

Enhancing Organic Agricultural Products: Analyzing Communication and Decision-Making Determinants

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Abstract

This study was a collaborative effort focused on (1) analyzing communication processes and assessing perceptions to support the development and enhancement of organic agricultural products in the Doi Saket District, Chiang Mai Province, and (2) investigating the determinants influencing decision-making processes for purchasing organic agricultural products in the same district. A mixed-methods research approach was employed. The qualitative inquiry involved informal interviews and participatory observations with community leaders, community enterprise leaders, and representatives of organic farmers in the Doi Saket District. Concurrently, the quantitative research used inferential statistics to collect essential and empirical data from real locations, surveying 328 people. This collaborative approach ensured that all stakeholders were included and their perspectives were considered in the research process.

The findings indicated that farmers were actively engaged in communication efforts by establishing community organizations that fostered collective self-reliance. Village elders and leaders of agricultural groups within these communities played crucial roles in facilitating participatory engagement, leading to the effective implementation of initiatives. This process facilitated the development of packaging and product branding strategies designed to convey organic agricultural products' safety and quality standards. The study also revealed the significant influence of packaging and branding elements on the decision-making process for purchasing organic farming products, accounting for up to 14.6% of the variance in purchasing decisions.

Keywords: Communication process, Product valuation, Consumer behavior, Organic agriculture products

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การยกระดับสินค้าเกษตรอินทรีย์: วิเคราะห์การสื่อสาร และปัจจัยกำหนดการตัดสินใจซื้อ

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บทคัดย่อ

งานวิจัยนี้มีวัตถุประสงค์ 1) เพื่อวิเคราะห์การสื่อสารและประเมินการรับรู้การสื่อสาร เพื่อพัฒนาและยกระดับผลิตภัณฑ์เกษตรอินทรีย์ อำเภอดอยสะเก็ด จังหวัดเชียงใหม่ และ 2) เพื่อศึกษาปัจจัยที่มีอิทธิพลต่อการตัดสินใจซื้อผลิตภัณฑ์เกษตรอินทรีย์ อำเภอดอยสะเก็ด จังหวัดเชียงใหม่ โดยใช้ระเบียบวิธีวิจัยเชิงผสมวิธีแบบคู่ขนาน ในส่วนของการวิจัยเชิงปริมาณ ผู้วิจัยใช้สถิติเชิงอนุมานทำการรวบรวมข้อมูลสำคัญและลงพื้นที่เก็บข้อมูลเชิงประจักษ์จากสถานที่จริง สัมภาษณ์ตัวอย่างจำนวน 328 คน เครื่องมือที่ใช้ในการเก็บข้อมูลเป็นแบบสอบถาม ส่วนการวิจัยเชิงคุณภาพ ทำการสัมภาษณ์แบบไม่เป็นทางการและการสังเกตการณ์แบบมีส่วนร่วมของกลุ่มผู้นำชุมชน ผู้นำกลุ่มวิสาหกิจชุมชน และตัวแทนกลุ่มเกษตรกรเกษตรอินทรีย์ ในพื้นที่อำเภอดอยสะเก็ด แล้วนำผลการสัมภาษณ์มาประกอบการวิเคราะห์ เพื่อให้การตอบคำถามของการวิจัยสมบูรณ์ครบถ้วน

ผลการศึกษาพบว่า กลุ่มตัวอย่างซึ่งได้แก่ตัวแทนกลุ่มเกษตรกรมีกระบวนการสื่อสารโดยการสร้างองค์กรในชุมชนให้มีศักยภาพในการพึ่งตนเองแบบมีส่วนร่วม โดยมีผู้ใหญ่บ้านและผู้นำกลุ่มอาชีพเกษตรกรในชุมชนเป็นกลุ่มสำคัญในการขับเคลื่อนการส่งเสริมอาชีพให้กับชุมชนร่วมกับนักวิจัย ผ่านการสื่อสารโดยการกระจายข้อมูลให้กับสมาชิกในกลุ่มเกษตรกรเกษตรอินทรีย์ได้รับรู้รับทราบ นอกจากนี้ ยังเปิดโอกาสให้สมาชิกในชุมชนมีส่วนร่วมผ่านการแสดงความคิดเห็นร่วมกันของคนในกลุ่ม เพื่อแก้ไขปัญหาและดำเนินกิจกรรมร่วมกัน ในส่วนของปัจจัยที่มีอิทธิพลต่อการตัดสินใจซื้อผลิตภัณฑ์เกษตรอินทรีย์ พบว่ามี 2 ปัจจัยที่ส่งผลต่อการตัดสินใจซื้อ ได้แก่ ปัจจัยที่ 1 ด้านบรรจุภัณฑ์ และปัจจัยที่ 2 ด้านตราสินค้า ซึ่งสามารถอธิบายความผันแปรของการตัดสินใจซื้อได้ร้อยละ 14.6

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Introduction

The COVID-19 pandemic since early 2020 has significantly impacted the livelihoods of Thai people and the Thai economy, exacerbating existing inequalities in the economic system. Agricultural households are among the groups most adversely affected by this crisis due to structural issues in the agricultural sector (Attavanich et al., 2019). However, this crisis also presents opportunities, such as the availability of a young and skilled workforce ready to contribute to local economic and agricultural development, the push for farmers to adopt digital technologies to increase productivity and access markets, and the potential for strengthening local institutions and self-reliant local economies.

