



A new online marketing mix strategy to unlock digital commerce success

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ABSTRACT

Digital commerce plays a critical role in driving business growth, enhancing customer satisfaction, and achieving success in the digital environment. Unlike traditional e-commerce, digital commerce integrates advanced technologies and strategic approaches to optimize both customer experience and business operations. Although the Marketing Mix is a widely used framework for planning and implementing marketing strategies, there is currently no specific model designed for the digital commerce context. This study aims to develop an online Marketing Mix strategy tailored to the needs of digital commerce by identifying and analyzing key success factors. A mixed-methods approach was employed, combining qualitative data from 21 expert interviews analyzed through Fuzzy Set Theory and quantitative data from an online survey of 600 digital entrepreneurs in Thailand, analyzed using first-order confirmatory factor analysis (CFA). The results highlight six key factors—Product, Experience, Site, Communication, Engagement, and Loyalty—that form the basis of the proposed framework, named 'PESCEL.' This framework provides a comprehensive guideline for businesses to navigate the complexities of digital commerce and addresses the limitations of traditional Marketing Mix models in capturing the dynamics of online consumer behavior and multi-channel communication. By leveraging these factors, businesses can strengthen their online marketing strategies and achieve sustainable success in the digital landscape.

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1. Introduction

In today's digital environment, a pure E-commerce focus is insufficient to drive optimal business performance. While E-commerce focuses specifically on online transactions for buying and selling goods or services. It primarily involves online storefronts and marketplaces where customers can browse, select, and purchase products. On the other hand, digital commerce encompasses a broader spectrum by integrating digital technologies across the entire customer lifecycle, including social media marketing, mobile-first experiences, AI-powered chatbots, streamlined payment gateways, efficient order fulfillment, robust CRM systems, and data-driven decision-making. Fundamentally, E-commerce only focuses on online buying and selling, but digital commerce encompasses all digital tools and strategies that facilitate and enhance these

processes. By understanding and implementing digital commerce strategies, businesses can unlock new growth opportunities, enhance customer satisfaction, and thrive in the digital age.

The Marketing Mix is an essential concept in marketing management, serving as a strategic framework for planning and executing effective marketing campaigns. Initially conceptualized by [Borden \(1964\)](#) the marketing mix concept was later refined by [McCarthy \(1978\)](#) into the renowned "4P" framework, which includes Product, Price, Place, and Promotion. These four elements represent critical decision points for marketers in achieving target market objectives.

While the traditional 4P remains a cornerstone of marketing strategy, the evolving landscape of the marketplace has necessitated the emergence of alternative frameworks. The 7Ps, 4Cs, and 4Es models, among others, have emerged to address the specific needs in different marketing contexts and environments. 7P: Service Marketing Mix ([Booms and Bitner, 1981](#)) is an extension of the traditional 4P framework, adding three additional elements: People, Process, and Physical Evidence, to provide a more comprehensive set of tools for service marketers. 4C: Customer-Centric Marketing Mix

replaces Product, Price, Place, and Promotion with Consumer, Cost, Convenience, and Communication, reflecting a more customer-centric approach. 4E: Experience Marketing Mix (Bernd, 1999) introduces Experience, Every Place, Exchange, and Evangelism to focus on creating memorable and engaging customer experiences.

These Marketing Mix strategies mentioned are just a few examples that have been developed. It's worth noting that there are other Marketing Mix frameworks, introduced by both academics and marketers. These also are currently being utilized as effective marketing tools. While the 4P remains a fundamental and widely used model, these additional frameworks provide marketers with more comprehensive and specialized approaches to developing effective marketing strategies.

