



Digital Marketing Capability and University Selection Decision among New Students at Private Universities: The Mediating Role of Perceived Competitive Advantage

Eva Nirmala Sari Chaniago*^{ID}, Endang Sulistya Rini^{ID}, Beby Karina Fawzee Sembiring^{ID}
Universitas Sumatera Utara, Indonesia

Received: July 3, 2026

Revised : July 19, 2026

Accepted : September 12, 2026

Online : October 12, 2026

Abstract

Private universities in Medan City, Indonesia, have experienced a notable decline in the number of institutions, approximately 15.7% between 2020 and 2025, amid rapid advances in science and technology that have transformed how prospective students search for, evaluate, and select higher education institutions through digital platforms. In this increasingly competitive environment, Digital Marketing Capability has emerged as an important strategic asset for enhancing institutional visibility, engaging prospective students, and strengthening competitive advantage. However, empirical evidence explaining how Digital Marketing Capability is associated with students' university selection decisions through Perceived Competitive Advantage remains limited, particularly in the context of private higher education. This study examines the association between Digital Marketing Capability and University Selection Decision, with Perceived Competitive Advantage serving as a mediating variable. An explanatory quantitative approach was employed using cross-sectional survey data collected from 363 new students enrolled in private universities in Medan City, Indonesia. The data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM). The results indicate that Digital Marketing Capability is positively and significantly associated with both Perceived Competitive Advantage and University Selection Decision. Furthermore, Perceived Competitive Advantage is positively and significantly associated with University Selection Decision and partially mediates the relationship between Digital Marketing Capability and University Selection Decision. These findings suggest that digital marketing should be viewed not merely as a promotional tool but as a strategic organizational capability associated with stronger perceived competitive advantage and more favorable university selection decisions. This study contributes to the higher education marketing literature by highlighting the mediating role of Perceived Competitive Advantage in explaining the relationship between institutional Digital Marketing Capability and students' University Selection Decision. Practically, the findings provide insights for private universities seeking to strengthen their digital capabilities and competitive positioning in an increasingly competitive higher education market.

Keywords: *Digital Marketing Capability, Perceived Competitive Advantage, University Selection Decision, Partial Least Squares Structural Equation Modeling (PLS-SEM), Private Higher Education, Higher Education Marketing.*

INTRODUCTION

Higher education plays a critical role in human capital development, fostering innovation, and strengthening national competitiveness in a knowledge-based economy (Al Dulaimi et al., 2022). As higher education systems become increasingly market-oriented, universities no longer compete solely on the basis of academic excellence but also on their ability to attract and retain prospective students in an increasingly competitive education market (Hemsley-Brown & Oplatka, 2006). This transformation has been further accelerated by demographic changes, globalization, and rapid technological development, which have fundamentally reshaped how higher education institutions communicate with prospective students, convey institutional value, and shape perceptions of their relative advantages compared with competing institutions (Hung & Yen, 2022).

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Corresponding author's email: evac307@gmail.com

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Accordingly, universities require strategic organizational capabilities that enable them not only to provide quality education but also to identify changing market needs, create distinctive value, and communicate that value effectively to prospective students (Yang et al., 2023; Zhongxuan et al., 2023).

Competitive dynamics in private higher education have become increasingly pronounced in Indonesia. Private higher education institutions (PHEIs) play an important role in expanding access to higher education beyond the capacity of public universities (PDDikti, 2025), while simultaneously facing growing challenges arising from intensified inter-institutional competition and students' continued preference for public universities due to their stronger reputation and relatively more affordable tuition fees (Putri, 2025). The number of active private higher education institutions in Indonesia has gradually declined in recent years (PDDikti, 2025). A similar pattern can be observed in North Sumatra, where approximately 195 private higher education institutions operate under the jurisdiction of LLDIKTI Region I (LLDIKTI Wilayah I, 2024). More specifically, in Medan, the number of private higher education institutions declined by approximately 15.7% between 2020 and 2025 (BPS, 2026).

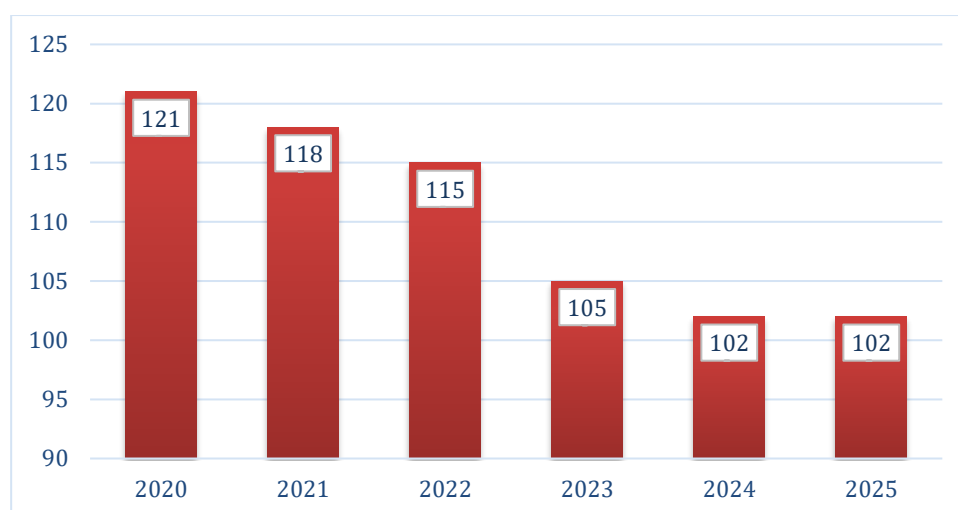


Figure 1. Trend in the Number of Private Higher Education Institutions in Medan, 2020–2025

The decline in the number of PHEIs appears to be associated with several institutional indicators, one of which is the relatively low number of student enrollments (Pusdatin, 2025). This condition highlights the importance of PHEIs' ability to attract prospective students and shape their university selection decisions for institutional sustainability (Yadav et al., 2022). Amid increasingly intense competition, PHEIs are required not only to attract prospective students' attention but also to communicate the value that differentiates them from alternative higher education institutions. The ability to develop and communicate such distinctive value therefore represents a strategic capability that may shape prospective students' perceptions and their decisions regarding higher education institutions.

The University Selection Decision (USD) represents a complex decision-making process in which prospective students evaluate various institutional attributes before making a final choice regarding enrollment. This process involves information search, comparison of alternatives, and consideration of perceived benefits and costs (Kotler & Keller, 2016). Previous literature indicates that university selection is generally multifactorial, with reputation, academic quality, cost, location, facilities, and marketing communication consistently considered by prospective students (Nuseir & El Refae, 2022; Qasim et al., 2021). The increasing use of digital platforms has further transformed how students obtain and evaluate such information. Consequently, universities'

ability to manage digital marketing resources has become increasingly relevant to how students evaluate competing higher education institutions (Munir & Danish, 2026).

Digital Marketing Capability (DMC) can be conceptualized as a strategic organizational capability through the lens of Dynamic Capability Theory. Teece (2007) explains that dynamic capabilities reflect an organization's ability to sense changes in its environment, seize opportunities, and reconfigure resources to remain aligned with environmental dynamics. In the context of digital marketing in higher education, these capabilities are reflected in institutions' ability to manage multiple digital channels, create relevant content, utilize data and customer insights, engage in interactive communication, integrate multiple platforms, and adapt to changing prospective students' needs (Comai, 2025; Kharisma & Agzumi, 2026). However, the relevance of DMC to university selection is not determined solely by a PHEI's internal ability to manage technology and digital marketing activities. It also depends on how these capabilities are perceived and experienced by prospective students as recipients of institutional information. Therefore, DMC in this study is conceptualized from the students' perspective, based on their perceptions of the extent to which PHEIs are able to manage and utilize digital channels in ways that are relevant, interactive, informative, and responsive throughout the process of searching for and evaluating higher education institutions. This perspective is important because organizational capabilities acquire strategic value when they are translated into positive experiences and perceptions among prospective students (Mateus et al., 2024).

Perceived Competitive Advantage (PCA) provides a theoretical mechanism for explaining how students' perceptions of digital marketing capability may be translated into evaluations of an institution's relative advantage. Under conditions of information asymmetry, prospective students may use information available through digital channels as signals of institutional quality and capabilities that are otherwise difficult to observe directly (Nuseir & El Refae, 2022). When digital signals are perceived as relevant, credible, and responsive, students may form stronger perceptions that a PHEI possesses advantages relative to alternative institutions. Thus, PCA represents students' interpretation of institutional digital signals and, theoretically, functions as a mechanism linking DMC with the USD.

From this perspective, DMC may be associated with the USD through two complementary pathways. First, the direct association may reflect the ability of DMC to facilitate information search and reduce the uncertainty perceived by students during the decision-making process. Second, the indirect association may be understood through students' perceptions of the value and relative advantages of a university compared with competing institutions. This perspective is consistent with previous research indicating that university marketing strategies are associated with students' evaluations through perceptual mechanisms, particularly perceived value, which is also related to assessments of institutional reputation and image (Amado et al., 2023; Balakrishnan, 2025; Mateus et al., 2024). Accordingly, this study positions PCA as an important psychological mechanism that may help explain the association between DMC and the USD, alongside the direct association between DMC and the decision itself.