While the Thai economy is projected to recover gradually after the first quarter of 2024, the agricultural sector continues to face challenges. Most Thai farmers still practice mono-cropping, a high-risk, low-return approach, particularly for significant crops susceptible to global oversupply (Chantarat et al., 2019). Despite substantial government budgets allocated to the agricultural sector annually, farmers face rising production costs, low net incomes, high indebtedness, and vulnerability.

Structural changes in Thai agriculture mirror global trends, with a reduction in the labor force compensated by increased mechanization and modern technology adoption. Growth in the sector has shifted from quantitative expansion to productivity-driven quality improvements. While Thailand initially experienced rapid productivity growth, it has fallen behind neighboring countries.

In response, the Office of Agricultural Economics (OAE) under the Ministry of Agriculture and Cooperatives has revised the National Organic Agriculture Development Strategy into the Organic Agriculture Operational Plan 2017–2022. This plan targets an average annual growth rate of 3% for the organic product market value, expansion of organic farming area to at least 1.3 million rai, and at least 80,000 organic farmers by 2022. Key development areas include research promotion, database development, knowledge dissemination, production and management improvement, and market, service, and standards development for organic agriculture (Torzkrub, 2020).

In 2021, the government, led by the Ministry of Agriculture and Cooperatives, implemented over 200 integrated projects with a budget of 1.9 billion baht to promote organic agricultural consumption successfully. These efforts will continue to expand to hotels, resorts, restaurants, farmer support, and green markets (Ministry of Agriculture and Cooperatives, 2021). Organic agriculture aims to sustainably produce high-quality, safe food without harmful chemicals or toxins. It also presents financial opportunities for low-income farmers, especially in agricultural areas.

The Ministry of Agriculture and Cooperatives has promoted organic products through subsidies and increased consumption, supporting Thai farmers' transition to organic cultivation while benefiting health and ecological balance. The global organic market, valued at 3.55 trillion baht annually and growing, presents an attractive opportunity. Thailand's organic market is worth approximately 3,000 million baht, with domestic consumption of 900 million baht and exports of 2,100 million baht. Thailand is recognized for its potential to produce high-standard organic products. It is well-positioned geographically and logistically to become an ASEAN leader in organic agriculture (Ministry of Agriculture and Cooperatives, 2021). Therefore, Doi Saket District in Chiang Mai Province is an agricultural area with high-quality resources but low farmer incomes, impacting their quality of life (Khamjom, 2006).

Previous research by Ratanavararak et al. (2019) has identified communication as a crucial factor enabling low-income farmers to develop and improve their organic agricultural production efficiently. Appropriate and effective communication can help farmers understand proper production methods, access timely information about local and international market demands, and increase their products' value and market reach.

Furthermore, Chantararat et al. (2019) stated that farmers appear reasonably prepared to adopt digital technology, as reflected in their use of smartphones and popular applications. However, they need to become more familiar with agriculture-specific applications. The survey found that most farmers in the sample owned smartphones and used applications, but mainly for communication and social networking purposes rather than agriculture. The most commonly used applications among farmers were LINE, Facebook, and YouTube. Only a small proportion of farmers knew of and used applications specifically for agricultural purposes. The findings also suggest that while Thai farmers have embraced digital technology for general purposes, there is still an opportunity for greater adoption of agricultural applications and digital solutions tailored to their needs. Bridging this gap could enhance productivity, efficiency, and access to information for the farming community. Targeted efforts to raise awareness, provide training, and develop user-friendly agricultural applications could empower farmers to leverage digital tools more effectively in their agricultural practices.

This research aims to use modern and appropriate communication tools and technologies to create sustainable income and add value to the organic agricultural products of low-income farmers. The findings will inform the development of a research framework, communication innovation models, and appropriate technologies to foster occupations and participation in organic farming suited to the target audience, yielding practical benefits. The expected outcome is the creation of sustainable income

sources for low-income farmers in Doi Saket District through the development of organic product packaging innovations.

Research Objectives

1. To analyze communication methods and evaluate communication perception for developing and enhancing organic agricultural products of low-income farmers in Doi Saket District, Chiang Mai Province.

2. To study the factors influencing purchasing decisions for organic agricultural products in Doi Saket District, Chiang Mai Province.

The research framework is shown in Figure 1.

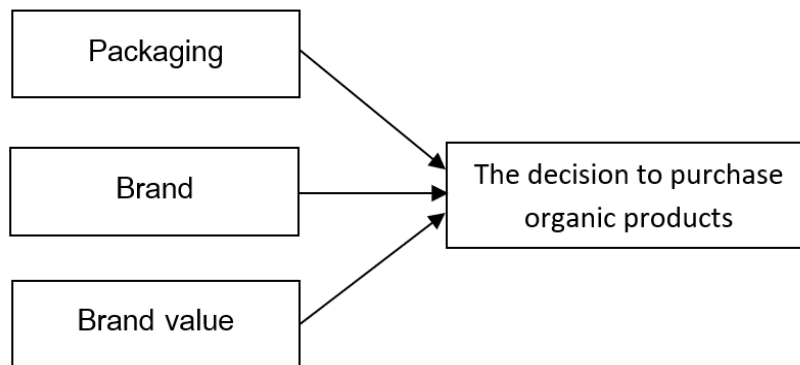


Figure 1 Research Framework

Literature Review

1. The Concept of Communication for Development

The concept of communication for development is highly significant in fostering sustainable development within societies and local communities. Communication for development refers to using various communication methods to support a country's development processes, particularly in continuous development contexts such as Thailand. Communication, as a crucial factor, can effectively drive the country's development processes and expedite achieving set goals. Planners and policymakers recognize the importance of communication in the development process and acknowledge the necessity of utilizing communication to efficiently support the country's development processes, enabling successful

navigation through obstacles and achieving objectives. Additionally, scholars in communication and development emphasize the significance of communication in social development (Hintow, 2013).