However, the ever-evolving digital landscape demands a constant re-evaluation of marketing strategies. Existing marketing mix frameworks may not fully support the complexities of online consumer behavior and varieties of communication and distribution channels. Moreover, there is currently no specific Marketing Mix Framework designed specifically for use as an online marketing tool for digital commerce. Therefore, researchers aim to study and develop a new online marketing mix strategy that prioritizes customer experience, particularly customer engagement on social media, as a key strategy in today's online marketing. While recognizing the enduring significance of the product as a foundational element, this new framework will seamlessly integrate the functionalities of e-commerce and social commerce features, tools, and new technologies. Additionally, ethics and customer privacy will be considered to ensure the sustainability of this marketing mix framework for future use. The research aims to achieve the following objectives: 1) To develop online marketing mix strategies aimed at facilitating the more efficient growth of businesses for digital commerce. 2) To analyze and explore the factors contributing to the success of online marketing mix strategies for digital commerce.

2. Literature review

To develop a new online marketing mix strategy, the researcher conducted a comprehensive review of literature from various sources including published papers, books, websites, and both Thai and foreign research journals. All concepts and theories derived from this review. The researcher therefore developed and drafted a framework shown in Fig. 1.

2.1. Product (PDT)

Product is the foundation of the marketing mix, representing a business's key value proposition to meet customer needs. Features, quality, design, packaging, variety, and branding are critical elements that influence consumer behavior and purchase decisions.

Products with unique features addressing specific consumer needs, combined with high-quality and effective packaging design, are more likely to influence purchase decisions (Janah et al., 2023). Well-designed packaging communicates brand identity and quality while helping products stand out in the marketplace. Clear communication of product features and quality significantly impacts consumer perceptions and purchase decisions impact consumer perceptions and preferences, influencing consumers' willingness to buy (Sainy, 2024).

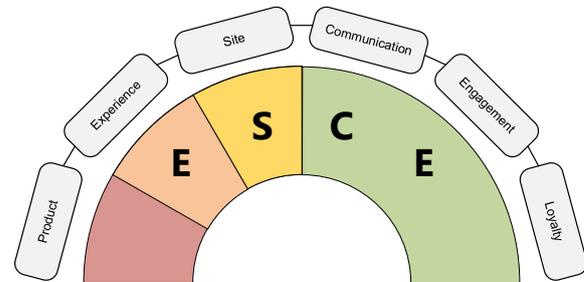


Fig. 1: Conceptual framework (PESCEL; Online Marketing Mix Strategy)

2.2. Experience (EXP)

The economy has shifted from goods-based to experience-based, with businesses now focusing on creating unique customer experiences (CX) to differentiate themselves. Customers are willing to spend more on compelling experiences. Traditional marketing fails to address the emotional and experiential aspects of customer interactions. Bernd (1999) recognized this evolving landscape and introduced the 4E marketing mix, specifically designed to address this gap by placing customer experience at the forefront of marketing strategy.

Customer service quality, including responsiveness, reliability, and empathy, directly impacts satisfaction. Professionalism and a service mindset also influence purchase decisions. Customers value expertise and choose businesses where they feel valued. Prompt responses on social media further enhance satisfaction (Apriyanti, 2023; Nurma and Kiran, 2024; Ridwan, 2022).

Improving e-commerce customer convenience requires streamlined processes and seamless experiences across touchpoints, including diverse payment options such as credit/debit cards, digital wallets, and other alternative payment solutions (Tripathi and Dave, 2022). Transparent shipping information and hassle-free return policies with clear instructions build customer trust and encourage repeat purchases (Zhao et al., 2024).

Implementing technology or tools in supporting e-commerce businesses enhances customer experience. AI-powered chatbots provide 24/7 support and enable conversational commerce (Sidlauskiene et al., 2023) Integrate shipping and fulfillment solutions to streamline order fulfillment, print labels, and track shipments. Offer flexible shipping options like same-day delivery to meet expectations and cut costs. Prioritize accurate order

fulfillment to ensure customer satisfaction and avoid negative impacts on future purchases (Nagadeepa et al., 2024).

2.3. Site (SIT)

In the context of this online marketing strategy, the term 'Site' refers to the various digital channels and platforms where businesses promote and sell their products to target audiences. This includes social media platforms (Facebook, TikTok), online marketplaces (Shopee, Lazada), and business websites. Effective site management focuses on seamless product distribution and accessibility through these channels, ensuring efficient delivery and positive customer experiences. Businesses must strategically manage both digital and physical channels to maximize product availability, ensuring efficient delivery and convenient access to meet customer preferences and deliver positive experiences.

