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Connectivity Marketing Mix Integration and Digital Capabilities in Traditional Food Micro-Enterprises: A Case Study of Tempe Producers in Indonesia

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Abstract

Objective: To analyze the 4Ps marketing mix at Tempe Pandawa and formulate a gradual digital transition suitable for its limited resources **Theoretical framework:** Integrates the marketing mix, word-of-mouth communication, brand visibility, and digital transition perspectives. **Literature review:** Previous studies show that traditional food micro-enterprises rely on product quality, affordable prices, proximity-based distribution, and interpersonal promotion, but often have limited brand visibility and digital market access **Methods:** An exploratory single-case study was conducted through semi-structured interviews with one owner and four customers, supported by business documentation from January to May 2026. Data were analyzed using a deductive 4Ps matrix and thematic comparison. **Results:** Tempe Pandawa maintains product quality, affordable pricing, and proximity-based distribution, while promotion remains dependent on direct communication and word-of-mouth. The findings reveal an asymmetrical marketing mix in which product, price, and place are established, but promotion has not translated local trust into broader brand visibility. **Implications:** Digital transition can be implemented gradually through stronger packaging identity, WhatsApp Business catalogs, point-of-sale mapping, simple digital content, and distribution expansion trials. **Novelty:** The study proposes a gradual digital transition framework that builds digital visibility and market access from existing marketing practices and local customer trust. Given the single-case design and five informants, the findings are analytically rather than statistically generalizable.

Keywords: marketing mix, digitalization, digital marketing, msmes, word of mouth

INTRODUCTION

Micro, small, and medium enterprises (MSMEs) play a crucial role in creating employment opportunities, household income, and local economic activity. This role is particularly evident in the food processing industry, as consumption needs arise daily and entry barriers are relatively lower compared to large-capital industries. In Indonesia, the

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widespread MSME structure extending down to the village level makes marketing capability a key economic development issue, not just an internal company issue [1],[2],[3],[4]. However, proximity to consumers does not necessarily guarantee business sustainability. Businesses must contend with changes in raw material prices, competition from similar products, hygiene demands, changing preferences, and a shift in information seeking patterns toward digital channels.

The traditional food sector faces more complex challenges because the value of its products is shaped by a combination of taste, aroma, freshness, price, and consumption habits. Producers must maintain familiar characteristics while improving packaging and market communications. Too much change can diminish the perception of authenticity, while a lack of innovation can make products lose their competitiveness. Therefore, traditional food marketing strategies require a balance between cultural continuity and adapting to the market environment.

Tempeh is a fermented soybean food that holds an important place in Indonesian consumer culture. Besides being affordable, tempeh has nutritional value and can be processed into various dishes. Tempeh quality is influenced by raw material handling, inoculation, temperature, aeration, cleanliness, fermentation time, and packaging characteristics [5],[6],[7]. These characteristics make the production process inseparable from marketing decisions. Packaging affects fermentation and shelf life, sales speed determines distribution channel choice, while quality consistency builds trust and repeat purchases.

In micro-businesses, marketing decisions are generally not made by a dedicated unit. The business owner simultaneously acts as production manager, pricing manager, distribution manager, and promotion implementer. These decisions are often based on experience, social relationships, and observations of the surrounding market. This pattern can provide flexibility, but it also has the potential to hinder recording, evaluation, and expansion if knowledge is confined solely to the owner's experience.

The marketing mix framework provides a diagnostic tool for grouping decisions that a company can control into product, price, place, and promotion [8],[9],[10],[11],[12]. Product relates to benefits, quality, variety, packaging, and identity. Price relates to exchange value, affordability, discounts, and margin sustainability. Place includes location, distribution channels, availability, and accessibility. Promotion includes conveying information, building memory, persuading, and maintaining customer relationships.

Despite its practicality, the 4P framework is often criticized for being a static checklist and for not taking into account customer relationships, resources, and technological developments [13],[14],[15],[16]. These criticisms do not negate the usefulness of the 4Ps, but rather demand a more integrative reading. In micro-food businesses, a single decision can impact several elements simultaneously. Reducing size to maintain price is both a pricing decision and a product decision. Leaf packaging serves as a fermentation medium, a sensory differentiator, and a symbol of tradition. Storekeeping of products in vegetable shops is both a distribution channel and a promotional tool.

