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Guidelines for Utilizing Marketing Innovations to Create Sustainable Competitive Advantages for the Thai Cosmetic Industry

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Abstract

The purpose of this research is to develop a structural equation model to utilize marketing innovation to build a sustainable competitive advantage for Thai cosmetic industry businesses. Qualitative research included in-depth interviews and group discussions with experts, and quantitative research was conducted through questionnaire data collection from 500 business executives. The analysis included descriptive, inferential, and multivariate statistical analyses. The research findings identify the approaches to using marketing innovation to establish a sustainable competitive advantage for Thai cosmetic industry businesses, with four priorities identified: 1) Media Innovation ($\bar{X}$ = 4.33): The most important aspect is designing a website that is user-friendly and easy to contact. 2) Management Innovation ($\bar{X}$ = 4.31): The most important item is using QR codes to facilitate customers. 3) Product Innovation ($\bar{X}$ = 4.30): The most important item is improving product components to meet market demands. 4) Information Innovation ($\bar{X}$ = 4.22): The most important item is controlling data security. The results of the comparison test showed that medium and small businesses placed more importance on using marketing innovation to create a sustainable competitive advantage for the Thai cosmetic industry than large businesses, with statistical significance at the 0.05 level. The results of the analysis of the developed structural equation model indicated that it was consistent with the empirical data, with a chi-square probability level of 0.061, a relative chi-square of 1.151, a fit index of 0.957, and a root mean square error of approximation (RMSEA) of 0.017.

Keywords: *Structural Equation Modeling, Marketing Innovation, Thai Cosmetic Industry, Competitive Advantage.*

Introduction

The Thai economy has faced several challenges in the past decade, including slowing growth, low labor productivity, and global trade volatility (World Bank, 2023). National economic and social development policies have been formulated to address these issues. The 13th National Economic and Social Development Plan (2023-2027) and the 20-Year National Strategy (2018-2037) aim to enhance the industrial sector's capacity and propel the country's economy toward sustainable growth (National Economic and Social Development Board, 2023). Thailand is concentrating on developing high-value-added industries, such as high-tech sectors and innovative research. However, it still faces several constraints, including a reliance on imported technologies and raw materials, alongside insufficient investment in intellectual property and capital accumulation. As a result, the Thai industrial sector has struggled to compete effectively on a global scale, particularly in comparison to competitors like South Korea and Japan (OECD,

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2023).

The cosmetics industry is one of the global economic sectors with a consistently high growth rate, particularly in the Asia-Pacific region, which is the largest market, accounting for 34.40% of the world market. This is followed by the Americas at 34.40% and Europe at 30.20%, as shown in Figure 1 (RNCOS Business Consultancy Services, 2022).

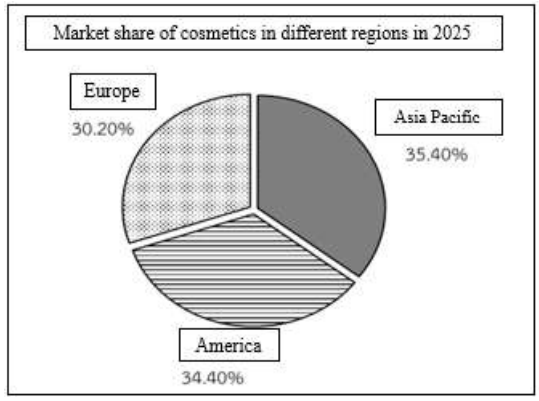

Figure 1. Market share of cosmetics in different regions in 2025

(RNCOS Business Consultancy Services, 2022)

In the context of Thailand, the cosmetics industry has grown significantly, with a market value of 269,747 million baht in 2022, up from 204,000 million baht in 2018, as shown in Figure 2 (Euromonitor, 2023).