Clear, accurate product information across websites and social media platforms, along with transparent seller details, helps customers make informed decisions and build trust. Transparency about the seller, including contact information, further strengthens credibility.

User Experience (UX) design featuring a user-friendly interface and simplified navigation, fast loading times, and high-quality visuals enhances customer satisfaction. Responsive design ensures cross-device compatibility, while SEO optimization increases visibility and attracts targeted traffic (Guo et al., 2023; Kumar et al., 2023).

Robust security and privacy are crucial for e-commerce success. Encryption, fraud detection, and secure authentication protect customer data and build trust. Compliance with data protection regulations demonstrates a commitment to privacy, encouraging customer engagement and purchase intent. A secure e-commerce environment ultimately cultivates customer loyalty and drives repeat business (Poudel et al., 2023; Iqbal et al., 2021; Excel and Samuel, 2024).

2.4. Communication (COM)

Communication is a key component of the '4C' marketing mix which shifts the focus from a product-centric approach of traditional 4P to a customer-centric approach. Communication involves information exchange between the brand and the customer. Marketers use channels like advertising, PR, social media platforms, and content marketing to engage customers, convey messages, and build relationships. Effective communication is essential for awareness, education, and purchase influence. The communication elements in this marketing mix include:

1. Owned media refers to the communication channels that a brand directly owns and controls like websites, blogs, social media, email, and apps,

crucial for brand visibility, engagement, and CRM. Social media platforms (e.g., Facebook, Instagram, TikTok, Twitter) offer vast reach for content sharing and brand awareness (Arinni and Sharif, 2022; Alalwan et al., 2017; McGrath et al., 2023). Clear product information on these channels empowers informed purchases (Ntobaki et al., 2022). Visually appealing content and consistent posting schedules further enhance engagement (Pathak and Kaushik, 2024; Tafesse and Wien, 2018).

2. Paid Media involves advertising or promotional content that a brand pays to reach its target audience such as display ads, social media ads, search engine ads, and sponsored content to reach beyond organic audiences and target specific demographics. Targeted campaigns allow a precise audience to reach, maximizing engagement and conversions. Effective campaigns communicate product benefits, address customer needs, and include compelling CTAs. Retargeting and remarketing campaigns in which brands can reach out to customers who have previously interacted with their website or shown interest in their products via paid media remind interested customers to complete purchases (Prasad et al., 2021).

2.5. Engagement (EGM)

While often discussed within experience or communication contexts, "Engagement" is a critical addition to the modern marketing mix, particularly given social media's rise. It transcends traditional communication by prioritizing meaningful customer interactions. High engagement fosters brand loyalty, customer satisfaction, and improved business. In this context, "Engagement" refers to brand-customer interactions via digital content and social media campaigns, encompassing activities that drive active participation and stronger relationships.

Social media engagement comprises user interactions with brand content such as likes, comments, shares, clicks, etc., that demonstrate a user's interest and involvement with the content or brand, correlating with improved business outcomes like customer loyalty and lifetime value (Salam, 2024).

Effective Calls-to-Action (CTAs) prompt desired user actions (purchases, contacts, sign-ups). Explainability, intuitiveness, transparency, and usability are key CTA design considerations for enhanced user engagement and satisfaction (Mejtoft et al., 2021).

User-generated content (UGC) comprises consumer-created content like reviews, photos, and social media posts. Integrating UGC enhances brand authenticity, engagement, and credibility, driving customer acquisition and loyalty. UGC increases perceived product credibility and social proof, boosting purchase intentions. Its authenticity and relatability reflecting real user experiences, fosters trust and purchase confidence (De Vera, 2024).

Non-branded content (e.g., educational, entertainment, real-time) is created without direct product promotion. Sharing relevant knowledge and entertaining content enhances audience connection (Berger and Milkman, 2012). Real-time content, responding to current events, fosters immediacy and boosts customer satisfaction.