Several previous studies have demonstrated associations between digital marketing activities and prospective students' responses. Eum (2025) found that digital marketing can enhance awareness and the image of higher education institutions, while Wijaya et al. (2023) showed that digital marketing strategies are associated with students' intentions and enrollment decisions at private higher education institutions in Indonesia. Al-Abdallah & Ababakr (2025) further identified a role for marketing communication in the association between marketing activities and higher education institution selection. Pratikto & Setyaningsih (2026) also found that social media marketing can be associated with enrollment decisions through perceived value. Specifically in Medan, Amelia et al. (2024) identified academic quality, reputation, and other

institutional attributes as major factors associated with students' decisions to select private higher education institutions. [Hajatina \(2021\)](#) examined social networks, together with tuition fees and service quality, as predictors of students' decisions to enroll at a private higher education institution in Medan. Meanwhile, [Syam et al. \(2019\)](#) investigated the association between a broader service marketing mix including product, price, promotion, place, people, process, and physical evidence and students' faculty choices at a private higher education institution in Medan.

Although these studies provide evidence regarding the associations of marketing activities and institutional attributes with students' decisions, they do not specifically conceptualize digital marketing as an organizational capability or explain how such capability may be translated into USD through students' perceptions of the relative advantages of PHEIs. Consequently, an important research opportunity remains to explain the psychological mechanism linking perceived digital marketing capability with university selection decisions, particularly through PCA.

To address this research gap, this study develops an integrated research model linking DMC, PCA, and the USD in the context of private higher education institutions in Medan, Indonesia. Rather than viewing digital marketing merely as a promotional function, this study conceptualizes DMC as a strategic organizational capability grounded in Dynamic Capability Theory and examined from the perspective of students' perceptions of PHEIs' digital marketing activities. Accordingly, DMC is not treated as an objective measure of an institution's internal capabilities but as students' perceptions of the extent to which PHEIs are able to manage and utilize digital channels to provide relevant information, foster interaction, respond to prospective students' needs, and communicate institutional value and differentiation. PCA is positioned as a mediating mechanism that conceptually explains how students' perceptions of DMC are associated with their evaluations of a PHEI's relative advantages, while the direct association between DMC and the USD is also examined. This integrated perspective provides a framework for understanding how perceived DMC may be associated with PHEIs' ability to communicate distinctive institutional value and establish a perceived competitive position in an increasingly digitalized higher education market.

Based on the theoretical arguments, empirical evidence, and research gap discussed above, this study aims to develop and empirically test an integrated model examining the associations among DMC, PCA, and the USD in private higher education institutions in Medan, Indonesia. Specifically, this study has four objectives: (1) to examine the association between DMC and PCA; (2) to examine the association between DMC and the USD; (3) to examine the association between PCA and the USD; and (4) to examine the mediating role of PCA in the association between DMC and the USD. By addressing these objectives, this study is expected to contribute to the higher education marketing literature by extending the application of Dynamic Capability Theory to digital marketing in higher education from the students' perspective and by examining PCA as a mediating mechanism that helps explain the association between students' perceived DMC and their university selection decisions. Practically, the findings may provide insights for PHEI managers into the aspects of DMC perceived by students as informative, interactive, responsive, and effective in communicating institutional differentiation. These insights may provide a basis for strengthening PCA and supporting student recruitment efforts.

LITERATURE REVIEW

Dynamic Capability Theory

Dynamic Capability Theory explains how organizations sustain competitiveness in rapidly changing environments. [Teece et al. \(1997\)](#) argue that competitiveness depends not only on possessing valuable resources but also on the capability to continuously integrate, build, and reconfigure those resources as environmental conditions change. [Teece \(2007\)](#) further specified this capability through three core processes: sensing, which involves identifying emerging

opportunities and changing stakeholder needs; seizing, which involves mobilizing resources to capture identified opportunities; and transforming, which involves continuously renewing organizational resources and routines to sustain competitiveness. Recent research has extended this framework to digital transformation and digital marketing, emphasizing that competitiveness increasingly depends on integrating digital technologies into strategic decision making rather than merely adopting individual digital tools (Warner & Wäger, 2019). Within this perspective, DMC can be understood as an adaptive organizational capability that enables institutions to respond to changing market expectations and create value through digital engagement.

This study operationalizes DMC in the higher education context through three dimensions: information quality, accessibility, and interactivity. These dimensions represent an institution's ability to provide relevant and useful information, make institutional information available through appropriate digital channels, and engage responsively with prospective students. Multidimensional website quality frameworks have been examined in higher education research (Gharibe Niazi et al., 2020), while related dimensions have also been considered in digital marketing and consumer decision making research (Balal et al., 2024). These dimensions can be conceptually related to the processes of sensing, seizing, and transforming, respectively, because information quality supports the identification and response to prospective students' information needs, accessibility facilitates the deployment of digital channels and institutional resources, and interactivity supports the continuous refinement of digital engagement practices. However, these dimensions are treated as observable manifestations of DMC rather than as direct or exhaustive measures of the underlying organizational processes described by Teece (2007). Accordingly, the associations involving DMC in this study are interpreted as being consistent with, rather than as direct confirmation of, the underlying dynamic capability processes.

This study therefore adopts Dynamic Capability Theory as its overarching theoretical foundation for explaining Digital Marketing Capability in the higher education context. The theory provides a basis for understanding how DMC, reflected in information quality, accessibility, and interactivity, may be associated with Perceived Competitive Advantage in an increasingly digital and competitive higher education market.

Perceived Competitive Advantage: Definition and Conceptual Boundaries

PCA is defined in this study as a prospective student's comparative judgment that a university offers superior or distinctive value on attributes relevant to enrollment decisions, relative to competing institutions. Its defining characteristic is therefore its explicitly comparative nature: unlike a general evaluation of a university, PCA reflects how students perceive the institution in relation to available alternatives (Del-Castillo-Feito et al., 2020).

This comparative characteristic distinguishes PCA from three related constructs. Institutional image refers to overall beliefs about a university without necessarily involving comparison with competitors (Kazoleas et al., 2001; Luque-Martínez et al., 2026). Perceived value concerns the perceived relationship between benefits and costs rather than relative superiority (Blut et al., 2024; Zeithaml, 1988). Reputation represents a cumulative, enduring evaluation built through accumulated stakeholder experience (Fernández-Gubieda & Gutiérrez-García, 2025; Fombrun, 1996). A university may therefore have a favorable image, high perceived value, or strong reputation without students necessarily perceiving it as competitively superior to alternatives.

Digital Marketing Capability and Perceived Competitive Advantage

Building on Dynamic Capability Theory (Teece, 2007), universities with stronger DMC, manifested through high information quality, accessibility, and interactivity, are theoretically expected to communicate institutional value more effectively, thereby enhancing prospective

students' comparative perceptions relative to competing institutions. Within higher education, DMC reflects an institution's capacity to integrate digital technologies, market intelligence, and marketing resources to adapt to evolving student preferences ([Apasrawirote et al., 2022](#)).

Empirical evidence broadly supports this theoretical expectation. [Hoang et al. \(2025\)](#) found that DMC contributes to sustainable competitive advantage by enabling organizations to leverage digital resources within marketing activities. Similarly, [Homburg & Wielgos \(2022\)](#) found that DMC is associated with organizational performance through capability based mechanisms rather than through technology adoption alone. Within the higher education context, [Al-Abdallah and Ababakr \(2025\)](#) found that digital marketing efforts are significantly associated with students' evaluations of higher education institutions.

However, existing literature exhibits three critical limitations that this study explicitly addresses. First, prior research has largely focused on commercial contexts where competitive advantage is evaluated through market share or financial performance metrics that do not directly capture the comparative evaluative judgments of prospective students. Whether these capability advantage associations hold within the higher education enrollment context remains an empirical question that this study seeks to examine rather than a settled fact. Second, existing studies frequently operationalize digital marketing as isolated promotional activities or technology adoption rather than as an integrated organizational capability grounded in Dynamic Capability Theory. Third, previous research has relied predominantly on non-comparative outcomes such as institutional image or perceived value rather than operationalizing Perceived Competitive Advantage as a direct comparative assessment made by students. This study addresses this specific conceptual and empirical gap.

H1: Digital Marketing Capability is positively associated with Perceived Competitive Advantage.

Perceived Competitive Advantage and University Selection Decision

From the perspective of consumer decision making theory, university selection involves a comparative evaluation of available alternatives before an enrollment decision is made ([Homburg & Wielgos, 2022](#); [Kotler & Keller, 2016](#)). Given the comparative nature of PCA, students who perceive a university as superior to competing institutions are more likely to favor that institution in their selection decision. Thus, PCA represents a relevant perceptual mechanism through which students evaluate a university relative to competing alternatives.

Empirical evidence generally supports this relationship. [Kwartawaty et al. \(2025\)](#) identified significant associations between students' university selection decisions and several factors that reflect institutional advantages, including perceived value, digital marketing innovation, institution image, and competitive pricing. Similarly, [Chandrasekhar et al. \(2025\)](#) reported a positive and significant association between perceived service quality and the selection of academic programs. These findings suggest that favorable institutional perceptions can contribute to students' university selection decisions, although they do not necessarily constitute the sole determinants of choice.