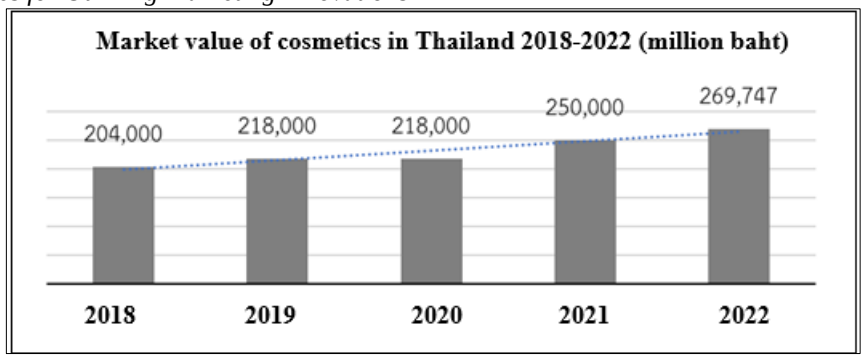

Figure 2. Market value of cosmetics in Thailand (2018-2022)

(Euromonitor, 2023)

The data above shows that the cosmetics market in Thailand has been growing continuously despite challenges from the economic situation and global market competition. The significant growth in 2021 and 2022 reflects the recovery of the cosmetics industry after the COVID-19 pandemic, which has led consumers to pay more attention to personal care and beauty products (McKinsey et al. 2023). However, despite the continuous growth of this industry, it still faces three major challenges:

High reliance on imported raw materials and technologies: Thai cosmetic businesses rely on imported raw materials and technologies from abroad, which increases production costs and affects their competitiveness in the global market (OECD, 2023).

Intense competition from foreign brands: Multinational companies from South Korea, Japan, and Europe have invested heavily in innovation and digital marketing, creating high pressure on Thai brands (Statista, 2023).

The problem of imports exceeding exports: The Thai cosmetic industry has faced a continuous trade deficit due to the higher value of cosmetic imports compared to exports. Between 2018 and 2022, Thailand imported cosmetics worth 35,849 million baht, while exports were only 24,385 million baht (Department of Business Development, 2023). The main reason for this is the reliance on imported raw materials and technologies, which increases production costs and makes it harder for Thai businesses to compete in the global market, as shown in Figure 3 (Department of Business Development, 2023).

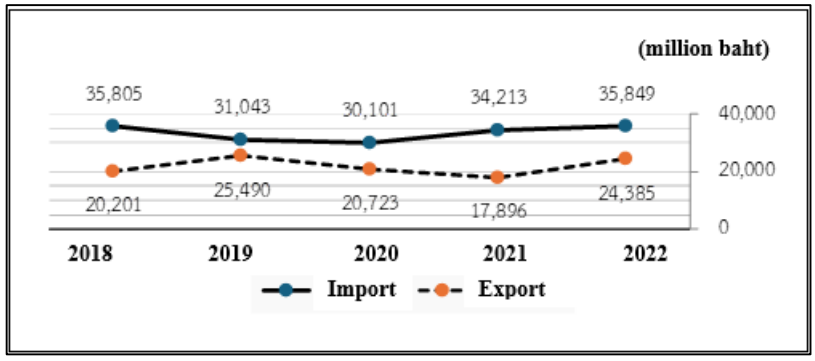

Figure 3. Comparison of the value of Thai cosmetic exports and imports 2018 – 2022 (Department of Business Development, 2023).

The data above reflects that the Thai cosmetic industry is facing a continuous trade deficit due to its reliance on imported technologies and raw materials, stemming from limitations in the development of domestic production technology. In addition, the lower export rate compared to imports indicates that Thai entrepreneurs face obstacles in expanding into foreign markets, including competition with international brands, product standards, and distribution networks. The industry's long-term competitiveness might be affected by these challenges. In order to develop the Thai cosmetics industry, which is not competitive on an international level, marketing innovation plays an important role, especially in the age of digital era where consumer behavior is changing rapidly. With the adoption of innovation and technology, businesses have a means of responding properly to market trends. Big Data and Artificial Intelligence (AI) are key technologies driving the business, as they can accurately analyze consumer behavior data, predict market trends, and develop real-time marketing strategies (Chaffey & Little, 2023). Furthermore, digital media such as online marketing, such as social media marketing, and search engine optimization (SEO) constitute an active strategy for highlighting and enhancing brand awareness in the market, which can be more effective in reaching target customers (Hanaysha, 2022). Another important factor that helps enhance product innovation and each manufacturer's competitiveness is the addition of products that follow market trends, such as products using natural ingredients, designing environmentally friendly products, or formulating products to meet specific market needs (Smith, 2022).