Influencer marketing leverages individuals with large, engaged social media following to promote products/services. These influences have established credibility and expertise within their niche. Collaboration involves creating and distributing authentic, engaging content, leveraging their reach and credibility to increase brand awareness and sales (Viswanadh, 2024). Influenced partnerships can positively impact customer satisfaction and purchase decisions.

2.6. Loyalty (LYT)

"Loyalty" in the marketing context reflects customers' emotional and behavioral attachment to a brand, driving continued engagement and purchases despite the presence of competing alternatives. In this developed marketing strategy, Loyalty refers to the strategies employed to build and sustain customer loyalty.

Effective after-sales services significantly enhance online customer satisfaction, which in turn fosters customer trust. This trust positively influences repurchase intentions and word of mouth, crucial for customer retention and loyalty.

Loyalty programs (rewards, discounts, exclusive benefits) positively impact customer retention by encouraging repeat business and fostering long-term brand relationships (Kaur, 2024).

Personalized experiences by providing product recommendations, content, offers, etc., based on customer data enhance engagement. Customized touchpoints such as special editions, and pre-release products for VIPs, further personalize the experience. Continuously monitoring and optimizing initiatives based on data insights improves customer experience, conversion rates, and business performance (Amosu et al., 2024).

3. Research methods

This study aims to investigate the development of effective online marketing mix strategies for digital commerce. A mixed methods approach was used, combining both quantitative and qualitative research methods to collect and analyze data comprehensively. This study adhered to Rangsit University's ethical standards for human research, reviewed and approved by the Ethics Review Board of Rangsit University in Thailand with COA. No. RSUERB2022-088. Participants agreed to take part in the survey after being informed about the study. Privacy and confidentiality of their information were rigorously protected, and no personal details were gathered. The qualitative research conducted a literature review and formulated questions based on

their findings. In-depth interviews were then carried out with a group of 21 experts. All experts were selected by their specific areas of knowledge, expertise, and experience such as digital marketing, e-commerce, and consumer behavior. Divided into 3 distinct groups. 1) Three university professors with a background in marketing and business administration. 2) Eight specialists in online marketing and digital business. 3) Eight accomplished digital business entrepreneurs. The answers collected were used in creating a closed-ended questionnaire with a 7-point Likert scale to confirm the opinions of the experts for a total of two rounds. The data collected were analyzed and summarized using Fuzzy Set Theory to determine a consensus among the participants with a crisp value threshold of more than 0.83.

The quantitative research focused on the population consisting of 900,626 digital entrepreneurs in Thailand. A sample size of 600 digital entrepreneurs in Thailand was selected using the convenience sampling method. Data was collected through an online questionnaire with a 7-point Likert scale. The data collected were then analyzed using a first-order confirmatory factor analysis (CFA).

4. Results

The results of this study include findings from both qualitative and quantitative research. The qualitative analysis was based on the input of 21 experts and assessed for consensus using Fuzzy set theory, with a crisp value threshold of more than 0.83, as illustrated in Table 1. The qualitative research data collected through the Fuzzy Set Theory can help identify significant factors that influence the development of online marketing mix strategies for digital commerce. This method involves summing up the scores ranked based on the selection of factors and indicators with the best score. The six variables that are considered are PDT, EXP, SIT, COM, EGM, and LYT. The quantitative research was analyzed using descriptive statistical principles to provide a detailed description of the data. The data were analyzed using confirmatory factor analysis with statistic software, to determine whether the confirmatory elements of the developed online marketing mix strategies for digital commerce are consistent with empirical data. Evaluating the reliability and validity of measurement instruments is crucial in research, particularly those involving surveys and questionnaires. Three key metrics play a significant role in this research: Cronbach's Alpha (α), Composite Reliability (CR), and Average Variance Extracted (AVE), as shown in Table 2.