The concept of communication for local development serves as a pivotal tool for facilitating community progress. For effective development communication, several key characteristics must be upheld (Cheypratub, 1995; Kaewthep, 1996).

Firstly, public involvement in the communication process is essential. Recipients should receive and actively participate in planning and producing media content. Currently, communication activities are primarily controlled by communicators, limiting recipients' control over the process. To enhance effectiveness, recipients should have more control over when, where, and how they receive information tailored to their needs and convenience.

Secondly, localization is critical. Media content should be locally produced to align with recipients' contexts and needs. Utilizing local materials, technologies, and traditional communication practices fosters community ownership and self-reliance.

Thirdly, it is imperative to support local development officers. Mass communication techniques complement their work to enhance efficiency and effectiveness, especially in rural areas with limited officers.

Cultural sensitivity is another vital aspect. Communication strategies should prioritize people over profit, align with traditional values, and promote confidence in the local values system.

Additionally, media should foster an understanding of local issues and environments, empowering communities to engage in self-directed problem-solving. Finally, media should serve as a means to educate the public about the importance of community unity, leveraging traditional customs and events to strengthen solidarity within and between communities.

2. The Concept of Consumer Decision-making

Purchasing decisions mean choosing an activity from two or more alternatives. When people decide between two brands, they can make purchasing decisions (Schiffman & Kanuk, 2007, p. 508). Understanding consumer purchasing decision behavior requires studying the consumer decision-making process, which is the cause. Essential factors cause consumers to develop behaviors or tendencies to purchase products.

However, each Consumer's Decision-making process will vary according to the product type and consumer involvement. Other factors are also involved. Schiffman & Kanuk (2007) also described the consumer purchasing decision process: Selecting products from 2 or more options. Consumer

behavior concerning the decision-making process, including psychological feelings, thoughts, and visual behavior, will be considered. Furthermore, purchasing is a mental and physical activity that occurs over time. These activities also cause purchasing and purchasing behavior, according to others (Loudon & Bitta, 1993). As shown in Figure 2, the consumer purchasing decision process can be diagrammed as follows;

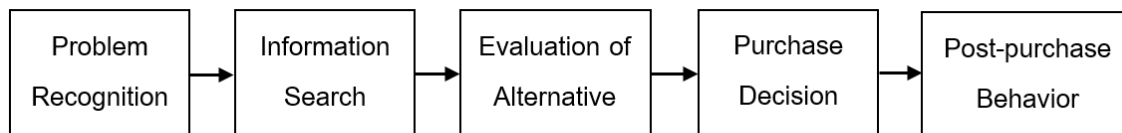


Figure 2 Five Stages Model of the Consumer Buying Process (Kotler, 1997)

3. The Concept of Product Value and Packaging to Enhance Product Value

The concept of “Brand” encapsulates consumers' perceptions of a product across various dimensions, including physical attributes, packaging, price, reputation, and overall communication. It represents the relationship between consumers and a product, leaving a lasting impression on their minds. Brands play a crucial role in product development and consumer purchasing decisions, complementing product logos to reinforce consumer attachment.

Advertising experts emphasize that a brand encompasses more than just a logo or advertisement; it embodies consumers' overall impressions derived from various factors, including advertising, product experiences, and organizational image. Brands evoke feelings, values, and meanings, influencing consumer behavior and fostering brand loyalty (Chitsuthiphakorn, 1996).

Product branding is essential for marketing success, enabling marketers to differentiate their products, add value, and influence repeat purchases (Katephetsuwan, 2020). However, the importance consumers place on branding can evolve, impacted by economic shifts and changing market dynamics.

In Thai society, affluent urban consumers have historically worshipped prestigious brands, emphasizing status symbols over product attributes. However, economic downturns have led to increased consumer scrutiny and a shift towards brands offering value equity rather than mere image (Boonliang, 2018).

Despite the importance of branding, community products often need help with non-standardized and unappealing packaging. Adequate packaging is crucial for capturing consumer interest, protecting

products, and enhancing perceived value. Government agencies in Thailand, such as the Packaging Development Center, aim to improve packaging quality and support community products' entry into the global market.

However, this study distinguishes between brand and brand value by highlighting their distinct roles in consumer decision-making and marketing effectiveness. A brand, developed through logos and recognizable symbols, is an identifier that helps consumers differentiate products and build trust. In contrast, brand value, which encompasses the perceived quality and desirability that attractive packaging and effective communication channels impart to the product, is a powerful influencer of consumer perceptions. It enhances the brand's identity by influencing consumers' perceptions of quality and reliability, thus driving purchasing decisions. These factors underscore the importance of establishing a solid brand presence and enhancing its perceived value to attract and retain customers effectively.

In conclusion, while branding remains critical for consumer perceptions and purchasing decisions, attention to packaging quality is equally essential for the success of community products in both domestic and international markets.

4. The concept related to social and environmental responsibility

Corporate Social Responsibility (CSR) evolved from an era of economic growth, where businesses often overlooked ethical considerations (Iszatt-White & Saunders, 2014). It began in the 19th century, driven by societal demands and legal frameworks emphasizing profit distribution to management and labor and addressing external social concerns. Post-World War II, a paradigm shift emerged, highlighting the need for organizations to balance profitability with societal and environmental considerations.