Digital developments add a new dimension to these issues. Digital marketing can improve visibility, communication, ordering, and distribution coordination. However, its adoption by MSMEs is influenced by owner capabilities, perceived benefits, ease of use, cost, time, network quality, and compatibility with business routines [17],[18],[19],[20],[21],[22],[23],[24],[25]. Opening a social media account does not automatically result in transformation. Infrequently updated accounts, slow-response messages, or inaccurate stock information can actually reduce customer trust.

For fresh food producers with low transaction values, digital strategies should begin with the functions most closely aligned with consumer needs. Customers receiving recommendations should be able to find the business name, contact number, location,

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available products, price range, and point of sale. Once these basic functions are in place, businesses can develop content, customer programs, retail partnerships, or delivery within a specific radius. A phased approach is more appropriate than a simultaneous digital expansion that requires significant resources.

The Tempe Pandawa MSME was chosen as a case study because it has been operating since 1999, producing several varieties of tempeh, using direct sales channels and intermediaries, but has not yet implemented digital promotions. The business is located in Delitua, Deli Serdang Regency, North Sumatra. The case study provides a relevant context for examining how operational strengths can work alongside limitations in brand identity and digital visibility.

This study asks three questions. First, how are the elements of product, price, place, and promotion applied to the Tempe Pandawa MSME? Second, how do these elements relate to each other in shaping marketing strengths and limitations? Third, what low-cost digitalization stages are appropriate for the business's resources, products, and distribution channels? The study aims to provide an analysis that goes beyond the 4Ps description by exploring the mechanisms of the relationship between quality, affordability, access, customer recommendations, and brand visibility.

The research's contributions are both empirical and conceptual. Empirically, the study documents marketing practices in traditional food businesses whose markets are still local and relational. Conceptually, the study positions digital readiness as a ladder of capabilities starting with product identification, ease of contact, channel coordination, and repeat purchase communication. Digitalization is not treated as an end in itself, but as an instrument to strengthen the value already built through product, price, and place.

LITERATURE REVIEW

Family Communication as a Relational System

Family communication patterns theory views the family as an environment that shapes how members speak, disagree, and manage authority. Two important orientations are conversation orientation and conformity orientation [23],[24]. Families with a high conversation orientation create space for the exchange of ideas and the expression of feelings. In contrast, those with a high conformity orientation emphasize uniformity, hierarchy, and obedience. Gadgets can extend conversations through digital channels, but they also move them into private, algorithmic spaces that are less visible to other members. A family systems perspective asserts that changes in one subsystem affect others [25]. Habitual phone checking due to work stress, for example, can reduce responsiveness to a partner. This strain on the partner then affects the consistency of parenting and the child's emotional climate. Therefore, technoference is not appropriately understood simply as a failure of individual self-control; it can arise from work demands, social norms, the persuasive design of apps, and family coordination patterns.

Marketing Mix as a Decision System

The marketing mix concept evolved from efforts to group the various variables that managers can use to respond to the market. Borden introduced the idea of the marketing mix, then McCarthy simplified it to product, price, place, and promotion [8],[9]. This simplification made the 4P framework easy to apply in marketing planning, teaching, and evaluation. Kotler and colleagues further developed each element as part of the process of creating, delivering, and communicating value [10],[11],[12].

A product is the totality of benefits received by consumers. Products are not limited to physical objects, but encompass quality, variety, design, brand, packaging, warranties, and

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the user experience. In traditional foods, the functional benefits of taste, freshness, and safety go hand in hand with the symbolic benefits of authenticity and cultural affinity. A good product must be consistent because the consumption experience forms the basis for repeat purchases. Price is the value that customers must sacrifice to obtain benefits. Price functions as a source of revenue, a marker of market position, and a tool for adjusting to competition. In societies that are sensitive to changes in purchasing power, nominal price is often an immediate consideration. However, a low price does not always equate to high value if size, quality, or availability change without certainty. Therefore, pricing decisions need to be linked to unit costs and perceived benefits [26],[27].