Building on this theoretical and empirical evidence, this study proposes that students who perceive a university as having greater competitive advantages relative to competing institutions are more likely to select it. Tuition fees and facilities are not included in the present model because they represent economic and infrastructural attributes that are conceptually distinct from the perceptual mechanism examined here. Moreover, incorporating every previously identified determinant could dilute the specific capability to perception pathway that this study aims to examine. Accordingly, the model is intentionally partial and does not claim to capture all determinants of University Selection Decision. Within this defined scope, PCA is expected to have a positive association with University Selection Decision.

H2: Perceived Competitive Advantage is positively associated with University Selection Decision.

Digital Marketing Capability and University Selection Decision

Beyond its indirect association through PCA, DMC may also be directly associated with USD. Universities with stronger DMC are better positioned to provide accurate, timely, accessible, and interactive information through digital platforms, which may reduce decision-related uncertainty and support students in reaching a university selection. This expectation finds some empirical support: [Al-Abdallah and Ababakr \(2025\)](#) found that digital marketing strategies are associated with enrollment intentions, while [Li et al. \(2025\)](#) reported that social media engagement is positively associated with university evaluation and selection by facilitating access to institutional information.

Even so, the direct relationship between DMC and USD remains less established than the proposed PCA mediated pathway. Most of the studies cited above examined enrollment intentions, digital engagement, or institutional evaluations rather than finalized enrollment decisions, and none tested whether a direct association persists once a perceptual mediator such as PCA is taken into account. It therefore remains an open question whether DMC is associated with university selection independently of PCA, or whether this association is primarily carried through students' perceptions of institutional superiority a distinction the existing literature has yet to resolve, particularly given that prior studies have generally relied on models that do not account for such mediating mechanisms. This study retains H3 as a proposition to be tested rather than assumed, examining the direct DMC–USD relationship alongside the indirect pathway through PCA so that the relative contribution of digital marketing capability and comparative perception to university selection can be empirically assessed.

H3: Digital Marketing Capability is positively associated with University Selection Decision.

Mediating Role of Perceived Competitive Advantage

Dynamic Capability Theory suggests that organizational capabilities create value by enabling organizations to adapt resources and build market positions that generate favorable outcomes ([Teece et al., 1997](#)). Applied here, DMC is theorized to strengthen PCA, which in turn represents a proximate comparative judgment that informs the evaluation of alternatives in university selection ([Homburg & Wielgos, 2022](#); [Kotler & Keller, 2016](#)).

Indirect empirical support for a mediated pathway comes from adjacent literatures employing related, though conceptually distinct, mediators. [Homburg and Wielgos \(2022\)](#) found that DMC is associated with organizational performance substantially through intervening organizational mechanisms rather than through a purely direct association. [Balakrishnan \(2025\)](#) reported that university branding activities are associated with stakeholder responses through perceived value, while [Li et al. \(2025\)](#) found that digital brand communication is associated with shifts in stakeholder perceptions that precede behavioral outcomes. These studies examine mediators such as perceived value, brand image, and brand personality, which differ conceptually from PCA because they do not explicitly capture comparative evaluations relative to competing institutions. They therefore provide evidence for a broader capability to perception to outcome mechanism rather than direct evidence of PCA's mediating role.

This distinction identifies a specific research gap. Whether the comparative, competitor referenced perceptual mechanism captured by PCA mediates the association between DMC and USD remains empirically untested, particularly in the context of private higher education. Accordingly, this study proposes that PCA mediates the relationship between DMC and USD.

H4: Perceived Competitive Advantage mediates the association between Digital Marketing Capability and University Selection Decision.

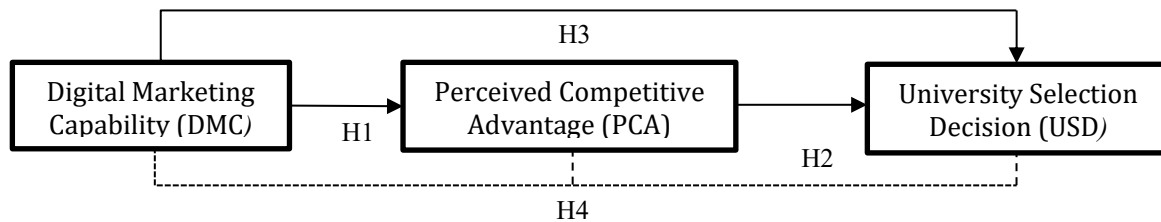


Figure 2. Conceptual Framework

RESEARCH METHOD

Research Design

This study employed a quantitative explanatory research design to examine the hypothesized relationships among Digital Marketing Capability, Perceived Competitive Advantage, and University Selection Decision. The study adopted a cross-sectional survey approach because data were collected from respondents at a single point in time; consequently, the design can establish statistical association and support tests of hypothesized relationships but cannot by itself establish causal direction. An explanatory design was considered appropriate because the objective was to test theoretically derived hypotheses rather than merely describe respondent characteristics (Sekaran & Bougie, 2016).

The conceptual model proposes that Digital Marketing Capability directly influence University Selection Decision while also affecting the decision indirectly through Perceived Competitive Advantage as a mediating variable. Structural Equation Modeling based on Partial Least Squares (PLS-SEM) was employed to simultaneously estimate both direct and indirect relationships among the latent constructs (Hair et al., 2019).

Population and Sampling

The research was conducted in Medan, North Sumatra, Indonesia, involving private higher education institutions (PHEIs) operating under the supervision of the Higher Education Service Institution (LLDIKTI) Region I. The target population comprised first-year undergraduate students enrolled in the 2025/2026 academic year who had entered their second semester at the time of data collection. Second-semester students were selected because they had already completed the university selection process and were therefore considered capable of evaluating the factors influencing their enrollment decisions. Based on official data obtained from LLDIKTI Region I, 84 accredited private higher education institutions in Medan had a combined population of 36,920 first-year students, which constituted the population of this study.

The minimum sample size was determined using the Isaac and Michael (1995) sample size table for a population of approximately 36,920 at a 5% significance level, which indicated a minimum required sample of 348 respondents. Proportional quotas were then calculated for each of the 84 institutions based on their share of the total student population, and a minimum quota of one respondent per institution was imposed for institutions whose proportional allocation would otherwise round to zero; applying this floor across the smallest institutions raised the realized sample from the 348-respondent minimum to 363 respondents, still representing all 84 private higher education institutions. Within each institutional quota, respondents were recruited using convenience sampling, whereby students who met the research criteria and voluntarily completed the online questionnaire were included in the study; because participation depended on self-selection into the online survey rather than random selection, the sample should be understood as a proportionally quota-managed convenience sample rather than a strictly representative probability sample.

Data Collection

Primary data were collected using an online questionnaire administered through Google Forms between May and July 2026. Participation was voluntary, and respondents confirmed that they were enrolled as second-semester students at accredited private higher education institutions in Medan. Secondary data were obtained from official publications of LLDIKTI Region I and relevant academic literature to support the theoretical development and interpretation of findings.

Measurement of Variables

The research model comprised three reflective, first-order latent constructs, with no higher-order constructs specified. All constructs were measured using previously validated scales adapted to the context of private higher education institutions. Digital Marketing Capability, Perceived Competitive Advantage, and University Selection Decision were conceptualized at the individual level and measured based on respondents' perceptions. Although the sample was drawn from 84 institutions, the analysis did not aggregate responses to the institutional level. Accordingly, the individual student served as the unit of analysis and inference, and intraclass correlation (ICC) statistics were not reported.

Digital Marketing Capability was conceptualized through three dimensions: information quality, accessibility, and interactivity, grounded in the digital marketing capability framework of [Chaffey and Ellis-Chadwick \(2019\)](#). Measurement items were developed based on these three dimensions and adapted to reflect the higher education enrollment context. These dimensions capture an institution's ability to provide accurate and relevant digital information, facilitate convenient and timely access to digital platforms, and support responsive two-way communication with prospective students.

Perceived Competitive Advantage was adapted from [Nasereddin \(2023\)](#), who conceptualized competitive advantage through five dimensions: cost, quality, flexibility, creativity and innovation, and continuity. This study retained three dimensions that most closely align with the comparative conceptualization of PCA established earlier: cost advantage, quality advantage, and differentiation advantage. Cost advantage and quality advantage were adapted from [Nasereddin \(2023\)](#) corresponding dimensions and capture students' comparative perceptions of tuition value and educational quality relative to competing alternatives. Differentiation advantage was derived from [Nasereddin \(2023\)](#) creativity and innovation dimension and further informed by [Porter \(1985\)](#) conceptualization of differentiation as a source of competitive advantage. It captures the extent to which students perceive a university as possessing distinctive characteristics that distinguish it from competing institutions. The flexibility and continuity dimensions were excluded because they primarily reflect internal organizational adaptability and long-term sustainability, which are less directly observable to prospective students during the university selection process.

University Selection Decision was adapted from [Kotler and Keller \(2016\)](#) and [Moogan and Baron \(2003\)](#). The construct comprises three dimensions: information search, evaluation of alternatives, and final selection decision. Together, these dimensions represent the stages through which prospective students gather information, compare available universities, and arrive at a selection decision.