The purpose of this research is to study the approaches to using marketing innovation to develop a sustainable competitive advantage in the Thai cosmetic industry based on key factors aligned with the success of marketing strategies. It also aims to develop a Structural Equation Model (SEM) for practical guidance within the business. The results of this study will be useful to stakeholders from various sectors, such as entrepreneurs, who can adjust their marketing strategies to improve effectiveness and utilize digital technology to expand their market. This research provides marketers with information about trends in marketing innovation and the strategies that can be selected to align with consumer behavior (Juska, 2022). The findings can also be used by policymakers to promote the international competitiveness of the Thai cosmetic industry.

Research Objectives

This research will study the approach components that lead to sustainable competitive advantages through marketing innovation implementation within Thai cosmetic industry enterprises. The research will develop a structural equation model that demonstrates how Thai cosmetic industry businesses can use marketing innovation for sustainable competitive advantage.

Literature Review and Theoretical

Marketing Innovation

A business increases its market competitiveness by introducing new marketing principles or developing existing methods, resulting in increased performance. Business organizations should create marketing approaches that match current customer behaviors combined with modern technological trends. The marketing innovation concept encompasses multiple features, including product development, communication approaches, distribution systems, and price management (Kotler et al. 2021). According to Christensen et al. (2018), the tool of marketing innovation enables business survival in competitive markets by requiring organizations to change their marketing approaches due to industrial changes and shifts in customer preferences. Marketing innovation represents an essential element, according to Prifti et al. (2017), because it helps organizations create valuable distinctions to compete effectively in marketplaces.

Data Innovation

Data innovation consists of applying contemporary technologies and analytical techniques for collecting and processing data to establish business opportunities. Organizational strategic decisions now heavily depend on Big Data accomplishments. Big Data features Volume and Velocity as fundamental elements and includes Variety, Veracity, and Value in its structure (Kitchin, 2014). The use of artificial intelligence (AI) and machine learning to analyze consumer data can help businesses develop better-targeted marketing campaigns. McAfee et al. (2012) state that the use of Big Data increases the accuracy of market trend forecasts and allows businesses to effectively adjust their operational strategies.

Management Innovation

Administrative innovation is the process of changing the way an organization operates, manages resources, and sets strategies for maximum efficiency. The introduction of digital technology and enterprise management systems (ERP, CRM) to improve business administration enhances competitiveness. Henri (1916) emphasized the main functions of organizational administration (Planning, Organizing, Commanding, Coordinating, Controlling - POCCC), which remains a fundamental concept in the development of administrative innovation, especially in an era where business administration relies on information and digital technology. O'Leary (2000) identified management information systems (MIS) as an important factor supporting the management process within an organization.

It enables the efficient management of information for decision-making. The development approach for management innovation is also consistent with the research of Uttajarern et al. (2023), which emphasizes the importance of entrepreneurs' attitudes and self-confidence in enhancing business performance, as well as the research of Sawatenarakul et al. (2024), which stated that executive experience and effective management directly affect the ability to report sustainability and long-term business returns.

Product Innovation

Product innovation is the development and improvement of products to meet consumer needs and create value for the business. According to Tidd et al. (2018), the success of a product innovation depends on developing novel products with high-quality designs and effective communication about the product's value to customers. By integrating IoT technology and platform-based marketing, organizations can create products that automatically respond to consumer actions in real-time. According to Kuhn et al. (2010), product innovation is a crucial factor in maintaining business competitiveness in the long run. The guidelines presented by Uttajarern et al. (2023) provide a framework to reduce environmental impact in the industry, enabling the creation of sustainable cosmetic products while building brand value.

Media Innovation

Marketing communications through novel platforms and digital tools constitute media innovation since they help companies achieve awareness among their target audiences in the current digitized marketing industry structures. According to Sayyad (2020), digital platforms act as major catalysts that transform buyer behavior and influence purchasing decisions. Through AR and VR technologies, companies can generate distinctive user experiences that enhance customer engagement levels.

Research Methodology

1. Based on the study, research, concepts, theories, documents, and related research on the guidelines for using marketing innovation to create a sustainable competitive advantage for Thai cosmetic industry businesses, the guidelines can be synthesized into four aspects: Data Innovation, Administrative Innovation, Product Innovation, and Media Innovation, as shown in Figure 4.