Place refers to how a product is available at the time and location consumers need it. For perishable products, distribution should prioritize speed of turnover, proximity, handling, and availability information. Direct channels allow for greater margins and feedback, while intermediary channels provide buyer traffic and convenience. The appropriate channel mix depends on the product's characteristics and the manufacturer's capabilities. Promotion is the process of conveying information and shaping meaning about a product. Promotion extends beyond paid advertising to personal selling, sales promotions, public relations, recommendations, and digital communications. In small businesses, promotion is often tied to owner-customer interactions. Its limitations lie in reach, message consistency, and reliance on personal relationships.

The relationship approach criticizes the marketing mix for overemphasizing transactions and corporate control [13],[14]. Constantinides and Goi also emphasize the need for adaptation to changes in the marketing environment [15],[16]. In this study, these criticisms are addressed by treating the 4Ps as a system of interrelated decisions. The analysis does not stop at the question of whether each element is present, but rather assesses whether decisions between elements create consistent value.

Product Quality of Traditional Food Brands and Packaging

Perceived quality is a customer's overall assessment of a product's superiority [26]. This assessment is not always the same as technical testing, but is shaped by experiences of taste, texture, aroma, appearance, cleanliness, shelf life, and consistency. Traditional food producers need to manage both technical quality and the cues consumers use to assess quality.

Brands help consumers recognize the source of a product and connect previous experiences with subsequent purchasing decisions. Brand equity arises when a name or symbol produces a different response than a product without an identity [28],[29]. In markets with many similar products, an invisible brand prevents customer satisfaction from fully converting into an asset for the manufacturer. Consumers may remember where they bought it or the type of product, but not who produced it. Packaging has protective, handling, informational, and communication functions [30],[31]. In the context of tempeh, packaging is also related to biological processes because mold requires certain aeration conditions. Leaves can create distinctive aromas and traditional associations, while plastic offers a practical and relatively easy-to-handle form. Because these functions differ, packaging strategies should not be uniform across all variants.

Brand identity can be enhanced without diminishing the packaging's core character. Small labels, paper tape, post-fermentation stickers, or secondary packaging can display the manufacturer's name, contact information, product information, and valid certification marks. Interventions must be tested to ensure they do not impede aeration, cause condensation, disproportionately increase costs, or generate excessive waste. Therefore, packaging innovations need to simultaneously consider product protection, communication, cost, and sustainability. Tempeh literature shows that process control is the foundation of quality [5],[6],[7]. Variations in temperature, cleanliness, water content, and fermentation

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time can affect texture, aroma, and shelf life. From a marketing perspective, quality control is the most fundamental brand promise. Extensive promotion without consistent production only increases the likelihood of complaints. Therefore, strengthening marketing must begin with the ability to maintain quality.

Affordability and Trust

Customers evaluate prices by comparing the benefits received and the sacrifices incurred [26]. For everyday food products, the sacrifice is not only money, but also the time to obtain the product, the risk of receiving inconsistent quality, and storage costs. Affordable prices will be more valuable if the product is easy to find and can be consumed as expected.

Micro-business owners often use market prices as a reference because they lack a detailed cost accounting system. This practice helps maintain competitiveness but can lead to declining margins when raw material costs increase. Simple record-keeping of raw materials, auxiliary materials, energy, labor, packaging, shrinkage, distribution, and retailer margins is necessary to determine a minimum acceptable price.Adjusting sizes is one way to maintain nominal prices. This strategy is justified if sizes are consistent and communicated fairly. If customers perceive quantities as being reduced without explanation, perceptions of fairness can be compromised. Large purchase discounts should also be calculated based on distribution savings or faster turnover, not simply on negotiating habits. Thus, transparency and record-keeping are the link between affordability and business sustainability.

Word of Mouth and Digital Marketing for MSMEs

Word-of-mouth recommendations are influential because they come from social relationships that are considered more independent than advertising [32],[33]. Recommendations reduce uncertainty and are highly relevant for products that are purchased repeatedly. However, messages can change, reach is limited to certain networks, and the manufacturer's name may not be remembered. Word of mouth will be more productive if potential customers can follow up on recommendations through clear identities and contacts.