A first-order confirmatory factor analysis of online marketing mix strategies for digital commerce based on empirical data. The first-order confirmatory factor analysis (Fig. 2) was to find out online marketing mix strategies. Analyzing the consistency between the model created and the empirical data obtained revealed several goodness-

of-fit values. The index value of $\chi^2 / df = 1.922$, less than the standard value of 0.5. The GFI = 0.97, the AGFI = 0.95, the TLI = 0.99, and the CFI = 0.99, all of which are greater than the benchmark of 0.90. On the other hand, the RMSEA value is 0.01, and the

SRMR = 0.01, both of which are less than 0.08. Additionally, Hoelter's = 943, which is greater than the benchmark of 200. All goodness of fit values meet the required criteria, proving model compatibility with data (Table 3).

Table 1: A summary of the analysis results obtained using Fuzzy and the accepted components

No.	Average	Crisp	Consensus	No.	Average	Crisp	Consensus				
PDT1	0.83	0.96	0.99	0.927	Accepted	COM1	0.81	0.94	0.99	0.915	Accepted
PDT2	0.75	0.90	0.97	0.874	Accepted	COM2	0.84	0.96	1.00	0.935	Accepted
PDT3	0.75	0.90	0.97	0.874	Accepted	COM3	0.79	0.93	0.99	0.903	Accepted
PDT4	0.81	0.94	0.99	0.911	Accepted	COM4	0.80	0.93	0.98	0.903	Accepted
PDT5	0.78	0.92	0.98	0.891	Accepted	COM5	0.66	0.83	0.92	0.862	Accepted
EXP1	0.82	0.95	1.00	0.919	Accepted	EGM1	0.82	0.95	0.99	0.919	Accepted
EXP2	0.82	0.94	0.98	0.913	Accepted	EGM2	0.80	0.94	0.99	0.911	Accepted
EXP3	0.70	0.86	0.95	0.837	Accepted	EGM3	0.75	0.90	0.98	0.878	Accepted
EXP4	0.76	0.90	0.95	0.871	Accepted	EGM4	0.77	0.92	0.98	0.891	Accepted
EXP5	0.70	0.85	0.93	0.832	Accepted	EGM5	0.74	0.88	0.96	0.860	Accepted
SIT1	0.85	0.97	1.00	0.939	Accepted	LYT1	0.79	0.93	0.98	0.899	Accepted
SIT2	0.81	0.94	0.98	0.910	Accepted	LYT2	0.82	0.95	1.00	0.919	Accepted
SIT3	0.84	0.96	1.00	0.931	Accepted	LYT3	0.71	0.86	0.95	0.843	Accepted
SIT4	0.88	0.99	1.00	0.955	Accepted	LYT4	0.81	0.95	0.99	0.915	Accepted
SIT5	0.87	0.98	1.00	0.951	Accepted	LYT5	0.81	0.94	0.99	0.915	Accepted

Table 2: Result from measurement model

Factor name	Indicators	Standardized loading	R ²	Cronbach's	CR	AVE
Product (PDT)	PDT1	0.781	0.609	0.845	0.836	0.507
	PDT2	0.766	0.587			
	PDT3	0.707	0.500			
	PDT4	0.630	0.397			
	PDT5	0.664	0.441			
Experience (EXP)	EXP1	0.658	0.433	0.820	0.839	0.513
	EXP2	0.702	0.493			
	EXP3	0.805	0.649			
	EXP4	0.781	0.610			
	EXP5	0.617	0.381			
Site (SIT)	SIT1	0.720	0.519	0.864	0.865	0.561
	SIT2	0.751	0.564			
	SIT3	0.745	0.555			
	SIT4	0.742	0.551			
	SIT5	0.784	0.615			
Communication (COM)	COM1	0.661	0.437	0.848	0.833	0.500
	COM2	0.641	0.411			
	COM3	0.739	0.546			
	COM4	0.744	0.553			
	COM5	0.744	0.553			
Engagement (EGM)	EGM1	0.711	0.505	0.861	0.860	0.552
	EGM2	0.672	0.451			
	EGM3	0.801	0.642			
	EGM4	0.769	0.591			
	EGM5	0.755	0.570			
Loyalty (LYT)	LYT1	0.639	0.408	0.850	0.845	0.524
	LYT2	0.757	0.573			
	LYT3	0.814	0.663			
	LYT4	0.716	0.513			
	LYT5	0.681	0.463			