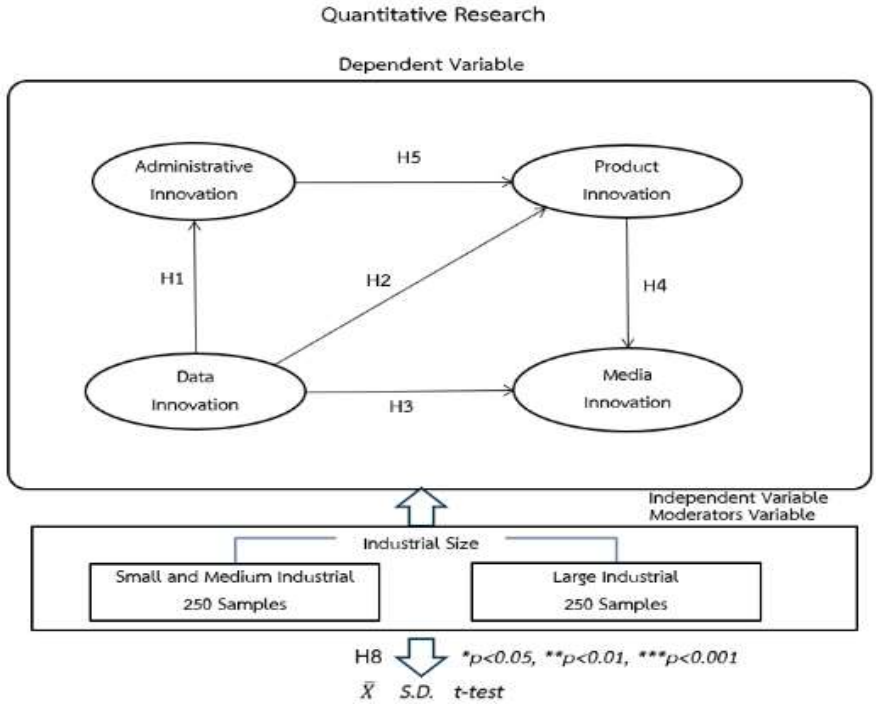

Figure 4. Research conceptual framework

Population and Sample

This research used both qualitative and quantitative research methods. The qualitative research was conducted through in-depth interviews with nine experts from the business sector, the government sector, and related academics, who were selected using purposive sampling. The quantitative research population consisted of executives at the professional or managerial level and above in the Thai cosmetic industry, covering cosmetic manufacturers registered with the Food and Drug Administration, Ministry of Public Health, between 2019 and 2023, totaling 2,329 factories (Ministry of Public Health, 2023). The sample size was determined according to the criteria of factor analysis and structural equation modeling (SEM), which recommends a sample of 500 to obtain accurate results (Thanin, 2024). The sample selection method was multi-stage sampling, dividing the business groups into two sizes: small and medium-sized enterprises (SMEs) and large businesses. Then, cluster sampling and systematic sampling were used to select the sample group. The sample size was set at 250 SMEs and 250 large businesses, totaling 500 samples.

Research Tools

Qualitative research was conducted using the in-depth interview technique. The research instrument used was a structured interview. The researcher defined the interview guidelines into four components: Data Innovation, Administrative Innovation, Product Innovation, and Media Innovation.

Quantitative research: The research instrument used was a questionnaire, designed to assess

guidelines for using marketing innovation to create a sustainable competitive advantage for Thai cosmetic industry businesses. The questionnaire employed a 5-level rating scale based on the Likert method (Thanin, 2024), with 100 items. Five experts reviewed and assessed the consistency of the questions (Item Objective Congruence: IOC) and conducted a pilot test with 30 individuals from a similar population. The results of the discriminant power analysis were conducted for each item. For the checklist questions, the standard deviation ranged from 0.41 to 0.86, and for the rating scale questions, the Corrected item-total correlation analysis ranged from 0.39 to 0.94. The reliability analysis of the questionnaire, using the Cronbach's alpha coefficient, yielded a value of 0.99.