During the 20th century, businesses faced criticisms for their lack of social responsibility, prompting calls for legislation to curb malpractices. Laws were enacted to regulate banking, consumer protection, and anti-trust measures, broadening corporate responsibility to include education, public health, labor safety, pollution reduction, and charitable assistance (Mitchell & Larson, 1989).

In the 21st century, CSR principles evolved to encompass philanthropy and advocacy management (Lawrence & Weber, 2014), with organizations held accountable to shareholders and stakeholders. The World Business Council for Sustainable Development (WBCSD) introduced additional perspectives, emphasizing stakeholder accountability and the role of managers in balancing company benefits with societal demands (Hayes & Wheelwright, 1984).

Leadbeater's perspective underscores the commercialization and widespread adoption of social responsibility, extending to social enterprises emphasizing collaboration between government, private sector, and civil society (Leadbeater, 1997). This expansion of ideas has led to sustainable development, supported by initiatives like "The UN Global Impact" and OECD guidelines for international companies (Thailand Institute of Scientific and Technological Research, 2020).

Methodology

This study will utilize a mixed-method approach, integrating quantitative and qualitative research methodologies to achieve thorough insights. The primary objective is to investigate educational strategies and evaluate communication methods conducive to improving the packaging of organic agricultural products among economically disadvantaged farmers in Doi Saket District, Chiang Mai Province. Participants in this research will be categorized into two groups:

1. Qualitative method: The researchers conducted fieldwork to gather empirical data from real-world locations, supplemented by data collection from online media sources and community engagement. The researcher conducted in-depth interviews using informal interview questions with community leaders, community enterprise group leaders, and representatives of organic farmers in the Doi Saket District area. The research involved face-to-face interviews and participant observation while doing focus groups totaling six people. The focus was on the community context, content or community products, and community organic agricultural products. The information obtained from these interviews, made possible by the valuable input of the audience, will be used to create ideas for designing innovative packaging prototypes for organic products.

Subsequently, this collected information informed the conceptualization of innovative packaging prototypes for organic agricultural products in Doi Saket District, Chiang Mai Province. The criteria for participant selection within the organic farming community were defined as 1) individuals with a minimum of one year of experience in organic farming and 2) a specific focus on organic vegetable farmers.

Qualitative research methodologies, notably semi-structured interviews, were employed to gather data. The interview protocol was constructed based on the variables identified within the research framework, integrating concepts, theories, and pertinent literature gleaned from in-depth interviews. Furthermore, informal interview questions and participatory observation techniques were utilized. Moreover, during focus group discussions with local farmers, researchers employed inquiries to elicit

comprehensive perspectives from participants regarding the effectiveness of the prototype organic agricultural packaging. After that, the researcher analyzed the data using the content analysis method.

2. Quantitative method: Following the qualitative research phase to design the prototype packaging innovation, a sample group of Chiang Mai Province residents will be selected using quota sampling. They will be surveyed via a questionnaire to evaluate their satisfaction with the prototype packaging innovation. Selection criteria for this group include a specific interest in organic agricultural products, and quota sampling techniques will be employed to ensure representation across different age groups and income levels. A total of 328 individuals, obtained from quota sampling who live in Doi Saket District, Chiang Mai, will be chosen based on the preliminary survey questionnaire to examine factors influencing the purchase decisions of organic agricultural products in the Doi Saket District. The personal questions were developed by Debrulle et al. (2013) and Greve & Salaff (2003). Furthermore, Upanwan (2014) and Boonliang (2018) developed the questions regarding product purchasing decisions.

Research tools: The researcher used a questionnaire by dividing the questions into two parts:

Part 1: General information, including gender, age, occupation, and income, is a multiple-choice answer (Checklist).

Part 2: Questions about factors influencing the purchase of organic products. Doi Saket District It is a 5-level rating scale question (Rating scale) where only one answer can be chosen.

The researcher tested the questionnaire before actually using it (pretest) by collecting data from 30 general citizens and using it to calculate the reliability coefficient. (reliability) with Cronbach's Alpha statistics (Cronbach's Alpha) testing is done on the utilization variables. Suppose the analysis results reveal that the reliability correlation coefficient is 0.92, which exceeds 0.70. It shows that the measurement tool is reliable. The researcher then used it to collect actual data. Before use, data were collected from a sample of 328 people (5–10 times the variables) using quantitative research methods. The researcher determines the sample size by first calculating the study population. It was estimated by setting the sample size with a margin of error of 5% and setting a reliability of 95%.

The quantitative data will be analyzed using inferential statistics, while the qualitative data will be analyzed through content analysis to develop sustainable organic product packaging innovations. The analysis results of the factors influencing purchasing decisions for organic agricultural products according to the second objective using exploratory factor analysis (EFA) and binary logistic regression.

Research Results

1. Qualitative Research Findings

All in-depth interviews and group meetings were meticulously audio-recorded. The tapes were then transcribed for interpretation, and data from the transcripts were coded, following the guidelines of systematic content analysis. The answers obtained from the interviews were not only consistent with the literature review, but also validated its findings. These answers can be grouped into four groups: branding and logo, packaging, communication channel, and sales diversity, as shown in Table 1.

Table 1 Interview questions: “What do you want customers to know about our products?”