Digital marketing encompasses the process of creating, delivering, and sustaining value through technology and data [19],[20],[21]. For MSMEs, the potential benefits include visibility, direct communication, product documentation, feedback collection, and coordination efficiency. The use of technology must be tailored to the organization's capabilities. Studies on MSMEs show that the main barriers are not only cost, but also time, skills, consistency of use, and integration with the business model [24],[25]. Technology acceptance theory explains that perceived benefits, ease of use, social influence, and enabling conditions influence adoption decisions [34],[35]. In owner-managed micro-businesses, tools with a low learning curve are more likely to be retained. WhatsApp Business can be a starting point because it is close to customer communication habits. The catalog, quick reply, location, and customer label functions can support activities without building a complex e-commerce system.

A mature digital orientation is not characterized by a multitude of platforms, but by the ability to consistently use technology for business purposes [22]. An unmaintained social media account does not demonstrate digital capability. Conversely, a single channel that provides accurate information, responds quickly, and is connected to production and distribution demonstrates better integration. Digital transformation also involves changing business models and organizational capabilities [24],[25],[36],[37],[38]. Technology can change the way businesses interact with customers, acquire orders, manage production, and collaborate with retailers. However, these changes need to be gradual so as not to create demand that exceeds production or delivery capabilities.

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METHODOLOGY

Research Design and Location

The research used a qualitative approach with an exploratory single case study design. The case study was chosen because marketing practices cannot be separated from the production context, owner resources, location, and customer relationships [39],[40]. The aim of the research was not to measure the relationship between variables in the population, but rather to explain how marketing decisions are implemented and interconnected in a single business unit. The research location was the Tempe Pandawa MSME in Pantai Bunga Alley, West Delitua Village, Delitua District, Deli Serdang Regency, North Sumatra. The business was founded in 1999 and chosen because it has been operating for a long time, has three product types, uses direct channels and markets, and has not yet adopted digital marketing. The research and report preparation took place from January to May 2026.

Informants and Data Sources

Primary data was obtained from one owner as the primary informant and four customers as supporting informants. The owner provided information on business history, production, quality, packaging, legality, pricing, discounts, cost changes, location, distribution, market coverage, promotions, and digital media usage. Customers provided information on product interest, affordability, product acquisition methods, and promotions received. Documentation data was used to complete the business profile and activities.

Table 1. Informant Profile and Evidence Function

Code	Informant	Age	Functions in analysis
O1	Owner	23	History, production, pricing, channels and promotion
C1	Customer 1	21	Leaf tempeh preferences, direct purchases, prices, and promotions
C2	Customer 2	35	Plastic tempeh preferences, market purchases, prices, and promotions
C3	Customer 3	28	Tempe gembus preferences, direct purchases, prices, and promotions
C4	Customer 4	38	Leaf tempeh preferences, market purchases, prices, and promotions

Table 1 presents the profiles of five informants involved in this study, comprising one business owner and four customers aged 21–38 years. Each informant provides distinct perspectives on tempeh products, purchasing preferences, pricing, distribution channels, and promotional activities. These complementary accounts support the analysis of production and marketing practices, enabling data triangulation between the owner's business perspective and customers' consumption experiences and market interactions.

Informant selection was conducted purposively based on knowledge and experience of the case. The qualitative sample size was not intended to produce statistical representation. The adequacy of information was influenced by the research focus, sample specificity, quality of dialogue, and analysis strategy [41]. However, the limited number of informants was recognized as an important limitation of this study.

Data collection

Interviews were conducted semi-structured using guidelines developed from four elements of the marketing mix. Product questions covered product type, quality, process constraints, packaging, business permits, and halal certification. Price questions covered price range, discounts, product differences, and responses to rising soybean prices. Place questions covered reasons for location selection, ease of access, location influence, and

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market coverage. Promotion questions covered promotional methods, use of digital media, assistance from third parties, and customer acquisition efforts. Customer interviews used four core questions: most popular products, affordability, ease of obtaining products, and promotions received. The same question format facilitated comparisons, but the researcher still allowed informants to explain their reasons. Prior to interviews and documentation, the researcher requested permission from informants. Customer identities were presented using codes to limit the disclosure of personal data.