Data Analysis

Qualitative research: Data analysis was conducted using content analysis and frequency statistics. Quantitative research: Statistical analysis employed descriptive statistics, inferential statistics, and multivariate statistics to develop SEM using SPSS and AMOS. To assess the fit of the structural equation model, the researcher used the model fit criteria of Arbuckle (2016), which consisted of four criteria as follows: 1) Chi-square probability value (CMIN-p) greater than 0.05, 2) Chi-square correlation value (CMIN/DF) less than 2.00, 3) Goodness-of-fit index (GFI) greater than 0.90, and 4) Root mean square error of approximation (RMSEA) less than 0.08.

Results

The results of the analysis of the level of importance of the components of the approach to using marketing innovation to create a sustainable competitive advantage for the Thai cosmetic industry as a whole show that media innovation is of high importance, with an average value of 4.33. The research demonstrated that developing an engaging website, along with a company address and accessible contacts, represents the key elements of internet search marketing, based on survey participants who gave a mean score of 4.47.

The statistical evaluation reveals that Administrative Innovation stands as the prime component for sustainable competitiveness in the Thai cosmetic industry, with a mean importance score of 4.31. The analysis demonstrated that customers highly recognize the usage of QR Codes to create seamless service delivery processes, with a mean score of 4.47.

The results of the analysis of the importance level of the components of the approach to using marketing innovation to create a sustainable competitive advantage for the Thai cosmetic industry as a whole show that product innovation is of high importance, with an average value of 4.30. When considering each item, it was found that improving the components of the original product to meet market demands was rated highly, with a mean score of ($\overline{X}$ = 4.43).

The results of the analysis of the importance level of the components of the guidelines for using marketing innovation to create a sustainable competitive advantage for the Thai cosmetic industry as a whole show that Data Innovation is of very high importance, with an average value of 4.27. When considering each item, it was found that controlling the data security system to reduce the risk of threats or potential impacts on the database was rated highly, with a mean score of ($\overline{X}$ = 4.43).

The results of the analysis of the importance level of the approach to using marketing innovation to create a sustainable competitive advantage for the Thai cosmetic industry, classified by the size of the business organization, are shown in Table 1.

Elements of the approach to implementing marketing innovation to create a sustainable competitive advantage for Thai cosmetic industry businesses	**t-Value**	**P-Value**
The overall importance of the components	2.88	0.00*
1. Data Innovation	2.67	0.01*
2. Administrative Innovation	3.03	0.00*
3. Product Innovation	2.34	0.02*
4. Media Innovation	2.67	0.00*

Table 1. Statistical values were used in comparing the differences in the importance levels of components of the approach to using marketing innovation to create a sustainable competitive advantage for Thai cosmetic industry businesses, classified by the size of the business organization as a whole and by each aspect

From Table 1, the analysis of the differences in the importance level of the components of the marketing innovation approach to creating a sustainable competitive advantage for Thai cosmetic industry businesses in each aspect, classified by the overall industry business size, showed statistically significant differences at the 0.05 level.

The statistical values that assessed the fit of the comparative structural equation model before model improvement showed that the root mean square error of approximation (RMSEA) was 0.077, meeting the fit assessment criteria with empirical data. However, the Chi-square probability level (CMIN-P) was 0.000, the Chi-square correlation (CMIN/DF) was 3.926, and the goodness-of-fit index (GFI) was 0.385, failing to meet the fit assessment criteria with empirical data.

Therefore, the researcher proceeded to improve the model by considering the Modification Indices values, as recommended by Arbuckle (2016), using the results obtained from the software program alongside theoretical principles. Inappropriate observational variables were removed one by one, and the new model was processed until it met all four statistical criteria. As a result, the structural equation model was considered complete and consistent with the empirical data.

After the model improvement, it was found that the Chi-square probability (CMIN-P) was 0.062, which is greater than 0.05; the Chi-square correlation (CMIN/DF) was 1.174, which is less than 2.00; the Goodness-of-Fit Index (GFI) was 0.963, which is greater than 0.90; and the Root Mean Square Error of Approximation (RMSEA) was 0.019, which is less than 0.08. Therefore, it can be concluded that all four statistics passed the evaluation criteria. As a result, the structural equation model for the approach to using marketing innovation to create a sustainable competitive advantage for the Thai cosmetic industry, after the improvement, is consistent with the empirical data.