Category	Frequency	Keywords
Branding and Logo	5	<ul style="list-style-type: none"> - Think of our group's products first. - Trust that the product is safe. - Buy products from our group and be proud. Helped society - I want to show that our products are really of high quality. Not contaminated with toxic substances - Customers purchase products regularly. - remember the product - The product stands out from others. - Products different from competitors
Packaging	4	<ul style="list-style-type: none"> - The produce is not damaged. - Product lasts a long time. - Clean produce - Promote the environment
Communication channel	2	<ul style="list-style-type: none"> - Come back to buy again often. - Want customers to be healthy - Know about healthcare
Sales diversity	3	<ul style="list-style-type: none"> - Many items meet customer needs. - Want to sell in the department store or online - Want to increase sales

Table 1 summarizes vital factors influencing consumer decisions based on feedback from focus group discussions with organic farmers. In the category of Branding and Logo, consumers prioritize recognizing and trusting the group's products, associating them with safety, quality, and social responsibility. They seek products that not only meet these criteria but also stand out from competitors, leading to regular purchases. Packaging is essential for protecting produce, ensuring longevity, cleanliness, and environmental promotion. Effective Communication Channels encourage repeat purchases, promote customer health, and increase awareness of healthcare benefits. Lastly, Sales Diversity highlights the need to offer various products, expand sales through department stores or online platforms, and ultimately boost sales to meet customer needs.

Analysis results in communication methods and evaluates communication perception for developing and enhancing organic agricultural products according to the first objective by content analysis method found that the outcomes from focus group discussions with organic farmers revealed deficiencies in various agricultural products, including the absence of branding, logos, visually appealing packaging, consumer communication channels, and sales diversity. Consequently, participants expressed a collective aspiration to enhance and elevate the quality of their organic agricultural products. In response, they initiated the development of logos and aesthetically pleasing packaging, creating appropriate prototype packaging (Figure 3). Notably, the packaging design incorporated a semi-foldable box structure to minimize moisture penetration while facilitating consumer convenience in handling. Furthermore, the participants took a proud and responsible step by adopting an environmentally friendly approach, utilizing brown craft paper for the exterior packaging, aligning with the prevailing trend of environmentally sustainable packaging.

Consumer decision-making significantly impacts product purchasing decisions through several key factors:

- the development of branding and logos, which help consumers identify and trust products
- the creation of visually appealing packaging that attracts attention and enhances perceived quality
- the establishment of effective consumer communication channels to inform and persuade potential buyers
- diversification of sales methods to increase product accessibility

- the adoption of environmentally friendly packaging to appeal to sustainability-conscious consumers

These elements are pivotal in shaping consumer behavior and driving product purchases, underscoring their significance in marketing.



Figure 3 Packaging and logo of organic products prototype.

Moreover, through participant observation conducted during collaborative engagements with the community, it became evident that this cohort of organic farmers is relatively modest. This phenomenon can be attributed to farmers needing more knowledge, confidence, and financial resources to transition their agricultural production into organic offerings. This observation facilitated the delineation of four principal areas of concern:

1) Production Cost Challenges

The production expenses associated with organic agricultural commodities are considerably high, influenced by various factors, including the procurement costs of organic inputs, the expenditure on organic fertilizers, and escalated labor expenses attributable to the preference for skilled labor in organic farming practices.

2) Market Access Limitations

Predominant hurdles include restricted market access and fluctuations in market competition. These issues stem from inadequate market intelligence and consumer awareness, constrained distribution networks, and a need for brand recognition for locally produced organic items, impacting market perception and pricing dynamics.

3) Communication Impediments

The advancement and prosperity of organic agriculture are impeded by several communication-related obstacles, notably the prevalence of misconceptions and insufficient understanding regarding organic farming and associated technologies, limited access to pertinent market and technological information, and constraints in establishing effective market linkages. Mitigating these obstacles necessitates the establishment of easily accessible information outlets and resources to facilitate educational and learning endeavors, bolster marketing and technological comprehension, and institute efficient communication platforms to foster the sustainable development of organic agriculture.

4) Policy Restraints

Policy-related factors exert a significant influence on the trajectory of organic agriculture. A notable challenge is the ambiguity and inadequacies in policies about the advocacy and promotion of organic agriculture, potentially engendering farmer apprehensions regarding investment and growth prospects in this sector. Furthermore, challenges in policy evaluation and monitoring, such as the absence of clear-cut criteria and assessment methodologies, warrant immediate policy refinement and adjustment to support and promote organic agriculture in alignment with the requisites and potentialities of farmers in the region and Thailand.

Furthermore, owing to the small-scale nature of the cohort of organic farmers, community communication still needs to be more complex. Community leaders predominantly disseminate information among community members through the Line application, ensuring effective intra-group communication, particularly concerning updates relevant to governmental agencies. Additionally, community leaders engage in direct face-to-face communication with community members, facilitated by the community's proximity and convenience. Regular community gatherings and agricultural-related activities serve as platforms for communication, guidance, and idea exchange among community leaders and residents, fostering collaborative developmental endeavors within the community as envisaged.

Concisely, the study underscores the importance of Corporate Social Responsibility (CSR) in enhancing organic agricultural products in the Doi Saket District. CSR principles emphasize community engagement, environmental sustainability, economic responsibility, educational and technological support, policy advocacy, community communication, and consumer awareness. Businesses can support farmers' efforts to improve branding, packaging, and communication, aligning with CSR by adopting eco-friendly practices like brown craft paper. Economic support through fair trade practices and financial

resources can alleviate high production costs and market access limitations. Educational and technological initiatives can bridge knowledge gaps and improve farming practices.