Data Analysis

The analysis was conducted in two cycles. In the first cycle, informant statements were deductively grouped into product, price, place, and promotion. Each category was then broken down into indicators such as variety, quality, packaging, price list, discounts, channels, coverage, word of mouth, and digital media usage. In the second cycle, the owner's answers were compared with the customer's answers to look for convergence, differences, constraints, and interrelationships between elements. The procedure followed the logic of thematic analysis and qualitative content analysis [42],[43],[44],[45],[46]. The researcher separated the information stated by the informants from the interpretations developed based on the literature. The numerical data regarding the four customers were used only as a description of the informants and were not interpreted as market proportions.

Table 2. Research Analysis Matrix

Dimensions	Key indicators	Cross-element questions
Product	Variety, quality, packaging, legality	Do product practices produce a consistent and recognizable offering?
Price	Price, affordability, discounts, cost response	Does price adaptation protect access without damaging trust and margins?
Place	Direct selling, market, store, coverage	Does the channel fit the perishable nature and repeat purchases?
Promotion	Word of mouth, interaction, digital channels	Does communication convert local trust into branded demand?

Table 2 outlines the research analysis matrix used to examine the marketing practices of the tempeh business across four dimensions: product, price, place, and promotion. Each dimension is assessed through specific indicators and cross-element analytical questions to identify relationships between marketing decisions and business performance. This framework supports a systematic interpretation of interview data, enabling the study to evaluate product consistency, pricing strategies, distribution suitability, and promotional effectiveness in strengthening customer trust and sustaining competitiveness in local markets.

Validity and Limits of Analysis

Credibility is maintained through comparison of sources between owners and customers. Descriptions of the context, informant profiles, instruments, and analysis steps are presented to allow for traceability of the process. This strategy aligns with the principles of case study reliability and qualitative research quality criteria [39],[43],[47]. The study does not claim theoretical saturation, customer representation, or causal relationships. Transferability depends on the similarity of characteristics between this case and other micro-food businesses. Digital recommendations are positioned as analytical implications to be tested, not as outcomes of intervention evaluation, as the businesses had not yet implemented digital programs at the time of data collection.

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RESULT AND DISCUSSION

Case Profile

Tempe Pandawa is a family business founded by Slamet Mulyani in 1999. The owner, originally from Pekalongan, Central Java, started the business in Delitua to improve his family's income. In the early stages, production used simple capital and equipment. As demand grew, the business employed labor and machinery, but the owner remained the primary decision-maker. The main products consist of tempeh daun (leaf tempeh), tempeh plastik (plastic tempeh), and tempeh gembus (gembus tempeh). The primary market is the Delitua area, including households and students. Products are sold from the production house, marketed through markets, and consigned to vegetable shops. The owner reports that the business is licensed and registered for halal certification, but the brand identity is not yet clearly stated on the packaging.

Products as Operational Strength

The findings indicate that product is the most powerful element. Three variants provide choices based on sensory and practical needs. Two customers preferred leaf tempeh for its distinctive aroma and perceived better taste. One customer chose plastic tempeh because the packaging was considered practical and more durable. Another customer chose gembus tempeh for its softer texture. These differences demonstrate that variation is not simply a matter of shape, but rather a simple segmentation based on benefits.

The owner maintains quality through process cleanliness, monitoring production activities, adjusting room temperature, and checking fermentation maturity. Unpredictable weather and power outages are cited as obstacles because they can affect the process. This finding aligns with literature that places fermentation conditions as a determinant of tempeh quality [5],[6],[7]. Process consistency is a source of customer trust and the basis for word-of-mouth promotion.

Leaf and plastic packaging offer different value propositions. Leaf offers a traditional aroma and feel, while plastic offers practicality. Manufacturers don't need to replace one or the other, but they can emphasize the difference in variant names and communications. Tempe gembus can also be positioned as a soft-textured and economical option.

The main weakness lies in identity. Although the owner states that they have a halal permit and certification, the packaging does not yet display a recognizable name. According to brand equity theory, positive experiences need to be associated with memorable cues [28],[29]. Without identity, customers may remember tempeh purchased at a particular location, but be unable to locate the producer when they move. Packaging interventions should be simple and not disrupt fermentation. Labels or tape can be applied after the relevant fermentation stage. Minimum information should include the name of Tempe Pandawa, product type, order number, location, and any certification marks used as required. Testing should examine cost, adhesion, legibility, moisture content, and customer response. This approach combines the protective and communication functions of packaging [30],[31].