The questionnaire comprised 18 measurement items. Each construct was measured reflectively through three dimensions, with two indicators assigned to each dimension. All items were assessed using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The complete set of measurement items is presented in Table 1.

Table 1. Measurement Items

Construct	Dimension	Code	Item
Digital Marketing Capability (DMC)	Information Quality	DMC1	My university provides comprehensive information through digital media.
		DMC2	The information provided by my university through digital media is easy to understand.
	Accessibility	DMC3	Information about my university is easily accessible through various digital channels.
		DMC4	Information about my university is easy to find through search engines on digital media.
	Interactivity	DMC5	My university provides communication channels that are easy to reach.
		DMC6	My university responds to inquiries promptly through digital media.
Perceived Competitive Advantage (PCA)	Cost Advantage	PCA1	The tuition fees offered by my university are more attractive than those of other universities I considered.
		PCA2	The benefits offered by my university are commensurate with the costs incurred.
	Quality Advantage	PCA3	The quality of education at my university is better than the alternatives I considered.
		PCA4	The prospects offered by my university are more convincing than other alternatives.
	Differentiation Advantage	PCA5	My university has advantages that distinguish it from other universities I considered.
		PCA6	My university offers characteristics that are difficult to find at other universities.
University Selection Decision (USD)	Information Search	USD1	I gathered information from various sources before choosing this university.
		USD2	I took the time to search for information about several universities.
	Evaluation of Alternatives	USD3	I compared several private universities in Medan City before making my decision.
		USD4	I considered various aspects before deciding on a university.
	Final Selection Decision	USD5	My decision to choose this university was the result of careful consideration.
		USD6	I am confident in my decision to choose this university to continue my studies.

Note: Items were originally administered in Indonesian and translated into English for reporting purposes

Data Analysis

Data analysis was performed using SmartPLS 4 following the two-stage PLS-SEM procedure recommended by [Hair et al. \(2022\)](#).

The first stage evaluated the measurement model (outer model) by examining indicator reliability, convergent validity, discriminant validity, and internal consistency reliability ([Prakoso & Tanjung, 2025](#); [Simangunsong & Tanjung, 2026](#)). Indicator reliability was assessed through outer loading values, with values above 0.70 considered acceptable ([Ruhmi & Tanjung, 2023](#)). Convergent validity was evaluated using the Average Variance Extracted (AVE), requiring values above 0.50. Internal consistency reliability was assessed using Cronbach's Alpha and Composite Reliability, both expected to exceed 0.70 ([Nurhayati et al., 2026](#)). Discriminant validity was evaluated using the Fornell–Larcker criterion, cross-loading analysis, and the Heterotrait–Monotrait Ratio (HTMT), with HTMT values below 0.90 indicating adequate discriminant validity.

The second stage evaluated the structural model (inner model). The explanatory power of the model was assessed using the coefficient of determination (R^2), while predictive relevance was evaluated through Stone–Geisser's Q^2 ([Geisser, 1974](#); [Stone, 1974](#)). Effect sizes were examined using f^2 values to determine the contribution of each exogenous construct to endogenous constructs.

Hypothesis testing employed the bootstrapping procedure with 5,000 resamples. The statistical significance of each structural path was determined using standardized path coefficients, t-statistics, and p-values. Hypotheses were accepted when the t-statistic exceeded 1.96 and the p-value was below 0.05, indicating significance at the 95% confidence level. The mediating role of Perceived Competitive Advantage was assessed following the bootstrapped indirect-effect approach for PLS-SEM mediation analysis ([Nitzl et al., 2016](#)), in which a significant indirect effect (specific indirect effect of DMC → PCA → USD) combined with a significant remaining direct effect (DMC → USD) is classified as partial mediation.

FINDINGS AND DISCUSSION

Overview of Respondents

Table 2. Profile of Sampled Institutions

Institutional Forms	f	%
University	32	38.10
Institute	4	4.76
College	27	32.14
Academy	13	15.48
Polytechnic	8	9.52
Total	84	100.00

Table 3. Profile of Student Respondents

Gender	f	%	School of Origin	f	%
Male	117	32.23	Public Senior High School	113	31.13
Female	246	67.77	Private Senior High School	93	25.62
			Public Vocational High School	38	10.47
			Private Vocational High School	76	20.94
			Public Islamic Senior High School	15	4.13
			Private Islamic Senior High School	28	7.71

Source: data processed, 2026

Table 2 presents the profile of the sampled institutions. Of the 84 institutions included in the study, universities constituted the largest proportion (32 institutions, 38.10%), followed by colleges (27 institutions, 32.14%), with the remainder comprising other institutional forms. Table 3 presents the demographic profile of the 363 student respondents, who were predominantly female (246, 67.77%) and drawn mostly from public senior high schools. Overall, the respondent profile indicates that the study involved 84 sampled institutions and 363 student respondents representing diverse institutional forms and school backgrounds, providing an adequate basis for examining the research variables across different segments.

Descriptive Statistics Test

Table 4. Descriptive Statistics (Item-Level Means)

	N	Lowest Item Mean	Highest Item Mean	Overall Mean	Std. Deviation
DMC	363	3.8788	4.1405	4.0138	0.0945
PCA	363	3.3994	3.7879	3.5808	0.1534
USD	363	3.7355	3.9725	3.8338	0.0838
VALID N(Listwise)	363				

Source: data processed, 2026

The descriptive statistics in Table 4 show that respondents' evaluations were consistently positive across the three constructs, with DMC recording the highest average item score, followed by USD and PCA.

Measurement Model Assessment (Outer Loadings)

Prior to evaluating indicator loadings, it is important to note that all three constructs in this study DMC, PCA, and USD were specified and estimated as first-order reflective constructs, each measured directly by its respective set of six indicators. No higher-order (second-order) construct modeling (e.g., repeated indicator or two-stage disjoint approach) was applied, as the theoretical conceptualization of each variable did not require decomposition into distinct sub-dimensions for estimation purposes (Sarstedt et al., 2019).

Table 5. Outer Loadings, T-Statistics, and Bootstrap Confidence Intervals

Construct	Indicator	Loading	T-statistic	CI 2.5%	CI 97.5%
Digital Marketing Capability	DMC1	0.844	33.93	0.788	0.886
	DMC2	0.883	46.98	0.841	0.916
	DMC3	0.889	57.53	0.856	0.916
	DMC4	0.885	47.21	0.844	0.917
	DMC5	0.893	41.04	0.844	0.928
	DMC6	0.879	44.92	0.835	0.911
Perceived Competitive Advantage	PCA1	0.726	21.17	0.652	0.786
	PCA2	0.764	24.94	0.697	0.819
	PCA3	0.887	67.08	0.859	0.911
	PCA4	0.847	45.40	0.807	0.879
	PCA5	0.888	54.54	0.852	0.915
	PCA6	0.792	25.16	0.722	0.846

Construct	Indicator	Loading	T-statistic	CI 2.5%	CI 97.5%
University Selection Decision	USD1	0.892	57.49	0.859	0.920
	USD2	0.891	53.07	0.854	0.921
	USD3	0.853	34.79	0.800	0.896
	USD4	0.904	57.28	0.868	0.931
	USD5	0.903	74.93	0.877	0.924
	USD6	0.888	60.59	0.857	0.914

Source: data processed, SMARTPLS 4, 2026

As shown in Table 5, all 18 indicators loaded above the commonly applied 0.70 threshold for indicator reliability, with loadings ranging from 0.726 (PCA1) to 0.904 (USD4) and all t-statistics exceeding the critical value of 1.96 ($p < 0.001$), confirming that each indicator reliably represents its intended construct. The bootstrap 95% confidence intervals for all loadings exclude zero and are relatively narrow, further supporting the stability of the measurement model. Convergent validity, internal consistency reliability, discriminant validity, and collinearity statistics are reported in the following subsection using the full PLS-SEM Algorithm output.

Construct Reliability, Convergent Validity, and Collinearity

Internal consistency reliability and convergent validity were assessed using the full PLS-SEM Algorithm output (5,000-resample bootstrapping was used only for significance testing of loadings and path coefficients reported above).

Table 6. Reliability, Validity, and Collinearity Statistics

Construct	Cronbach's Alpha	CR (rho_a)	CR (rho_c)	AVE	Outer VIF range
DMC	0.941	0.942	0.953	0.772	2.77 - 3.93
PCA	0.901	0.907	0.924	0.672	1.79 - 3.66
USD	0.947	0.948	0.957	0.790	3.26 - 4.91

Source: data processed, SMARTPLS 4, 2026

All three constructs exceed the recommended thresholds for internal consistency reliability (Cronbach's Alpha and Composite Reliability both above 0.70) and convergent validity (AVE above 0.50), confirming that the indicators for each construct reliably and consistently measure their intended latent variable. All outer VIF values remain below the conservative threshold of 5, indicating that multicollinearity among indicators within each construct is not a concern.

Common Method Bias

Table 7. Inner VIF

	VIF
DMC → PCA	1.000
DMC → USD	2.175
PCA → USD	2.175

Source: data processed, SMARTPLS 4, 2026

Because all constructs were measured using self-reported data from a single instrument, common method bias (CMB) was assessed using the full collinearity VIF approach (Kock, 2015),

under which an inner VIF above 3.3 indicates pathological collinearity. As reported in Table 7, all inner VIF values range from 1.000 to 2.175, well below this threshold, indicating that CMB is not a serious concern in this study.