The maximum value for the observed variable was obtained after the model improvement.		Standardized regression weight
Data Innovation		
DAT08	Using data cleaning innovations to detect and remove inaccurate data.	0.80

DAT10	Machine-to-machine (M2M) data is generated from devices that communicate with each other via wired or wireless networks.	0.78
DAT04	Using Big Data technology to store and collect data efficiently, with sufficient storage space.	0.76
DAT01	Supports the use of various types of data, such as social media, web data, sensor data, RFID, GPS, mobile usage, etc.	0.74
DAT11	Using technologies for data visualization and business intelligence (BI), such as Tableau, Pentaho, Excel, etc.	0.68
ด้านนวัตกรรมทางการบริหาร (Administrative Innovation)		
ADM11	Actions to promote and maintain the continuous exchange of knowledge and the development of personnel capabilities.	0.86
ADM23	Improving work process flexibility (Agile Management) to increase efficiency in responding to changes.	0.82
ADM09	Fostering personnel with vision and creativity to lead the organization toward a sustainable competitive advantage.	0.82
ADM03	Using cloud technology and an online platform management system to reduce redundancy in management and increase work agility.	0.78
ADM01	Emphasizing clear communication of a strategic plan to members in alignment with the organization's goals and mission.	0.67
Product Innovation		
PRD12	Policies and measures to develop environmentally friendly products.	0.83
PRD01	Using modern technology, both hardware and software, to support the design and development of new products.	0.81
PRD05	Focus on differentiating yourself from other competitors through aspects such as design, customer response, and product quality.	0.80
PRD06	Create innovations in cosmetic production based on customer feedback and needs.	0.79
PRD02	Encourage customers or consumers to participate more in product design.	0.77

Table 2 shows the maximum statistical values for the observed variables obtained from the structural equation modeling analysis after the model improvement.

Table 2. (continued)

The maximum value for the observed variable was obtained after model improvement.		Standardized regression weight
Media Innovation		
MED06	Development of social media usage to create an online community for users of the organization's cosmetic products.	0.79

MED02	Using virtual reality technologies, such as AI, to assist with marketing through various media.	0.79
MED03	Advertising and public relations through various digital media platforms such as YouTube, Facebook, Instagram, Twitter, Line, TikTok, and email etc.	0.78
MED10	Using influencer marketing to promote the organization's cosmetic products.	0.77
MED01	Designing diverse media content that attracts customers and meets the various needs of target customer groups.	0.75

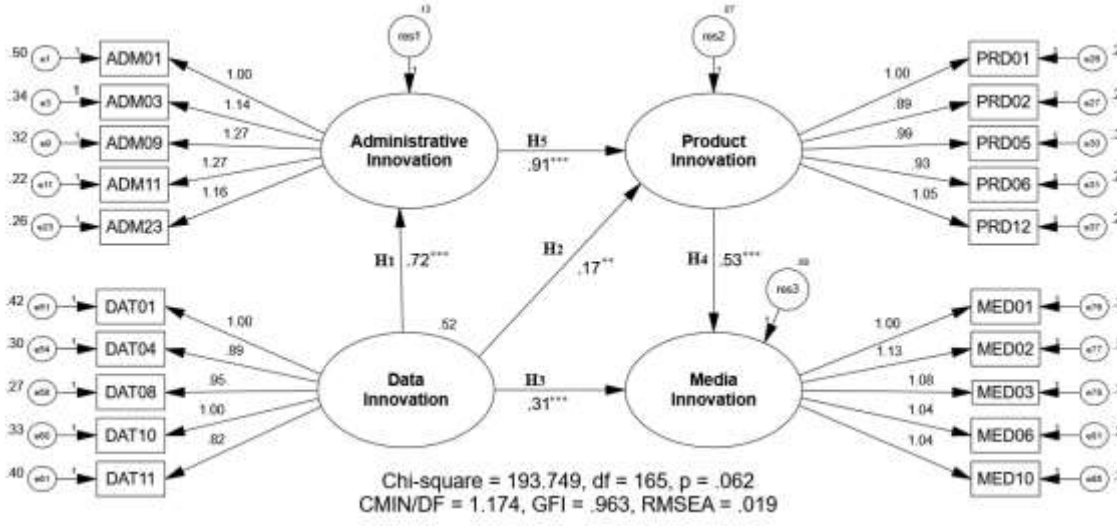

Figure 3. Structural Equation Model of the approach to using marketing innovation to create a sustainable competitive advantage for the Thai cosmetic industry after model improvement.