Price and Strategy to Maintain Affordability

The owner reported a price range of IDR 2,000 to IDR 8,000, depending on the type and size. The product list in the report lists general prices of IDR 4,000 for leaf tempeh, IDR 3,500 for plastic tempeh, and IDR 2,500 for gembus tempeh. All four customers stated that the prices were still affordable. The affordable price is part of the value, as tempeh is consumed as a daily food.

When soybean prices rise, owners tend to maintain nominal prices by adjusting weight or size. This strategy protects purchasing power and maintains a familiar price point. However,

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size changes need to be standardized. If size changes without certainty, customers may perceive the product's value as decreasing even if the nominal price remains the same.

Discounts and bonuses are offered to customers who purchase in bulk. These promotions can speed up product turnover and reduce transaction costs. To be sustainable, the discount amount must be linked to costs and margins. Simple cost accounting will help owners determine whether discounts are generating profitable additional sales or simply reducing revenue. Analysis shows a direct relationship between price and product. Price adjustments through size reductions change the benefits received by consumers. Therefore, price evaluations should use both cost and perceived value measures simultaneously [26],[27]. A testable alternative is to provide several clearly labeled measures so that customers can choose the amount spent without confusion.

Place and Distribution Embedded in the Community

The production house's location is considered easily accessible and close to the market. Two customers obtain products directly from the production house, while two others typically purchase at the market. The owner also consigns products to a vegetable shop. This combination strikes a balance between direct contact and shopping convenience. Direct sales allow owners to receive feedback and maintain margins. Market channels and grocery stores expand access through existing shopping habits. For fresh produce, local networks also support faster turnover. Therefore, expansion doesn't have to be immediately directed to distant regions.

The limitation lies in the coverage, which is still concentrated in Delitua. This issue can be addressed by increasing the density of sales points before geographic expansion. Owners can record retailer names, delivery schedules, number of consignments, products sold, and remaining returns. This information helps select productive channels. Technology can strengthen local networks by displaying maps of production facilities, lists of stores selling products, product availability times, and ordering contact information. Consumers don't need to change their entire shopping habits; technology simply reduces uncertainty. This approach better aligns with the nature of tempeh than long-distance shipping, which increases quality risks.

Trust-Based Promotion but Digitally Invisible

Promotion is carried out through direct communication, customer recommendations, consignment of products at vegetable shops, and large purchase discounts. Most customers learn about the product through other people. This pattern confirms that social trust plays an important role in purchasing decisions [32],[33].

Word of mouth has low cost and high credibility, but the message isn't fully controllable. Potential customers may receive recommendations without obtaining contact information, variant information, point of sale information, or manufacturer names. As a result, the benefits of recommendations stop at the category or location level and don't fully translate into Tempe Pandawa's equity. At the time of the study, the business had not yet utilized social media or online sales platforms. This lack of visibility poses a weakness, but it does not mean the business should immediately jump onto various platforms. MSME studies show that digital benefits are determined by the integration of technology with business capabilities and processes [24],[25]. Unmaintained channels can create misinformation and slow responses.

The primary need is discoverability. People receiving recommendations should be able to find the name, contact information, location, variants, price range, and availability. WhatsApp Business can be used for catalogs, quick replies, customer labels, and reorders.

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Digital maps can help with location. The identity on the packaging serves as a bridge between the product experience and digital channels. Social media content can be developed once the basic functions are up and running. Suitable content includes the cleaning process, the differences between leaf and plastic tempeh, storage methods, processing ideas, production schedules, and point-of-sale information. Claims must be substantiated. Initial success should be measured by inquiries, repeat orders, and product turnover, not by the number of followers.

Synthesis of Marketing Mix Elements

The following table synthesizes the marketing mix of Tempe Pandawa MSMEs across four elements: product, price, place, and promotion. It identifies key strengths, operational limitations, and their analytical implications to assess current marketing performance. This diagnosis provides a basis for developing strategies that strengthen brand identity, maintain affordability, expand market reach, and improve promotional effectiveness for sustainable business growth.