Table 3: The statistical value used to measure the consistency of a first-order confirmatory factor analysis

Statistical values used for examining	Criteria for consideration	Statistics obtained	Consideration
Chi-square: χ^2	Not statistically significant	691.832	Passed
Relative Chi-square: χ^2 / df	≤ 3.00	1.922	Passed
Goodness of Fit Index: GFI	≥ 0.90	0.97	Passed
Adjusted goodness of fit index: AGFI	≥ 0.90	0.95	Passed
Comparative fit index: CFI	≥ 0.90	0.99	Passed
Root mean square error of approximation: RMSEA	≤ 0.08	0.01	Passed

The results show a consistency between the developed framework and the empirical data, as all criteria have been met. This demonstrates that the model is compatible with the data. Overall, these findings support the validity and reliability of the measurement model, indicating that the six factors significantly influence online marketing mix strategies for digital commerce.

5. Discussion

The findings of this research are highly significant in the field of literature and theory. They

demonstrate that the developed strategy of this study is consistent with the empirical data. Six key factors have been identified: 1) Product, 2) Experience, 3) Site, 4) Communication, 5) Engagement, 6) Loyalty.

Product is an essential factor that is still given significance in this marketing mix strategy because it directly affects customer satisfaction, brand image, differentiation, revenue generation, and overall business success. This is consistent with the Principles of Marketing by Kotler and Armstrong (2017), providing value, meeting needs, and influencing perceptions. Understanding how product

attributes can influence consumer behavior is essential for marketers to develop effective marketing strategies and drive sales. Therefore, businesses must carefully manage their product

offerings to meet customer needs, differentiate themselves from competitors, and achieve their marketing objectives.