Latent Variable	Data Innovation	Administrative Innovation	Product Innovation	Media Innovation
Administrative Innovation	0.82	0.00	0.00	0.00
Product Innovation	0.82	0.79	0.00	0.00
Media Innovation	0.83	0.47	0.59	0.00

Table 4. Statistics of the overall influence, direct influence, and indirect influence analysis of the structural equation model for the approach to adopting marketing innovation to create a sustainable competitive advantage for Thai cosmetic industry businesses in the Standardized Estimate mode after model improvement.

Table 4. Results of the analysis of overall influence, direct influence, and indirect influence of the structural equation model for the approach to the adoption of marketing innovation to create

a sustainable competitive advantage for Thai cosmetic industry businesses in the Standardized Estimate mode after model improvement. Data innovation (Dana Innovation) has an overall influence on the media innovation component (Media Innovation) with a Standardized Regression Weight of 0.83 (0.35+0.10+0.38).

Discussion and Conclusion

The key findings from the research on the guidelines for using marketing innovation to create a sustainable competitive advantage for the Thai cosmetic industry are discussed below, with the researcher referencing related research documents to either support or contrast the findings.

Media Innovation received the highest score among research participants, with an average response of 4.33. Digital media plays a crucial role in developing Brand Awareness and Engagement strategies, as well as Brand Differentiation tools that cosmetic businesses use for digital market competition. Digital media allows brands to showcase their identity through engaging content, which enhances consumer engagement, as noted by Kotler et al. (2016). Research by Hudson et al. (2016) confirmed that social media interactions improve brand engagement and foster consumer-brand loyalty by strengthening relationships. Real-time behavioral analysis of Big Data enables brands to make adaptive communication decisions and quickly adjust to changing market trends (Christensen et al. 2015). In the modern business world, digital media is a vital tool that helps companies meet market demands in competitive environments, as highlighted by Trott (2012). By using creative digital media tools such as video content, interactive advertisements, and online channels, companies can establish stronger consumer connections, enhance brand images, and differentiate their brands effectively. This approach leads to a sustained competitive market position, as emphasized by Hudson et al. (2016).

According to research findings, the Thai cosmetic industry prioritizes building an aesthetically pleasing website with accessible organizational information as the primary factor for marketing innovation success. This statistical result demonstrates that websites serve as the most important communication method that contributes to building brand trust as a crucial digital tool. Research by Kotler et al. (2016) supports this finding, stating that brand awareness improves alongside website structure improvement. Customer trust and brand loyalty increase when online media remains accessible and visually appealing, according to Hudson et al. (2016). Studies conducted by Flavián et al. (2011) prove that attractive website aesthetics strengthen brand trust. Huang et al. (2013) identified that websites prioritizing User Experience and quick information retrieval produce beneficial customer experiences that strengthen purchasing behavior. A well-designed website supports Search Engine Marketing (SEM) strategies, allowing brands to connect with more potential customers in their pursuit of competitive market dominance. Companies operating in the cosmetic industry will realize sustained growth when they construct a user-centric contemporary digital platform that addresses market behaviors and digital promotional tactics (Kotler et al. 2016; Hudson et al. 2016).

The results of hypothesis testing established that data innovation as a stand-alone element drives the development of administrative innovation, making the standardized regression weight reach 0.82. Data proves its strategic nature because it boosts decision-making productivity while promoting organizational results. The management process becomes more efficient when proper data management occurs, while uncertainty decreases and innovation advances throughout other fields such as product innovation and media innovation, according to Nieves et al. (2021). The analysis of data through proper methods allows businesses to predict market directions and

modify their strategies according to present-day business environment changes. According to Khosravi et al. (2022), data innovation implementation leads to higher employee creativity while also creating more effective managerial practices. The strategic importance of well-managed data stands as a fundamental corporate pillar, according to Schilling et al. (2023), which allows organizations to sustain their competitive position. The management of quality data plays two essential roles in the digital era by enabling operational effectiveness and supporting business innovation, which leads to better competitiveness (Nieves et al. 2021; Khosravi et al. 2022; Schilling et al. 2023).

