature by moving beyond intention-based outcomes and examining a broader consumer behaviour process. This is important because consumer responses to organic agricultural products are not limited to purchase intention alone, but involve earlier and later stages of decision making, including information search, evaluation, purchase, and post-purchase response. Second, the study integrates signalling theory with value-based

evaluation in a way that clarifies how green marketing influences consumer behaviour through intermediate mechanisms rather than through direct exposure alone. The findings suggest that green marketing works partly because it reduces uncertainty and enhances credibility, and partly because it helps consumers judge whether the offering is worthwhile. Third, the study contributes context-specific evidence from the organic agricultural market in Southern Thailand, where the role of trust, authenticity, and value justification is especially salient under conditions of limited verifiability.

The findings also carry important managerial implications. For marketers of organic agricultural products, the strongest practical message is that credibility-building mechanisms should be prioritized. Because the trust pathway proved to be the most stable route to consumer behaviour, firms should invest in clear certification, traceability, verifiable environmental claims, trustworthy packaging information, and transparent communication across channels. Green marketing appears to be most effective when consumers perceive it as coherent and sincere rather than exaggerated or symbolic. In practical terms, marketers should ensure that green product attributes, price justifications, distribution channels, and promotional communication reinforce one another as credible signals.

Perceived Value also remains important, but the present findings suggest that value-oriented communication should be framed carefully. Rather than assuming that value functions as a uniformly strong direct driver of behaviour, marketers should use green marketing to help consumers justify why the product is worth choosing despite premium prices or effortful search. This means clarifying not only environmental benefits, but also health, safety, quality, and longer-term utility. In other words, value communication should work as a justification mechanism that supports consumer evaluation and complements trust formation, rather than being treated as an isolated persuasive appeal.

Despite these contributions, the study has several limitations. First, the cross-sectional design limits strong causal inference over time. Although the proposed relationships are theoretically grounded, longitudinal or multi-wave designs would provide stronger evidence regarding temporal ordering. Second, the data were collected through self-reported perceptions, which means that common method bias cannot be ruled out entirely, even though procedural remedies were applied during questionnaire design

and data collection. Third, the empirical context was limited to consumers in four provinces in Southern Thailand, which may restrict generalizability to other regional or national settings.

A further limitation concerns the higher-order specification of Perceived Value. Although the lower-order dimensions of benefit and sacrifice were conceptually meaningful, the higher-order construct showed weaker conventional reflective reliability and convergent-validity characteristics than the other focal constructs. This means that the value-related findings should be interpreted with caution, particularly at the direct-path level. Future research should therefore reconsider how Perceived Value is modeled in organic-product contexts and examine whether alternative higher-order specifications, including more explicitly composite or formative approaches where theoretically justified, provide a better representation of value as a benefit-sacrifice trade-off.

Future studies may also extend the model by incorporating additional moderators or boundary conditions, such as environmental concern, certification familiarity, product knowledge, price sensitivity, or income differences. Such variables may help explain when trust-based or value-based mechanisms become more or less influential. In addition, future research could compare whether the relative strength of Trust and Perceived Value as mediators remains stable across different organic-product categories, regional markets, or retail formats.

6. CONCLUSION

This study examined how green marketing mix influences consumer behaviour toward organic agricultural products through the mediating roles of trust and perceived value. The findings show that green marketing mix affects consumer behaviour both directly and indirectly, thereby supporting the study's mechanism-based framework. More specifically, the results indicate that Trust serves as the more robust and stable pathway through which green marketing is translated into consumer

response, whereas perceived value remains theoretically meaningful but statistically more fragile at the direct-path level under the present higher-order specification.

These findings contribute to the green marketing and sustainable consumption literature in three important ways. First, the study moves beyond the dominant focus on purchase intention and examines a broader consumer behaviour process that includes information search, evaluation, purchase, and post-purchase response. Second, it demonstrates that the effect of green marketing is not explained solely by direct market influence, but also by internal evaluative mechanisms through which consumers interpret credibility and worth. Third, it provides context-specific evidence from the organic agricultural sector in Southern Thailand, where information asymmetry, credence attributes, and uncertainty make trust and value judgment especially important in shaping consumer responses.

From a practical standpoint, the results suggest that marketers of organic agricultural products should treat green marketing as an integrated and credibility-sensitive strategy rather than as a symbolic environmental message alone. In particular, firms should prioritize trust-building mechanisms such as certification, traceability, transparent claims, and consistent communication across product, price, place, and promotion. At the same time, value-oriented communication remains important, especially when it helps consumers justify price premiums and effortful search by clarifying the health, environmental, and quality-related benefits of organic products.

Overall, this study concludes that green marketing mix can play a meaningful role in shaping sustainable consumer behaviour in the organic agricultural market, but its influence is transmitted more convincingly through credibility-based and evaluative processes than through uniformly strong direct effects across all paths. By highlighting the differentiated roles of trust and perceived value, the study offers a more nuanced explanation of how green marketing strategies are translated into consumer behaviour in practice.

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