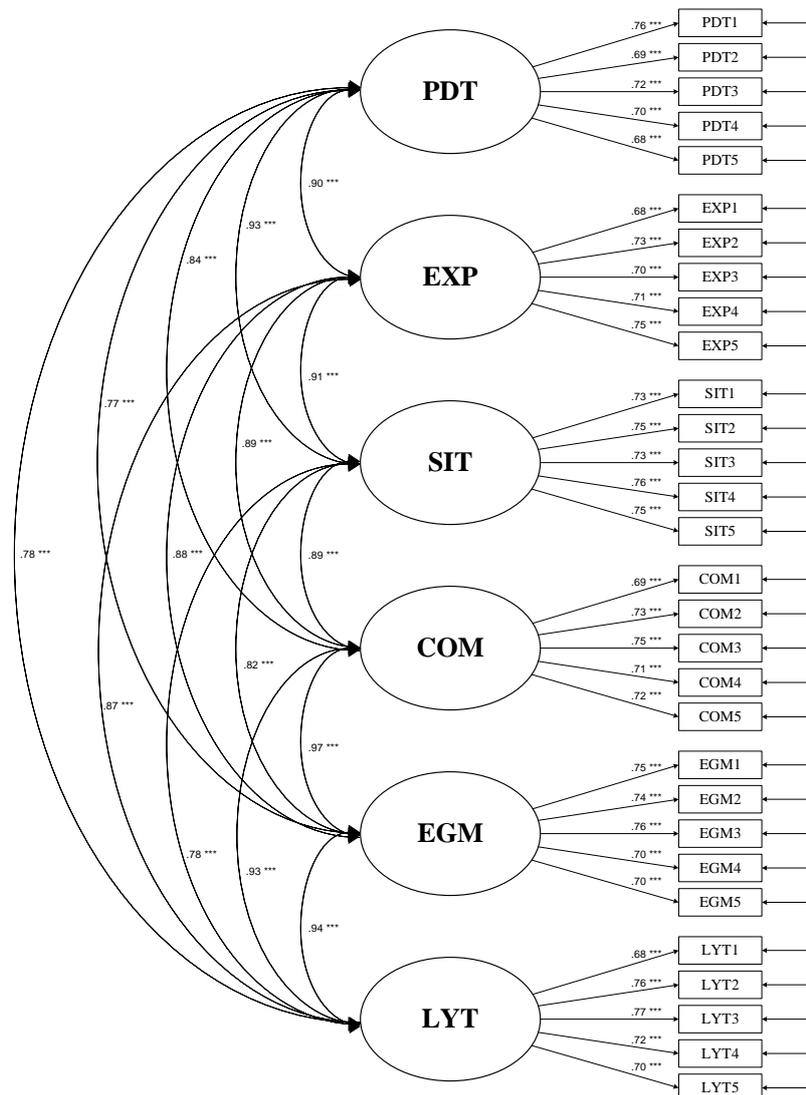


Fig. 2: First-order CFA

Experience is a factor focusing on creating holistic customer experiences across various digital touchpoints. This includes addressing the emotional and experiential aspects of customer interactions, which traditional models often overlook. Positive customer experience creates emotional connections with brands, fostering customer engagement and advocacy. This is supported by a research study that found that personal experiences with a brand significantly influence consumer attitudes. Positive experiences reinforce favorable perceptions, while negative experiences can lead to skepticism and dissonance (Manguerra-Mahusay and Liu, 2024). Satisfied customers are more willing to pay premium prices for products and services, leading to higher average transaction values and increased profitability. The site, in the context of this marketing mix strategy, encompasses the strategic management of various digital platforms, including social media, online marketplaces, and websites for

optimal product promotion and distribution. Each platform has a significant impact on customer purchase decisions, affecting various stages of the consumer journey. The site provides accessibility, convenience, and integration with other marketing mix elements. This is consistent with research that found that social commerce combines e-commerce with social media, crucial for enhancing consumer trust and loyalty. Brands can deliver more personalized and interactive shopping experiences to customers by utilizing social media and e-commerce, resulting in increased loyalty and repeat business. Communication is one of the successful marketing strategies that greatly impact how brands connect with their customers, build relationships, and drive sales. Effective communication helps establish and maintain trust and credibility with customers. Communication via own media such as a brand's website, blog, or social media channels provides opportunities for customers to engage with

informative and educational content about the brand's products or services. Research suggests that providing valuable content can influence purchase decisions by helping customers make informed choices (Voorveld et al., 2018). Furthermore, paid media campaigns, such as social media ads, search engine ads, and display ads, can increase brand visibility and awareness among potential customers. Higher brand awareness has a positive influence on purchase decisions (Singh, 2024).

Engagement refers to the interactions between brands and customers, including participation in digital content and campaigns, focusing on social media platforms. This factor emphasizes building meaningful interactions with customers, going beyond traditional marketing communication to foster active participation and involvement. It builds customer relationships, enhances brand awareness, influences purchase decisions, drives traffic and sales, gathers valuable customer insights, and enhances the overall customer experience. Effective engagement strategies can lead to higher traffic towards the brand's website and increase sales. By sharing User-generated content, non-branded content, or clickable links, brands can direct social media users to their online stores or landing pages. This is consistent with research that concludes that active engagement on social media platforms builds consumer trust, driving sales. Combined with e-commerce improvements, it enhances the online shopping experience.

Loyalty in this strategy refers to building and maintaining customer loyalty, which increases brand value, generates positive word-of-mouth, reduces marketing costs, fosters brand advocacy, and provides valuable customer insights. Loyalty strategies encompass various tactics, such as after-sales service, loyalty programs, and personalized experiences, all contributing to customer satisfaction and influencing purchase decisions. According to a study by Nair (2023), engaged customers are more likely to feel valued and connected to the brand, thus enhancing loyalty and retention.