Discriminant Validity

Table 8. Discriminant Validity: Fornell–Larcker Criterion and HTMT

Construct	DMC	PCA	USD
DMC	0.879 / —	—	—
PCA	0.735 / 0.794	0.820 / —	—
USD	0.778 / 0.822	0.793 / 0.856	0.889 / —

Note: Diagonal values are the square root of AVE for each construct; below-diagonal values are inter-construct correlations. Values after the slash are HTMT ratios for the corresponding construct pair. Source: data processed, SMARTPLS 4, 2026

Discriminant validity is supported under both criteria. For the Fornell–Larcker criterion, the square root of AVE for each construct (DMC = 0.879; PCA = 0.820; USD = 0.889) exceeds its correlations with the other constructs, and all HTMT ratios (0.794–0.856) remain below the conservative 0.90 threshold, confirming the three constructs are empirically distinct.\

Inner Model Collinearity and Model Fit

Table 9. Inner Model VIF and Model Fit Indices

Path / Index	Value
DMC → PCA (VIF)	1.000
DMC → USD (VIF)	2.175
PCA → USD (VIF)	2.175
SRMR	0.049
d_ULS	0.406
d_G	0.333
NFI	0.890

Source: data processed, SMARTPLS 4, 2026

All inner-model VIF values are well below the threshold of 5, indicating that collinearity between DMC and PCA as simultaneous predictors of USD does not bias the structural path estimates. The SRMR (0.049) and NFI (0.890) indicate an acceptable fit between the proposed model and the data.

Cross Loadings

Table 10. Cross Loadings

	Digital Marketing Capability	Perceived Advantage	Competitive	University Selection Decision
DMC1	0.844	0.588		0.647
DMC2	0.883	0.617		0.699
DMC3	0.889	0.698		0.679
DMC4	0.885	0.691		0.698

	Digital Marketing Capability	Perceived Advantage	Competitive	University Selection Decision
DMC5	0.893	0.643		0.697
DMC6	0.879	0.632		0.683
PCA1	0.539	0.726		0.605
PCA2	0.491	0.764		0.573
PCA3	0.669	0.887		0.708
PCA4	0.620	0.847		0.661
PCA5	0.660	0.888		0.681
PCA6	0.614	0.792		0.659
USD1	0.716	0.724		0.892
USD2	0.652	0.664		0.891
USD3	0.640	0.654		0.853
USD4	0.654	0.697		0.904
USD5	0.724	0.748		0.903
USD6	0.752	0.729		0.888

Source: data processed. SMARTPLS 4. 2026

Coefficient of Determination Test (R²)

Table 11. R-Square Results

Variable	R Square	Adjusted R Square
PCA	0.540	0.539
USD	0.712	0.710

Source: data processed. SMARTPLS 4. 2026

The structural model results provide strong support for the hypothesized relationships. Table 11 shows that Digital Marketing Capability explains 54.0 percent of the variance in Perceived Competitive Advantage ($R^2 = 0.540$), which by common R^2 benchmarks in PLS-SEM research (0.75 substantial, 0.50 moderate, 0.25 weak; [Hair et al., 2022](#)) represents a moderate level of explanatory power, while DMC and PCA jointly explain 71.2 percent of the variance in USD ($R^2 = 0.712$), indicating substantial explanatory power for the outcome variable. These results are consistent with a model, grounded in Dynamic Capability Theory, that links an institution's digital marketing capability to prospective students' enrollment decisions; because the data are cross-sectional, this pattern reflects association rather than a demonstrated conversion process.

Test F

Table 12. F-Square Results

Variable	PCA	USD
DMC	1.175	0.289
PCA		0.367

Source: data processed. SMARTPLS 4. 2026

The effect size analysis in Table 12 reinforces this interpretation. DMC exerts a very large effect on PCA ($f^2 = 1.175$), confirming that DMC is the dominant driver of students' competitive

perceptions in this model. Digital Marketing Capability also has a medium-to-large direct effect on University Selection Decision ($f^2 = 0.289$), while PCA exerts a large effect on USD ($f^2 = 0.367$). Taken together, these effect sizes indicate that both the direct capability-based pathway and the perception-based pathway make meaningful, non-trivial contributions to explaining students' USD.

Predictive Relevance: PLSpredict and CVPAT

Table 13. PLSpredict — Construct-Level (LV) Summary

	Q²predict	RMSE	MAE
PCA	0.538	0.685	0.545
USD	0.603	0.635	0.466

Source: data processed. SMARTPLS 4. 2026

Table 14. PLSpredict — Indicator-Level (MV) Summary with LM and IA Benchmarks

	Q²predict	PLS-SEM RMSE	LM RMSE	IA RMSE
PCA1	0.286	0.846	0.854	1.002
PCA2	0.231	0.848	0.852	0.967
PCA3	0.443	0.695	0.699	0.931
PCA4	0.380	0.681	0.678	0.865
PCA5	0.432	0.728	0.728	0.965
PCA6	0.374	0.796	0.795	1.006
USD1	0.509	0.658	0.668	0.939
USD2	0.419	0.680	0.689	0.892
USD3	0.406	0.709	0.727	0.920
USD4	0.422	0.677	0.691	0.890
USD5	0.520	0.647	0.664	0.934
USD6	0.559	0.619	0.632	0.932

Source: data processed. SMARTPLS 4. 2026

Following [Shmueli et al. \(2019\)](#) and [Liengard et al. \(2021\)](#), predictive relevance was assessed in two complementary stages: PLSpredict (10-fold, 10-repetition holdout) and the Cross-Validated Predictive Ability Test (CVPAT). At the construct level (Table 13), all out-of-sample Q²predict values for the endogenous latent variables were positive, indicating that the model outperforms the naive benchmark.

At the indicator level (Table 14), all 12 items generated positive Q²predict values, confirming that the PLS path model consistently outperforms the naive baseline for every measurement item. Comparing PLS-SEM RMSE values against the Linear Model and Indicator Average benchmarks provides further evidence of the model's predictive strength at the indicator level.

Table 15. CVPAT — Construct-Level (LV) Summary

	PLS loss	IA loss	Average loss difference	t-value	p-value
Perceived Competitive Advantage	0.591	0.916	-0.325	5.654	0.000
University Selection Decision	0.443	0.843	-0.400	6.092	0.000
Overall	0.517	0.879	-0.362	6.094	0.000

Source: data processed. SMARTPLS 4. 2026

The CVPAT results provide a formal significance test that PLSpredict alone cannot offer. Against the naive Indicator Average benchmark, the PLS-SEM model shows significantly lower prediction loss for both PCA and USD ($p < 0.001$ in all cases), confirming that the structural model meaningfully outperforms a model with no predictive structure.

Taken together, Q^2 predict, PLSpredict RMSE/MAE, and CVPAT jointly indicate that the model possesses genuine predictive relevance relative to a no-information baseline, though its superiority over a simple linear alternative is selective rather than uniform, being well supported for USD and only partially supported for PCA.

Hypothesis Test

Table 16. Path Coefficient Results for Direct Effects

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T-statistic (O/STDEV)	p-value	Direction of Association
DMC → PCA	0.735	0.735	0.036	20.201	0.000	Positive association
DMC → USD	0.426	0.428	0.053	8.067	0.000	Positive association
PCA → USD	0.480	0.477	0.053	9.108	0.000	Positive association

Source: data processed. SMARTPLS 4. 2026

Table 17. Path Coefficient Results for Indirect Effects

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T-statistic (O/STDEV)	p-value	Direction of Association.
DMC → PCA → USD	0.353	0.351	0.039	9.050	0.000	Positive association

Source: data processed. SMARTPLS 4. 2026

Hypothesis Testing for Direct Effects

The hypothesis testing results are consistent with all three hypothesized associations. Digital Marketing Capability is positively and significantly associated with Perceived Competitive Advantage ($\beta = 0.735$, $t = 20.201$, $p < 0.05$), supporting H1. This pattern is consistent with the theoretical proposition that a university's ability to provide high information quality, convenient digital access, and interactive online communication co-occurs with stronger prospective-student perceptions of the institution's competitive standing, broadly in line with Dynamic Capability Theory's premise that digital marketing capabilities underpin a sustainable market position. Because the data are cross-sectional and self-reported by the same respondents at a single point in time, this association should not be interpreted as evidence that DMC causes PCA. It remains plausible that the relationship runs, at least partly, in the opposite direction: students who already hold a favorable overall impression of an institution's competitive standing may retrospectively rate its digital marketing more positively (a halo effect), or an unobserved third factor (e.g., institutional reputation) may drive both perceptions simultaneously. This reverse-causality and common-source ambiguity is a well-documented limitation of cross-sectional survey designs, even when the structural model is estimated with PLS-SEM (Antonakis et al., 2010; Rindfleisch et al., 2008; Spector, 2019).