CSR also involves advocating for more straightforward policies to support organic farming and enhancing community communication through digital platforms and regular gatherings. Additionally, CSR initiatives can create awareness campaigns, expand distribution networks, and develop new market opportunities, opening up new possibilities for the community and the businesses involved. Through these efforts, businesses can contribute to the sustainable development of organic agriculture and create shared value.

2. Quantitative Research Findings

The results of the analysis of the factors influencing purchasing decisions for organic agricultural products according to the second objective using EFA and MRA in the analysis found that after acquiring essential data and completing empirical fieldwork, supplemented by data gathering from online media platforms and community participation, the researchers analyzed the collected data. This analysis facilitated the planning, designing, and implementation of prototype packaging, serving as a qualitative research outcome. The primary goal of this research was to understand the factors that influence consumers' decisions when purchasing organic agricultural products. Additionally, the researchers conducted tests and made iterative improvements to the prototype packaging based on feedback received from the community. This iterative process led to the development of an innovative prototype packaging designed explicitly for organic agricultural products in the Doi Saket District of Chiang Mai Province.

Subsequently, a quota sampling technique was employed to select a sample group of 328 individuals residing in Chiang Mai Province. Data collection was conducted using a survey questionnaire designed to explore opinions regarding the factors influencing the purchase of organic agricultural products in the Doi Saket District. This survey instrument was aligned with the study's objectives, which are delineated as follows:

1) Analyzing survey-based factors that impact the purchase of organic agricultural products.

In the exploratory factor analysis (EFA), the Kaiser–Meyer–Olkin Measure of Sampling Adequacy (KMO) yielded a value of 0.935, indicating that the dataset used for analysis is highly suitable for factor analysis techniques, as it exceeds the recommended threshold of 0.8. The Chi–Square test statistic was found to be 2128.828 with a significance level (Sig.) of 0.000, indicating significant

interrelationships among the variables, thus validating the suitability of the data for factor analysis. Factor extraction and rotation were conducted using the Maximum Likelihood Method, followed by Varimax rotation, which resulted in the identification of 17 questions grouped into three factors influencing the purchase of organic agricultural products: packaging factor, branding factor, and product value factor.

From Table 2, the research sample comprised 328 individuals, with a gender distribution of 60.7% male and 39.3% female. The demographics were as follows: 17.7% under 20 years, 38.7% aged 21–30 years, 10.4% aged 31–40 years, 18.3% aged 41–50 years, 7.6% aged 51–60 years, and 7.3% over 60 years. Regarding income, 46.0% earned less than 10,000 baht, 16.8% earned between 10,001 and 20,000 baht, 14.3% earned between 20,001 and 30,000 baht, 11.0% earned between 30,001 and 40,000 baht, and 11.9% earned over 40,000 baht. The occupational distribution included 5.8% in agriculture, 13.1% as government officers, 53.7% as students, 11.0% as business owners, and 8.2% in other occupations. Factor Variance (%Variance Explained), Factor Loading, and Cronbach's Alpha Coefficient affect factors influencing the purchase of organic products were summarized in Table 3.

Table 2 Descriptive of data collected.

Items		Frequency	Percentage
Gender	Male	199	60.7
	Female	129	39.3
Age	Lower than 20 years	58	17.7
	21–30 years	127	38.7
	31–40 years	34	10.4
	41–50 years	60	18.3
	51–60 years	25	7.6
	61 and upper	24	7.3
Income	Less than 10,000 baht	151	46.0
	10,001 – 20,000 baht	55	16.8
	20,001 – 30,000 baht	47	14.3
	30,001 – 40,000 baht	36	11.0
	40,001 and up	39	11.9

Items		Frequency	Percentage
Occupation	Agriculture	19	5.8
	Government officer	43	13.1
	Student	176	53.7
	Business owner	36	11.0
	Other	27	8.2

Table 3 Factor Variance (% Variance Explained), Factor Loading, and Cronbach's Alpha Coefficient affect factors influencing the purchase of organic products.

Factors influencing the purchase of organic products		Factor Loading	% variance Explained	Cronbach's Alpha Coefficient
Factor 1: Packaging			45.695	0.812
1.1	Reusable packaging drives your purchasing decision.	0.774		
1.2	Packaging with a modern shape makes you decide to buy.	0.687		
1.3	Packaging that is easy to use and open makes you decide to buy.	0.600		
1.4	Packaging from durable, quality materials makes you decide to buy.	0.785		
Factor 2: Brand			8.984	0.826
2.1	The logo is outstanding and eye-catching.	0.780		
2.2	The logo is beautiful, bright, tight, and colorful.	0.827		
2.3	The logo looks modern.	0.837		
2.4	The Doomme logo is environmentally friendly.	0.689		
2.5	The logo represents quality.	0.743		
2.6	The logo is creative.	0.756		

Factors influencing the purchase of organic products		Factor Loading	% variance Explained	Cronbach's Alpha Coefficient
Factor 3: Brand value			7.379	0.850
3.1	When you see the product, you are sure it is safe and healthy.		0.759	
3.2	When you see the product, you are impressed with the overall product.		0.728	
3.3	When you see the product, you have confidence in its quality.		0.737	
3.4	When you see the product, you remember the product. I will recommend it to your friends.		0.659	
3.5	Packaging where the product can be seen makes you decide to buy.		0.631	
3.6	Packaging with correct product label information Can be seen clearly, making you decide to buy		0.683	
3.7	Packaging with product label information creates confidence in the non-toxic product, which makes you decide to buy.		0.625	

2) Evaluating the influence of these factors on the purchasing behavior of organic agricultural products.