6. Conclusions

This research has successfully identified and analyzed the key factors that drive effective online marketing strategies for digital commerce. Through a confirmation factor analysis, all six factors are product, Experience, Site, Communication, Engagement, and Loyalty. This newly developed strategy, 'PESCEL,' provides a robust and comprehensive framework that accurately captures the complex interplay of elements influencing online marketing success.

The PESCEL framework represents a novel online marketing mix strategy developed specifically for the dynamic digital commerce landscape. It addresses the limitations of traditional marketing frameworks 4P or 7P, which do not fully capture the complexities of online consumer behavior and the diverse communication channels in digital commerce.

Key differentiators of the PESCEL that go beyond existing marketing mix frameworks are:

1. PESCEL's emphasis on 'Experience' and 'Engagement' addresses the experiential and emotional dimensions of the customer journey. By focusing on the creation of holistic customer experiences, from initial awareness to sustained brand loyalty. Furthermore, it focuses on building meaningful interactions with customers, going beyond traditional marketing communication to foster active participation and involvement focusing on social media platforms and social commerce, which existing frameworks often overlook.
2. The strategic management of 'Site' encompasses diverse digital platforms including social media, online marketplaces, and websites, positions it beyond the scope of traditional marketing mix framework 4P or 7P, which do not fully capture the complexities of online consumer behavior and the diverse communication channels in digital commerce.
3. While embracing these innovative dimensions, PESCEL retains a core focus on the 'Product' offering. This underscores its recognition of the product's enduring importance in value creation, which is being de-emphasized by contemporary marketing mix models such as 4C or 4E.

The results underscore the practical applicability of the PESCEL strategy, demonstrating its potential to serve as a powerful strategic tool for businesses seeking to enhance their online marketing performance. By systematically addressing and optimizing each of the factors, businesses cannot only improve their online marketing but also create a more compelling and impactful online presence, inspiring increased customer engagement, improved conversion rates, and stronger brand loyalty.

Moreover, the implications of the PESCEL strategy extend beyond individual business success. By enabling businesses to thrive in the digital economy, it can contribute to broader economic growth. These developed online marketing strategies can stimulate greater consumer spending, foster innovation, and drive market expansion. Therefore, The PESCEL offers a practical and actionable framework that businesses can employ to navigate the complexities of the digital marketplace and achieve sustainable growth.

7. Suggestions for future research

This study involved collecting qualitative data to create a questionnaire. A total of 21 experts from three different groups provided insights on online marketing mix strategies for digital commerce. Quantitative data were collected from 600 digital entrepreneurs in Thailand. Future research should expand the investigation into other groups of specialists and populations to collect further useful data. Additionally, future research should consider

adding or modifying factors not covered in this study to determine which other factors should be included in the development of marketing strategies that can be adapted to other businesses or environments.

List of abbreviations

AI	Artificial intelligence
AGFI	Adjusted goodness of fit index
AVE	Average variance extracted
CFA	Confirmatory factor analysis
COA	Certificate of approval
COM	Communication
COM1–COM5	Communication indicators
CR	Composite reliability
CTA	Call-to-action
CX	Customer experience
E-commerce	Electronic commerce
EGM	Engagement
EGM1–EGM5	Engagement indicators
EXP	Experience
EXP1–EXP5	Experience indicators
GFI	Goodness of fit index
LYT	Loyalty
LYT1–LYT5	Loyalty indicators
PDT	Product
PDT1–PDT5	Product indicators
PESCEL	Product, experience, site, communication, engagement, loyalty
RMSEA	Root mean square error of approximation
SIT	Site
SIT1–SIT5	Site indicators
SRMR	Standardized root mean square residual
UGC	User-generated content
UX	User experience
χ^2 / df	Chi-square/degrees of freedom

Compliance with ethical standards

Ethical considerations

This study adhered to Rangsit University's ethical standards for human research, reviewed and approved by the Ethics Review Board of Rangsit University in Thailand with COA. No. RSUERB2022-088. Participants agreed to take part in the survey after being informed about the study. Privacy and confidentiality of their information were rigorously protected, and no personal details were gathered.

Conflict of interest

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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