Table 3. Marketing Mix Diagnosis Of Tempe Pandawa MSMEs

Element	Strength	Limitations	Analytical meaning
Product	Three variants; cleanliness and fermentation monitoring; permits and halal reported	Weak packaging identity; sensitive to weather and electricity	Quality builds trust, but brand equity has not yet been fully captured
Price	Affordable; volume discounts; market-oriented	Sizes may change as costs rise; cost recording is not yet formal.	Access is maintained, but transparency and margins need to be maintained.
Place	Production houses, markets and vegetable shops	Coverage is concentrated in Delitua	Channels according to product properties; local density can be increased
Promotion	Word of mouth and direct relationships	No digital channels; limited messaging and visibility	Trust exists, but it is difficult to extend and attach to the brand.

The results support the first proposition: consistent quality, affordable prices, and close channels maintain local demand despite limited formal promotion. All four customers gave positive assessments of price and accessibility. However, this support is descriptive of the informants and cannot be translated into population conclusions. The second proposition is also supported. Customer recommendations convey positive experiences, but packaging that does not display identity causes the communication value not to be fully attached to the brand [28],[29],[32]. In other words, there is a leakage of promotional value: quality is created by the manufacturer, but part of the market memory is attached to the product type or retailer.

The third proposition has not been tested through interventions because businesses have not yet adopted digital channels. However, the case conditions demonstrate a good fit between simple tools and existing processes. WhatsApp Business can strengthen direct communication, while digital retailer listings strengthen local channels. This interpretation aligns with the literature on digital adoption and transformation that emphasizes benefits, convenience, enabling conditions, and integration [36],[37],[38].

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Gradual Digital Transition Model

The proposed model views digitalization as a capability ladder. Each stage needs to be implemented consistently before efforts can add complexity. The goal is to strengthen existing marketing efforts without creating operational burdens that exceed the owner's capacity.

Table 4. Stages Of Low-Cost Digital Transition

Stage	Action	Objective	Simple indicators
Identification	Include appropriate brand, contact, and certification information.	Connecting product experiences with manufacturers	Percentage of packaging with complete identification
Contacts	Create WhatsApp Business catalogs, locations, hours, and replies	Turning recommendations into inquiries and repeat orders	Weekly inquiries and re-orders
Coordination	Record retailers, shipping schedules, stock, and returned products.	Reducing availability uncertainty	Active points, sales and returns
Visibility	Publish product content and availability on one channel	Forming easily searchable evidence	Relevant messages and visits
Tests	Test the radius between or local partner campaigns	Testing requests without compromising freshness	Inter-precision, complaints, and margins

The identification stage is foundational because digital channels won't build a brand if the physical product lacks a consistent name and contact information. The contact stage ensures potential customers can follow up on recommendations. The coordination stage connects demand with availability. The visibility stage expands information, while the testing stage occurs after the previous process has stabilized. Performance measures need to be aligned with objectives. The number of followers alone is not enough to gauge success. More relevant indicators include identity packaging, response time, number of inquiries, repeat orders, active points of sale, product return rate, quality complaints, and contribution margin per size. Simple metrics help owners evaluate technology as a business investment.

This model differs from the approach of directly placing MSMEs on the marketplace. Tempeh has a low unit price and a limited shelf life, which can disproportionate shipping costs and platform commissions. Strengthening local coverage through digital communication is more realistic. If data shows sufficient demand and delivery capacity, businesses can gradually expand their reach. Implementation also requires a division of responsibilities. Owners need to determine who answers messages, updates catalogs, records stock, and monitors complaints. Without accountability, technology is merely a display. Clear work processes are part of digital transformation, in line with the perspective of digital business strategy [38].

Research shows that the 4Ps framework remains relevant when viewed as a system. Tempe Pandawa's weakness is not simply the lack of social media, but rather the imbalance between operational value and the ability to capture brand value. Product, price, and place generate satisfaction and access, while promotion depends on customers and retailers. Weak packaging prevents word of mouth value from fully returning to the producer.

The findings broaden the discussion of MSME digitalization by positioning discoverability as a primary capability. Before analytics, advertising, or marketplaces, businesses need to be discoverable and contactable. In relational businesses, the primary digital function is making actionable recommendations. This perspective connects the

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marketing mix, brand equity, word of mouth, and technology adoption theory. The case also demonstrates that product characteristics limit digital options. Strategies cannot be copied from durable products. Freshness, transaction value, distribution radius, and production capabilities must be part of channel design. Thus, digital readiness is contextual and cannot be measured solely by account ownership.