A binary logistic regression analysis was conducted to examine the factors influencing the purchase of organic agricultural products. The research hypotheses were centered on the influence of packaging, branding, and product value on consumers' decisions to purchase organic agricultural products. The initial phase involved assessing the relationships between independent variables to detect multicollinearity, a phenomenon inherent in Binary Logistic Regression analysis. Multicollinearity occurs when independent variables are correlated, resulting in abnormal regression analysis results.

The correlation coefficients among the factors were below 0.90 (Tabachnick & Fidell, 2012), indicating the absence of multicollinearity issues, as depicted in Table 4.

Table 4 Correlation coefficient between factors.

Factors influencing the purchase of organic products	Packaging	Brand	Brand value
Packaging	1.000	-.510	-.241
Brand	-.510	1.000	-.507
Brand value	-.241	-.507	1.000

The Binary Logistic Regression analysis findings in Table 5 reveal a Nagelkerke R Square coefficient of 0.146. This suggests that the variables considered in the analysis account for approximately 14.6% of the variance in consumer purchasing decisions. The Hosmer and Lemeshow Test evaluated the model's adequacy, yielding a Chi-square statistic of 8.949, with a corresponding significance level (Sig.) of 0.774. Consequently, the model is deemed adequate.

Table 5 Factors (packaging, brand, and brand value) that influence the decision to purchase organic products. Doi Saket District by Enter Method.

Predictor	B	SE.	Wald	df	Sig	Exp(E)
Constant	-2.937	0.987	8.859**	1	0.003	0.053
Factor 1: Packaging	-1.056	0.324	10.655**	1	0.001	0.348
Factor 2: Brand	1.751	0.517	11.478**	1	0.001	5.759
Factor 3: Brand value	.668	0.355	3.533	1	0.060	1.950

** Statistically significant at the 0.01 level.

From Table 5, it is evident that two factors significantly impact the purchasing decision. The branding factor shows the highest influence, with a coefficient of 11.478, followed by the packaging factor, with a coefficient of 10.655. In contrast, the product value factor lacks statistical significance. Consequently, branding and packaging design play crucial roles in influencing consumer decisions regarding the purchase of organic agricultural products.

Conclusion and Discussion

In addressing these challenges, it is imperative to develop and enhance communication strategies to ensure that farmers have sufficient understanding and knowledge of organic farming technologies and processes. This involves creating easily accessible sources of information and tools related to market dynamics and consumer preferences, establishing suitable marketing channels, developing appropriate communication technologies, and garnering support from relevant organizations or agencies for communication and product development efforts within the Doi Saket District, Chiang Mai Province. These considerations must be carefully evaluated and implemented to yield long-term benefits for farmers and local communities. Moreover, strategies for enhancing agricultural productivity toward organic production should be formulated by addressing the identified challenges comprehensively across all four dimensions.

Firstly, in agricultural development, organic farmers often need more skills and knowledge in production processes, compounded by the necessity to invest in high-priced organic inputs such as organic fertilizers and bio pesticides. Consequently, production costs for organic farmers surpass those of conventional counterparts. Additionally, organic agriculture tends to yield lower per-acre outputs due to its reliance on natural factors. Research by Górska-Warsewicz et al. (2021) underscores the significance of environmentally friendly management practices, which inflate production costs.

Moreover, shifts in industry conditions, including alterations in market demands, legal regulations concerning organic production, and fluctuations in climate and environmental conditions, can escalate production costs (Bunnag, 2022). Hence, controlling production costs and fostering sustainable production methods emerge as pivotal considerations for advancing the efficiency and sustainability of organic agriculture.

Furthermore, low per-acre yields in organic farming primarily result from the vulnerability of crops to natural elements, such as erratic weather conditions leading to heightened yield losses, inadequate control of pests and diseases through less effective organic methods, and the scarcity of suitable fertilizers or plant nutrients. Insufficient knowledge and skills in managing and nurturing plants within organic farming systems further exacerbate the variability and inferiority of per-acre yields compared to conventional farming methods. Consequently, fostering learning and experience-sharing in organic agriculture becomes essential for mitigating these challenges and enhancing per-acre yields of organic produce for a more promising future.

Secondly, developing markets for Thai organic farmers can be achieved by establishing efficient and sustainable marketing strategies. This involves improving access to market-related information and resources, such as consumer demand data and methods to enhance the value of organic products, including certification and quality assurance processes (Leksuit & Pituratjarumkoon, 2020). Besides, supporting farmers in developing skills and knowledge related to marketing and producing high-quality goods is crucial for the success and sustainability of organic agriculture markets in Thailand.

Various dimensions can be identified in the development of marketing strategies for organic farmers, including promoting and supporting education and learning about markets and online marketing, creating and developing domestic and export market channels, facilitating connections between farmers and markets, and fostering collaboration with government and private sectors to establish appropriate market infrastructure. These strategies aim to increase opportunities and efficiency in sustainably marketing Thai organic products for farmers.

These challenges affect organic farmers' income and quality of life, necessitating fair and equitable solutions such as expanding distribution channels, developing product branding, and promoting communication skills. Consistent with the findings by Ratanavararak et al. (2019), using platforms or applications for disseminating knowledge and technology to farmers is proposed as a rapid, cost-effective approach with bidirectional communication capabilities, enabling farmers to seek clarification or offer feedback. Furthermore, diverse media formats, including easily comprehensible video clips distributed through social media platforms commonly accessed by farmers, are suggested to enhance learning and encourage farmer adoption.