Perceived Competitive Advantage, in turn, is positively and significantly associated with University Selection Decision ($\beta = 0.480$, $t = 9.108$, $p < 0.05$), supporting H2, consistent with the proposition that students who perceive an institution as offering superior cost, quality, or differentiation value are more likely to report a favorable enrollment decision. Furthermore, Digital Marketing Capability shows a positive and significant direct association with University Selection Decision ($\beta = 0.426$, $t = 8.067$, $p < 0.05$), supporting H3, consistent with the idea that digital marketing capability relates to enrollment decisions both indirectly, through perceived competitive advantage, and directly, potentially by facilitating information search and reducing decision-related uncertainty. As with H1, these estimates describe covariation measured at a single point in time; because respondents who have already enrolled or committed to an institution may retrospectively evaluate its digital marketing and competitive standing more favorably, reverse or reciprocal association (USD $\rightarrow$ PCA and USD $\rightarrow$ DMC) cannot be ruled out with the present cross-sectional, single-source design. Longitudinal or experimental designs would be needed to establish directionality with greater confidence.

Comparison with prior empirical work indicates a mixed rather than uniform pattern for capability-competitive-advantage and capability-outcome linkages, which underscores the need for the cautious, association-based language adopted above. The magnitude of the DMC-PCA association observed here is broadly consistent with recent PLS-SEM evidence from Indonesian digital startups, where digital marketing capability (alongside managerial capability) was identified as a key foundation for building and sustaining competitive advantage under a Resource-Based View/Dynamic Capability Theory framework (Rosalin et al., 2026), and with PLS-SEM research on higher-education institutions in Zambia examining capability-based determinants of sustainable competitive advantage (Phiri et al., 2025). At the same time, not all studies find digital marketing capability to be a significant driver of competitive outcomes: in a PLS-SEM study of SMEs in Makassar, Indonesia, digital marketing capability showed no significant direct effect on sustainable competitive advantage, with the relationship instead operating indirectly through digital marketing innovation as a mediator (Taufik et al., 2026). This divergence suggests that the strength and even the significance of the DMC-competitive-advantage association may be contingent on sector (higher education vs. SME), the presence of mediating/moderating mechanisms, and model specification, rather than reflecting a universal causal law.

For the direct DMC $\rightarrow$ USD path, this result also contrasts with a regional study in the same market context: Prasetyo et al. (2026) found that digital marketing did not exert a statistically significant direct effect on student decisions at a private university in Medan, identifying brand awareness and price as the primary direct predictors instead. This empirical divergence suggests that the significance of a capability's direct association with student decisions depends heavily on model specification. While Prasetyo et al. (2026) relied on a multiple linear regression model without an intervening variable, the current study utilizes PLS-SEM to capture the structural nuances through a partial mediation framework, which may explain why a direct association remains detectable here.

Mediation Analysis of Perceived Competitive Advantage

The structural model results are consistent with a positive and statistically significant indirect association between Digital Marketing Capability and University Selection Decision through Perceived Competitive Advantage ($\beta = 0.353$, $t = 9.050$, $p < 0.05$), supporting H4. Because the direct association between DMC and USD remains significant after introducing the mediator, Perceived Competitive Advantage functions as a partial complementary mediator within this model. The total association of Digital Marketing Capability with University Selection Decision is 0.778, as generated by the PLS-SEM algorithm. This implies that approximately 45.37% of DMC's

total estimated relationship with student enrollment decisions (0.353 / 0.778) is statistically transmitted through students' competitive perceptions, while the remaining share reflects the direct informational value associated with the digital capability construct. As noted above, these mediation estimates are derived from cross-sectional data collected at a single time point; a fully time-ordered test of this mediation pathway (e.g., using panel or experimental data) would be required to rule out reverse or reciprocal pathways among the three constructs.

CONCLUSION

This study examined the relationships among Digital Marketing Capability (DMC), Perceived Competitive Advantage (PCA), and University Selection Decision (USD) among 363 second-semester students across 84 private higher education institutions in Medan City, Indonesia. Consistent with the four research objectives, all four hypotheses were supported. Digital Marketing Capability is positively associated with Perceived Competitive Advantage (H1), Perceived Competitive Advantage is positively associated with University Selection Decision (H2), Digital Marketing Capability is positively associated with University Selection Decision (H3), and Perceived Competitive Advantage partially mediates the association between Digital Marketing Capability and University Selection Decision (H4). Together, these findings indicate that Digital Marketing Capability is associated with students' university selection decisions through two complementary pathways: directly, by facilitating information search and reducing decision-related uncertainty, and indirectly, by strengthening students' comparative perception that a university offers superior value relative to competing institutions.

This study contributes to the higher education marketing literature in three ways. First, it extends the application of Dynamic Capability Theory to the context of student university selection by conceptualizing Digital Marketing Capability as an organizational capability rather than a set of isolated promotional activities. It should be noted, however, that this study measured DMC through information quality, accessibility, and interactivity rather than through direct indicators of sensing, seizing, and transforming; the findings are therefore consistent with, rather than direct empirical confirmation of, the sensing-seizing-transforming processes described by Teece (2007), and this theoretical alignment should be interpreted with corresponding caution. Second, the study extends the higher education marketing literature by positioning Perceived Competitive Advantage as a distinct comparative perceptual mechanism, empirically distinguishing it from related constructs such as institutional image, perceived value, and reputation, and by demonstrating that this comparative mechanism partially transmits the association between DMC and USD. Third, the finding that the direct DMC–USD association remains significant after accounting for PCA indicates that digital marketing capability is associated with university selection through more than a single perceptual pathway, suggesting that models relying solely on perceptual mediators may understate the overall association between institutional capability and student decision-making.

For private university managers, these findings suggest that Digital Marketing Capability, encompassing the information quality, accessibility, and interactivity of institutional digital communication, is associated with more favorable university selection outcomes both directly and through strengthened perceptions of competitive advantage. Universities seeking to strengthen this capability may consider auditing the clarity and completeness of information on their digital platforms, the ease with which prospective students can locate that information, and the responsiveness of institutional communication channels. Because Perceived Competitive Advantage exerts the largest total association with University Selection Decision among the constructs examined, institutions may also benefit from ensuring that their digital communication explicitly conveys distinctive value relative to competing universities in terms of cost, quality, and differentiation, rather than communicating institutional strengths in general terms alone.

Overall, this study demonstrates that Digital Marketing Capability is associated with students' University Selection Decision both directly and through the mediating mechanism of Perceived Competitive Advantage, offering an integrated perspective that positions digital marketing as a strategic organizational capability rather than a purely promotional function within the private higher education sector. Given the cross-sectional design of this study, these conclusions should be understood as statistical associations rather than established causal relationships, and the limitations and directions for further research outlined in the following section should be considered when interpreting and extending these findings.

LIMITATION AND FURTHER RESEARCH

This study has several limitations. First, the cross-sectional design captures respondents' perceptions at a single point in time and cannot establish causal direction among the three constructs; all reported relationships should be interpreted as statistical associations rather than causal effects, and longitudinal or experimental designs would strengthen causal inference. Second, the use of convenience sampling within proportional institutional quotas, though necessary given the practical constraints of reaching students across 84 institutions, means the sample is not a strict probability sample and may limit generalizability beyond second-semester students at private universities in Medan City. Third, data were collected through a self-administered online questionnaire, which may be subject to common method bias and social desirability tendencies; the low inner-model VIF values reported earlier (all below 2.18, well under the 3.3 threshold) provide indirect evidence against severe bias, but a dedicated test such as Harman's single-factor test was not performed, so this risk is reduced rather than fully ruled out. Fourth, the model focused on only three constructs; other variables previously associated with University Selection Decision in the literature, such as tuition affordability, institutional image, service quality, or word-of-mouth, were not incorporated and may account for additional variance. Fifth, although the sample spans 84 institutions, all constructs were measured at the level of individual student perceptions, so the findings describe patterns in how students perceive and respond to digital marketing rather than validated institution-level differences. Sixth, because second-semester respondents evaluated a selection process they had already completed, their responses may reflect retrospective rationalization rather than a real-time account, introducing possible recall bias.

Future research is encouraged to address these limitations in several ways. Longitudinal studies that track students from initial information search through final enrollment would help clarify the causal ordering of the relationships examined here. Researchers could also test the model across public universities or across other Indonesian provinces to assess the generalizability of the findings, and could incorporate additional mediating or moderating variables, such as institutional image, digital literacy, or program type (e.g., business, health, or engineering), to build a more comprehensive understanding of digital-era University Selection Decision. Finally, mixed-methods approaches that combine the current quantitative model with qualitative interviews could offer richer insight into how prospective students interpret and weigh universities' digital marketing signals during their decision-making process.