Managerial Implications

The first priority is standardizing product names, sizes, and basic information. Owners need to define a simple visual identity that can be used on leaflets, plastic, stores, catalogs, and messages. Consistency is more important than complex design. Certification is only displayed if the number and usage mark are confirmed to comply with regulations. The second priority is cost and channel tracking. Each variant should have records of materials, production yields, prices, discounts, quantities shipped, quantities sold, and returns. This data helps determine sizing and pricing more transparently. Retailers with strong sales can be prioritized in the schedule.

The third priority is a well-maintained communication channel. WhatsApp Business was chosen because it's relatively easy and closely aligns with consumer habits. The catalog doesn't need to contain too much information. Clear photos, variant names, sizes, price ranges, locations, and ordering instructions are sufficient. Owners must ensure the information is updated. The fourth priority is small experiments. Businesses can test labels on a portion of production, record customer inquiries for four weeks, and compare repeat orders. Other experiments could include adding a single storefront or weekly content. Small tests reduce risk and generate lessons learned that can be used before larger investments [48],[49],[50].

The findings reveal that Tempe Pandawa's marketing performance depends primarily on product quality, affordability, community relationships, and accessible distribution rather than formal promotional activities. The four marketing mix elements are interdependent: consistent fermentation quality supports customer satisfaction, competitive pricing preserves purchasing accessibility, and local distribution facilitates product availability. However, the absence of a recognizable brand identity limits the business's ability to convert customer satisfaction and word-of-mouth recommendations into sustained brand equity.

The principal managerial challenge is therefore not simply adopting digital technology, but integrating branding, cost management, distribution coordination, and customer communication into existing business operations. Standardized product labels can connect purchasing experiences with the producer, while systematic cost records can improve pricing decisions and protect profit margins. Meanwhile, WhatsApp Business and digital location information offer practical opportunities to strengthen discoverability, facilitate repeat orders, and coordinate local retailers without immediately expanding into costly online marketplaces.

Nevertheless, these recommendations remain propositions requiring empirical evaluation rather than demonstrated outcomes. The evidence derives from a single MSME case and four customer informants, limiting generalizability. Future research should examine whether incremental digital adoption improves customer retention, sales turnover, distribution efficiency, and profitability over time. Overall, sustainable MSME development requires balancing operational capabilities, customer value, and context-sensitive digital innovation to transform existing community trust into measurable business growth.

CONCLUSION

The Pandawa Tempe MSME has implemented a marketing mix through three product variations, pricing tailored to market capacity, distribution through local production houses and intermediaries, and word-of-mouth promotion. The product is a key strength, as the

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variety of packaging and textures cater to different preferences. Cleanliness, fermentation monitoring, and temperature control are the foundations of consistent quality. The price is perceived as affordable by the four customers interviewed. The owner maintains the price by adjusting the size when soybean prices rise and offering discounts on large purchases. This strategy needs to be supported by standardization of size and cost recording to ensure affordability without sacrificing trust and margins. Local distribution aligns with tempeh's fresh nature. Direct sales provide access and feedback, while markets and vegetable shops add convenience. Coverage is still limited to Delitua, but development should begin with increasing point-of-sale density and coordinating availability before expanding. Key gaps lie in promotion and identity. Trust has been established through customer experience, but the packaging lacks brand recognition and the absence of digital channels limit discoverability. Word of mouth generates demand but does not fully build Tempe Pandawa's equity. An appropriate digital transition should be gradual: clarifying packaging identity, providing a catalog and WhatsApp Business contacts, mapping retailers, publishing simple content, and testing limited expansion. This strategy links technology to existing product, pricing, and distribution channels. Recommendations need to be tested through longitudinal data, as this study only provides analytical generalizations from a single case.

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Author Contribution

All authors contribute equally to the publication of this paper, all authors read and agree to this paper, and all authors declare no conflict of interest.

Conflicts of Interest

All authors declare no conflict of interest.

Use of Artificial Intelligence (AI)

The authors used artificial intelligence tools solely to support language refinement, grammar checking, and academic expression. AI assistance did not replace scholarly judgment, research design, data interpretation, conceptual development, or responsibility for the manuscript.

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