Then, the evolution of communication strategies for Thai organic farmers is crucial for promoting the country's growth and sustainability of organic agriculture. Key considerations in this regard include:

1. enhancing access to market-related information and resources.
2. fostering increased understanding and awareness of organic farming.
3. supporting education and training on technology and management in organic agriculture.
4. creating and supporting suitable and trustworthy marketing channels.
5. developing and supporting policies that promote organic agriculture nationally.

Emphasizing these strategies as part of Thailand's organic agriculture development strategy would greatly benefit the creation of resilient and sustainable organic farming communities in the future, with implications for the country's long-term economic and social development.

To fully realize and effectively implement the development of communication strategies for Thai organic farmers, it is essential to focus on creating easily accessible information and resources, such as websites, applications, or online networks providing information on organic farming technologies. Moreover, organizing training courses and workshops to enhance knowledge and skills in organic farming, supporting and promoting online marketing channels and agritourist destinations to boost additional income, and conducting promotional activities to raise awareness about organic products are also crucial. Implementing these strategies will help increase opportunities and effectiveness in communication and sustainable development of organic agriculture for future generations.

Finally, developing policies for Thai organic farmers is crucial for the growth and sustainability of this sector. This is consistent with Attavanich et al. (2019), who state that critical considerations should include policies that promote organic agriculture at every stage of development, support education and training on technology and management in organic farming, create and support suitable and trustworthy marketing channels, develop infrastructure to support organic agriculture and establish national-level policies that support organic farming. By incorporating and implementing these policies, we can create an environment conducive to Thailand's sustainable and effective growth of organic agriculture.

In summary, policies for Thai organic farmers should focus on promoting and supporting organic agriculture at every stage of development, supporting education and training on technology and management in organic farming, creating and supporting suitable and trustworthy marketing channels, supporting the development of infrastructure to support organic agriculture, providing funding for organic farming production, and establishing national-level policies that support organic farming. By learning and implementing these guidelines, we can strengthen an environment conducive to Thailand's sustainable and effective growth of organic agriculture.

Based on the development mentioned above guidelines, the anticipated outcomes envisaged by the research team could result in augmented income for organic farmers and heightened recognition, acceptance, and prevalence of organic agricultural products within the farming community. Moreover, consumers will gain enhanced access to information and knowledge regarding organic farming practices.

Theoretical and Practical Implications

From this study, the researcher discovered that the theoretical Implications can be classified as follows:

1) Branding and Consumer Behavior

The study reinforces the theoretical framework that branding significantly influences consumer purchasing decisions. It not only highlights the importance of brand recall and identity in shaping consumer perceptions and behaviors but also underscores its profound impact on consumer trust and loyalty. This aligns with existing marketing theories that emphasize brand equity and its influence on consumer behavior.

2) Packaging as a Value-Added Element

The findings underscore the theoretical perspective that packaging is a critical component of product marketing. It not only protects the product but also communicates its quality, safety, and brand identity, thereby enhancing consumer confidence and trust. This supports theories that consider packaging an essential element in the marketing mix.

3) Consumer Decision-Making Models

The research contributes to consumer decision-making theories by identifying key factors such as branding, packaging, and product value influencing purchasing decisions. This aligns with multi-attribute decision models, which propose that consumers evaluate products based on various attributes before purchasing.

4) Sustainability and Consumer Preferences

The emphasis on eco-friendly packaging aligns with theoretical discussions on sustainability in consumer behavior. It not only supports the notion that modern consumers increasingly value environmental sustainability but also underscores the urgency of addressing these concerns in product marketing. This influence on consumer behavior is significant and should not be overlooked.

As well, the researcher can also discover the Practical Implications that can be classified as follows:

1) Brand Development

The study suggests that organic farmers and producers stand to gain significantly from investing in creating solid and recognizable brands. This involves developing unique logos and brand identities that convey trust, quality, and safety to consumers, thereby enhancing their market presence and consumer trust.

2) Enhancing packaging

There is a practical need to improve packaging by making it durable, reusable, and appealing. This is not just a necessity, but an opportunity for organic farmers and producers to meet consumer demands and stand out in the market. By using high-quality materials and designs that align with consumer preferences for modern, eco-friendly solutions, they can empower themselves to attract more customers and build a loyal consumer base.

3) Market Access and Distribution

Expanding market access through improved distribution networks and market intelligence is highlighted. Practical steps include strategies to increase brand recognition and reach a broader consumer base, potentially through online and retail channels.

4) Cost Management and Efficiency

Addressing production cost challenges is critical. Practical measures involve adopting cost-effective farming practices and training farmers in labor efficiency to reduce production expenses while maintaining high-quality standards.

5) Communication and Education

Enhancing communication channels is crucial for informing and persuading consumers. Practical implications include using digital tools, educational outreach, and community engagement to improve knowledge exchange and market linkages.

6) Policy Advocacy

The study underscores the need for advocacy to refine policies supporting organic farming. Practical steps include engaging policymakers to develop clear, supportive policies and effective monitoring systems to encourage organic agricultural practices.

7) Community Engagement

Strengthening community communication through digital platforms, direct interactions, and regular community activities is essential. Practically, this involves fostering a collaborative spirit among farmers and ensuring they are well-informed and engaged in developmental projects.

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