REFERENCES

- Al-Abdallah, G., & Ababakr, K. (2025). Exploring the mediating effect of digital versus traditional marketing communication on students' selection of higher education institutions in developing countries. *Human Behavior and Emerging Technologies*, 2025(1), Article 5510524. <https://doi.org/10.1155/hbe2/5510524>
- Al Dulaimi, A. M. Z., Al Marzooqi, S. M., Lubis, A., Siren, N. B. H., & Kassim, S. B. (2022). Innovation capabilities and human development competitiveness in education sector: Evidence from

- UAE. *Frontiers in Psychology*, 13, Article 933432. <https://doi.org/10.3389/fpsyg.2022.933432>
- Amado, M., Guzmán, A., & Juárez, F. (2023). Relationship between perceived value, student experience, and university reputation: Structural equation modeling. *Humanities and Social Sciences Communications*, 10, 1–13. <https://doi.org/10.1057/s41599-023-02272-y>
- Amelia, R., Tambunan, D., & Albert. (2024). The influence of brand image and brand trust on the decision to study in the tax accounting study program (Case study at Politeknik Unggul LP3M). *Journal of Finance Integration and Business Independence*, 1(1), 9–19. <https://doi.org/10.64276/jofibi.v1i1.8>
- Antonakis, J., Bendahan, S., Jacquart, P., & Lalive, R. (2010). On making causal claims: A review and recommendations. *The Leadership Quarterly*, 21(6), 1086–1120. <https://doi.org/10.1016/j.leaqua.2010.10.010>
- Apasrawirote, D., Yawised, K., & Muneesawang, P. (2022). Digital marketing capability: The mystery of business capabilities. *Marketing Intelligence & Planning*, 40(4), 477–496. <https://doi.org/10.1108/MIP-11-2021-0399>
- Badan Pusat Statistik. (2026). *Jumlah perguruan tinggi, dosen, dan mahasiswa (negeri dan swasta) di bawah Kementerian Riset, Teknologi dan Pendidikan Tinggi/Kementerian Pendidikan dan Kebudayaan menurut kabupaten/kota di Provinsi Sumatera Utara, 2025* [Tabel statistik]. <https://sumut.bps.go.id/en/statistics-table/3/Y21kVGRHNXZVMEI3S3pCRllyMHJRbnB1WkVZemR6MDkjMw==/jumlah-perguruan-tinggi-sup-1--sup---dosen--dan-mahasiswa-negeri-dan-swasta--di-bawah-kementerian-ri-set--teknologi-dan-pendidikan-tinggi-kementerian-pendidikan>
- Balakrishnan, A. S. (2025). Marketing-driven enhancements in student experience and their influence on university reputation. *Escalate: Economics and Business Journal*, 3(1), 1–13. <https://journal.takaza.id/index.php/escalate/article/view/285>
- Balal, M., Ebrahim, A., Dreza, G., & Abraham, A. (2024). Measuring the effects of online information quality, user-friendly accessibility, and digital marketing interactions on the intentions to visit tourist destinations: A case of Libya. *International Journal for Multidisciplinary Research*, 6(5). <https://doi.org/10.36948/ijfmr.2024.v06i05.27125>
- Blut, M., Chaney, D., Lunardo, R., Mencarelli, R., & Grewal, D. (2024). Customer perceived value: A comprehensive meta-analysis. *Journal of Service Research*, 27(4), 501–524. <https://doi.org/10.1177/10946705231222295>
- Chaffey, D., & Ellis-Chadwick, F. (2019). *Digital marketing: Strategy, implementation and practice* (7th ed.). Pearson Education.
- Chandrasekhar, V., Kalai, J., & Okoth, U. (2025). Service quality as a predictor of students' choice of academic programs: Perceptions of Kenyans of Indian origin in Kenyan public and private universities. *East African Journal of Education Studies*, 8(1). <https://doi.org/10.37284/eajes.8.1.2794>
- Comai, A. (2025). The power of digital marketing capabilities: The case of higher education. *Journal of Marketing Communications*, 1–24. <https://doi.org/10.1080/13527266.2025.2486131>
- Del-Castillo-Feito, C., Blanco-González, A., & González-Vázquez, E. (2020). The relationship between image and reputation in the Spanish public university. *Sustainability*, 12(3), Article 1189. <https://doi.org/10.3390/su12031189>
- Eum, S.-W. (2025). Effects of digital marketing on departmental choice and awareness in higher education. *International Journal of Engineering Business Management*, 17, Article 18479790251339786. <https://doi.org/10.1177/18479790251339786>
- Fernández-Gubieda, S., & Gutiérrez-García, E. (2025). University reputation overlooked: A systematic literature review of an under-researched concept. *Corporate Reputation Review*.

- <https://doi.org/10.1057/s41299-025-00234-5>
- Fombrun, C. J. (1996). *Reputation: Realizing value from the corporate image*. Harvard Business School Press.
- Geisser, S. (1974). A predictive approach to the random effect model. *Biometrika*, 61(1), 101–107. <https://doi.org/10.2307/2334290>
- Gharibe Niazi, M., Karbala Aghaei Kamran, M., & Ghaebi, A. (2020). Presenting a proposed framework for evaluating university websites. *The Electronic Library*, 38(5–6), 881–904. <https://doi.org/10.1108/EL-06-2020-0141>
- Hair, J. F., Hult, G. T. M., Ringle, C. M., Sarstedt, M., Danks, N. P., & Ray, S. (2022). *Partial least squares structural equation modeling (PLS-SEM) using R*. Springer. <https://doi.org/10.1007/978-3-030-80519-7>
- Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review*, 31(1), 2–24. <https://doi.org/10.1108/EBR-11-2018-0203>
- Hajatina, H. (2021). Pengaruh social networking, biaya kuliah dan pelayanan terhadap pengambilan keputusan kuliah di Fakultas Ekonomi dan Bisnis Universitas Tjut Nyak Dhien Medan. *Value: Jurnal Ilmiah Akuntansi, Keuangan dan Bisnis*, 2(1), 1–12. <https://doi.org/10.36490/value.v2i1.116>
- Hemsley-Brown, J., & Oplatka, I. (2006). Universities in a competitive global marketplace: A systematic review of the literature on higher education marketing. *International Journal of Public Sector Management*, 19(4), 316–338. <https://doi.org/10.1108/09513550610669176>
- Hoang, D. V., Hien, N. T., Thang, H. V., Phuong, P. N. T., & Duong, T. T.-T. (2025). Digital capabilities and sustainable competitive advantages: The case of emerging market manufacturing SMEs. *SAGE Open*, 15. <https://api.semanticscholar.org/CorpusID:277766899>
- Homburg, C., & Wielgos, D. (2022). The value relevance of digital marketing capabilities to firm performance. *Journal of the Academy of Marketing Science*, 50, 666–688. <https://doi.org/10.1007/s11747-022-00858-7>
- Hung, N. T., & Yen, K. L. (2022). Towards sustainable internationalization of higher education: Innovative marketing strategies for international student recruitment. *Sustainability*, 14(14), Article 8522. <https://doi.org/10.3390/su14148522>
- Isaac, S., & Michael, W. B. (1995). *Handbook in research and evaluation: A collection of principles, methods, and strategies useful in the planning, design, and evaluation of studies in education and the behavioral sciences* (3rd ed.). EdITS.
- Kazoleas, D., Kim, Y., & Moffitt, M. (2001). Institutional image: A case study. *Corporate Communications: An International Journal*, 6(4), 205–216. <https://doi.org/10.1108/EUM00000000006148>
- Kharisma, A. Y., & Agzumi, G. (2026). The impact of digital marketing on prospective students' university choice: Evidence from UDB Surakarta. *The Eastasouth Management and Business*, 4(2), 565–574. <https://doi.org/10.58812/esmb.v4i02.910>
- Kock, N. (2015). Common method bias in PLS-SEM: A full collinearity assessment approach. *International Journal of e-Collaboration*, 11(4), 1–10. <https://doi.org/10.4018/ijec.2015100101>
- Kotler, P., & Keller, K. L. (2016). *Marketing management* (15th ed.). Pearson India Education Services.
- Kwartawaty, N. N., Dian, S., Prajanti, W., Pramomo, S. E., & Khafid, M. (2025). Analysis of determinant factors in choosing private health higher education: The role of service quality as a moderating variable. *Journal of Information Systems Engineering and Management*, 10(30s).