The Data Innovation component proved to be the most influential factor for Media Innovation through hypothesis testing results with a statistical significance level of 0.001. Data innovation stands as the essential foundation behind all media development work, according to the maximum influence line weight of 0.83 (Standardized Regression Weight). Organizations use systematic data management systems together with thorough analysis to establish essential planning and develop successful strategies for media development and make educated marketing choices. High-quality data equips organizations to produce content and customize their communications so they can better address market requirements (Nieves et al. 2021), as described in the research by Khosravi et al. (2022). Effectively managed data was found to stimulate creativity and foster media innovation, with an influence weight of 0.81. Schilling et al. (2023) noted that good data management enhances strategic media design and development (Regression Weight = 0.79), while Ozdemir et al. (2022) emphasized that well-managed data improves the ability to develop digital media innovation, with an influence weight of 0.77. This highlights the role of data in driving media strategies and creating competitive advantages. Therefore, systematic and accurate data management not only supports the development of effective media innovation but also enables organizations to maintain sustainable competitiveness in the digital age (Nieves et al. 2021; Khosravi et al. 2022; Schilling et al. 2023; Ozdemir et al.).

The results of hypothesis testing showed that the approaches to using marketing innovation to create sustainable competitive advantages for Thai cosmetic industry businesses exhibited statistically significant differences at the 0.05 level when considering the overall picture and classifying by business size. The components of Data Innovation, Administrative Innovation, Product Innovation, and Media Innovation all play an important role in the organization's competitiveness. Medium and small businesses place the greatest importance on Media Innovation, focusing on Social Media Marketing, Influencer Marketing, and Omni-channel Marketing to reach customers and encourage quick purchasing decisions (Rubio-Andrés et al. 2024; Igbokwe, 2024). Large businesses focus on advanced technologies, such as Cloud Technology and Big Data Analytics, to enhance management efficiency and organizational agility in the long run (Gernsheimer et al. 2024). In contrast, SMEs possess the ability to adapt quickly and adopt innovations faster than large organizations, though they remain constrained by budget and resource limitations (Jankuloska et al. 2022). However, using coopetition strategies, business collaborations with large organizations can increase marketing potential and expand distribution channels (Gernsheimer et al. 2024). This is consistent with the research of Jirapuch et al. (2024), which found that SMEs emphasize flexible management and workforce adaptation, thereby enhancing competitiveness and supporting sustainable growth. Therefore, cosmetic SMEs in Thailand prioritize digital strategies and accessible technologies. Despite budget constraints, their ability to adapt quickly allows them to compete effectively in the ever-changing market (Rubio-Andrés et al. 2024; Igbokwe, 2024; Jankuloska et al. 2022;

Gernsheimer et al. 2024).

Suggestions from Research Results

1. Policy-level: Research by the government sector should be promoted as follows:

The Department of Industrial Promotion (DIP) should support four dimensions of innovation: Data innovation, by establishing a Deep Data Analysis project to help entrepreneurs analyze the market; Management innovation, by promoting the use of ERP and CRM systems to increase organizational efficiency; Product innovation, by supporting R&D and the development of environmentally friendly products; and Media innovation, by promoting social media and digital marketing to create brand awareness.

The National Innovation Agency (NIA) should develop Big Data systems to help analyze consumer behavior and support research funding for the development of sustainable products.

The Digital Economy Promotion Agency (DEPA) should promote the use of advanced data analytics in marketing to support SEO, SEM, and social media efforts to expand the market.

The Office of Small and Medium Enterprises Promotion (OSMEP) should assist SMEs by supporting data management and CRM, as well as promoting lean management to reduce costs.

The Thai Cosmetic Manufacturers Association should collaborate with research institutes to establish an R&D center for new products, supporting the development of products made from natural raw materials.

2. Operational-level: Research by industrial business operators should be promoted as follows:

Media innovation: Develop user-friendly websites, utilize SEO, video, and social media to build brands and reach customers. Analyze competitors' strategies to adapt accordingly.

In terms of management innovation, QR Codes are used to facilitate processes, develop leadership skills among personnel, and create role models that help motivate teams to grow.

Product innovation: Improve and develop products to meet market demands, such as organic products and AI-driven cosmetics, and collaborate with designers to increase product value.

Data innovation: Use Big Data and AI to analyze market trends, ensure data security, and precisely adjust business strategies.

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