- <https://doi.org/10.52783/jisem.v10i30s.4772>
- Lembaga Layanan Pendidikan Tinggi Wilayah I. (2024). *Laporan kinerja LLDIKTI Wilayah I Medan tahun 2024*.
- Li, S., Quan, Y., Xiao, L., Ren, H., & Abinova, A. Y. (2025). Exploring the influence of social media communication and brand image on international student enrollment intentions in higher education. *Frontiers in Education*, 10, Article 1618524. <https://doi.org/10.3389/feduc.2025.1618524>
- Liengaard, B. D., Sharma, P. N., Hult, G. T. M., Jensen, M. B., Sarstedt, M., Hair, J. F., & Ringle, C. M. (2021). Prediction: Coveted, yet forsaken? Introducing a cross-validated predictive ability test in partial least squares path modeling. *Decision Sciences*, 52(2), 362–392. <https://doi.org/10.1111/deci.12445>
- Luque-Martínez, T., Faraoni, N., & Doña-Toledo, L. (2026). Reflecting university image in the era of digitalization. *Social Sciences & Humanities Open*, 13, Article 102350. <https://doi.org/10.1016/j.ssaho.2025.102350>
- Mateus, M. A., Guzmán Rincón, A., Acosta, F., Soler, I. R., & Valero, D. (2024). Keys to managing university reputation from the students' perspective. *Heliyon*, 10, Article e39805. <https://doi.org/10.1016/j.heliyon.2024.e39805>
- Moogan, Y., & Baron, S. (2003). An analysis of student characteristics within the student decision making process. *Journal of Further and Higher Education*, 27(3), 271–287. <https://doi.org/10.1080/0309877032000098699>
- Munir, F. M., & Danish, F. (2026). The impact of digital marketing on student enrollment in higher education: A conceptual model. In R. K. Hamdan (Ed.), *Technological innovation and enhancing decision processes in modern enterprises* (pp. xx–xx). Springer Nature Switzerland. https://doi.org/10.1007/978-3-032-04378-8_22
- Nasereddin, A. Y. (2023). Impact of the blue ocean strategy dimensions in achieving competitive advantage from the perspective of faculty members. *Information Sciences Letters*, 12(6), 2685–2698. <https://doi.org/10.18576/isl/120639>
- Nitzl, C., Roldan, J. L., & Cepeda, G. (2016). Mediation analysis in partial least squares path modeling: Helping researchers discuss more sophisticated models. *Industrial Management & Data Systems*, 116(9), 1849–1864. <https://doi.org/10.1108/IMDS-07-2015-0302>
- Nurhayati, N., Tanjung, A. A., Ardiyansah, M. I., & Muliyani, M. (2026). The impact of social media marketing, consumptive behaviour, and financial self-control on the financial well-being of students in Medan City. *Jurnal Manajemen*, 17(1), 180–192. <https://doi.org/10.32832/jmuika.v17i1.21636>
- Nuseir, M. T., & El Refae, G. A. (2022). Factors influencing the choice of studying at UAE universities: An empirical research on the adoption of educational marketing strategies. *Journal of Marketing for Higher Education*, 32(2), 215–237. <https://doi.org/10.1080/08841241.2020.1852467>
- Pangkalan Data Pendidikan Tinggi. (2025). *Statistik pendidikan tinggi*. <https://pddikti.kemdiktisaintek.go.id/detail-pt/NlmYDVzsLARGGdkPYH1cUnuDsGUB6YcwduocpbD4a5XZf0JLx2VmrxsjfabDlhEucZPxLg==>
- Phiri, D. S. M., Mungule, C. M., & Phiri, J. (2025). Determinants of competitive advantage for higher education institutions: A case of selected Zambian universities. *Advanced Research in Economics and Business Strategy Journal*, 6(1), 91–113.
- Porter, M. E. (1985). *Competitive advantage: Creating and sustaining superior performance*. Free Press.
- Prakoso, D., & Tanjung, A. A. (2025). Pengaruh kualitas pelayanan dan fasilitas terhadap minat

- berkunjung kembali melalui kepuasan konsumen Hotel Comercial Bizpark [The influence of service quality and facilities on intention to revisit through consumer satisfaction at the Commercial Bizpark Hotel]. *Jurnal Samudra Ekonomi dan Bisnis*, 16(1), 16–28. <https://doi.org/10.33059/jseb.v16i1.10074>
- Prasetyo, M. G., Lubis, H. P., & Nasution, F. A. (2026). Analysis of digital marketing, brand awareness, brand image, and price on students' decisions studying at Panca Budi Development University. *Jurnal Fokus Manajemen*, 6(2), 527–536.
- Pratikto, Z., & Setyaningsih, R. (2026). Social media marketing, brand awareness, and student enrollment decisions: The mediating role of perceived value. *International Journal of Business, Law, and Education*, 7(2), 1352–1359. <https://doi.org/10.56442/ijble.v7i2.1510>
- Pusat Data dan Teknologi Informasi. (2025). *Statistik pendidikan tinggi 2024*.
- Putri, N. A. (2025). Exploring the preferences of prospective students in choosing private higher education institutions. *[Nama jurnal]*, 5, 82–99.
- Qasim, A., Al-Askari, P. S. M., Massoud, H., & Ayoubi, R. (2021). Student university choice in Kurdistan-Iraq: What factors matter? *Journal of Further and Higher Education*, 45(1), 120–136. <https://doi.org/10.1080/0309877X.2020.1742298>
- Rindfleisch, A., Malter, A. J., Ganesan, S., & Moorman, C. (2008). Cross-sectional versus longitudinal survey research: Concepts, findings, and guidelines. *Journal of Marketing Research*, 45(3), 261–279. <https://doi.org/10.1509/jmkr.45.3.261>
- Rosalin, S., Raharjo, K., Utami, H. N., & Prasetya, A. (2026). Optimizing competitive advantage of Indonesian startups: A study on the relationship between managerial capability, digital marketing, and business resilience. *Cogent Business & Management*, 13(1), Article 2672812. <https://doi.org/10.1080/23311975.2026.2672812>
- Ruhmi, I., & Tanjung, A. A. (2023). The influence of financial literacy, fintech peer-to-peer lending, and payment gateways on the financial performance of MSMEs in Medan City. *Quantitative Economics and Management Studies*, 4(4). <https://doi.org/10.35877/454RI.qems1790>
- Sarstedt, M., Hair, J. F., Cheah, J.-H., Becker, J.-M., & Ringle, C. M. (2019). How to specify, estimate, and validate higher-order constructs in PLS-SEM. *Australasian Marketing Journal*, 27(3), 197–211. <https://doi.org/10.1016/j.ausmj.2019.05.003>
- Sekaran, U., & Bougie, R. (2016). *Research methods for business: A skill-building approach* (7th ed.). Wiley.
- Shmueli, G., Sarstedt, M., Hair, J. F., Cheah, J.-H., Ting, H., Vaithilingam, S., & Ringle, C. M. (2019). Predictive model assessment in PLS-SEM: Guidelines for using PLSpredict. *European Journal of Marketing*, 53(11), 2322–2347. <https://doi.org/10.1108/EJM-02-2019-0189>
- Simangunsong, A. R., & Tanjung, A. A. (2026). The influence of social media usage intensity and pricing strategy on the financial performance of MSMEs in Medan City through financial management. *Asian Journal of Management Entrepreneurship and Social Science*, 6(3), 6122–6147. <https://www.ajmesc.com/index.php/ajmesc/article/view/2261/1540>
- Spector, P. E. (2019). Do not cross me: Optimizing the use of cross-sectional designs. *Journal of Business and Psychology*, 34(2), 125–137. <https://doi.org/10.1007/s10869-018-09613-8>
- Stone, M. (1974). Cross-validatory choice and assessment of statistical predictions. *Journal of the Royal Statistical Society: Series B (Methodological)*, 36(2), 111–133. <https://doi.org/10.1111/j.2517-6161.1974.tb00994.x>
- Syam, M., Sembiring, B. K. F., & Maas, L. T. (2019). The analysis of marketing mix strategy effect on students' decision to choose faculty economics and business of Universitas Dharmawangsa Medan. *International Journal of Multicultural and Multireligious Understanding*, 6(6), 71–80. <https://doi.org/10.18415/ijmmu.v6i6.1173>
- Taufik, M., Aris, V., Bakri, R., Islamiah, F., & Mubarak, H. (2026). Building small medium enterprise
-

- competitive advantage through situational leadership, digital marketing capabilities and innovation. *Manajemen dan Bisnis*, 25(3), 22–39.
- Teece, D. J. (2007). Explicating dynamic capabilities: The nature and microfoundations of (sustainable) enterprise performance. *Strategic Management Journal*, 28(13), 1319–1350. <https://doi.org/10.1002/smj.640>
- Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal*, 18(7), 509–533. [https://doi.org/10.1002/\(SICI\)1097-0266\(199708\)18:7<509::AID-SMJ882>3.0.CO;2-Z](https://doi.org/10.1002/(SICI)1097-0266(199708)18:7<509::AID-SMJ882>3.0.CO;2-Z)
- Warner, K. S. R., & Wäger, M. (2019). Building dynamic capabilities for digital transformation: An ongoing process of strategic renewal. *Long Range Planning*, 52(3), 326–349. <https://doi.org/10.1016/j.lrp.2018.12.001>
- Wijaya, H., Andri, R. C., & Rachmawati, D. (2023). Analysis of digital marketing strategies on interest and enrollment decisions of prospective new students in private higher education institutions in Indonesia (A case study of Jakarta Global University). *Klabat Journal of Management*, 4(3), 147–162. <https://doi.org/10.60090/kjm.v4i2.1007.147-162>
- Yadav, R., Shiva, A., & Narula, S. (2022). Exploring private university attractiveness from students' perspective to ensure sustainable institutes: An empirical investigation from Indian perspective. *Asia-Pacific Journal of Business Administration*, 16(1), 170–203. <https://doi.org/10.1108/apjba-04-2021-0165>
- Yang, M., Al Mamun, A., & Salameh, A. (2023). Leadership, capability and performance: A study among private higher education institutions in Indonesia. *Heliyon*, 9, Article e13026. <https://doi.org/10.1016/j.heliyon.2023.e13026>
- Zeithaml, V. A. (1988). Consumer perceptions of price, quality, and value: A means-end model and synthesis of evidence. *Journal of Marketing*, 52(3), 2–22. <https://doi.org/10.1177/002224298805200302>
- Zhongxuan, Augustijn, K., De Esch, I., & Bossink, B. (2023). Micro-foundations of dynamic capabilities to facilitate university technology transfer. *PLOS ONE*, 18, Article e0283777. <https://doi.org/10.1371/journal.pone.0283777>