



Article

# The Influence of Digital Literacy in the AI-Driven Educational Era on Online Brand Equity and e-WOM: A Structural Equation Modeling Approach

Yung Hsin Lee

Department of International Business, Tamkang University, New Taipei City 251301, Taiwan;  
138332@o365.tku.edu.tw; Tel.: +886-26215656 (ext. 3584)

## Abstract

In the contemporary AI-mediated digital landscape, digital literacy has emerged as a cornerstone competency for students and is closely associated with institutional perception. This study examines the relationship between students' digital literacy—within the context of AI-integrated learning environments—on Higher Education Online Brand Equity (HEOBE), brand trust, brand affect, and electronic word of mouth (e-WOM). Utilizing a Structural Equation Modeling (SEM) framework, data were collected from university students in Taiwan (N = 645) between January and February 2024. Statistical validation and hypothesis testing were performed using SPSS and AMOS. The results demonstrate that digital literacy in the AI era exerts a significant positive association with HEOBE, indicating that technologically proficient students within AI-integrated educational environments perceive higher value in a university's digital brand. Furthermore, the four dimensions of HEOBE—institutional reputation, brand identification, brand loyalty, and campus perception—were found to exhibit significant positive associations with both brand trust and brand affect. Intriguingly, the study uncovers a behavioral dichotomy in word-of-mouth intentions: while brand affect is positively associated with e-WOM, brand trust shows an unexpected negative structural association with e-WOM. This suggests that while emotional attachment spurs advocacy, high cognitive trust may lead to “passive loyalty” in AI-driven digital spaces. These findings provide critical theoretical insights and practical benchmarks for higher education institutions seeking to optimize AI-augmented brand management and student engagement strategies.

**Keywords:** artificial intelligence; digital literacy; HEOBE; brand trust; brand affect; e-WOM



Academic Editor: Ting Chi

Received: 6 July 2026

Revised: 24 August 2026

Accepted: 26 August 2026

Published: 8 September 2026

**Copyright:** © 2026 by the author.

Licensee MDPI, Basel, Switzerland.

This article is an open access article distributed under the terms and conditions of the [Creative Commons Attribution \(CC BY\)](https://creativecommons.org/licenses/by/4.0/) license.

## 1. Introduction

With the rapid acceleration of global digitalization and the transformative emergence of Artificial Intelligence (AI), digital literacy has evolved from a basic technical skill into an indispensable core competency in the modern era. Within Higher Education Institutions (HEIs), this competency is essential for helping students navigate their academic journeys and prepare for an increasingly complex and volatile global environment [1]. At the same time, the advancement of AI-driven technologies and generative AI has reshaped human lifestyles, learning paradigms, and social interactions. In AI-mediated educational environments, students' digital literacy extends beyond basic technical skills to encompass the ability to critically interpret and evaluate AI-generated content and algorithmic recommendations. This capability is likely to shape how students perceive, evaluate, and respond to

institutional brand signals conveyed through digital channels, thereby influencing the formation of Higher Education Online Brand Equity (HEOBE), brand trust, brand affect, and subsequent e-WOM behaviors. Emerging research suggests that AI-driven personalization and algorithmic recommendations can shape brand trust, brand affect, and word-of-mouth intentions in online environments [2,3]. As AI becomes more widely applied in social media marketing, AI-generated virtual influencers have also emerged as a growing phenomenon [4]. It is important to distinguish between digital literacy and AI literacy in this context. While digital literacy encompasses technical, cognitive, and social-emotional competencies for using digital tools [5,6], AI literacy represents a more specialized extension focusing on human-AI collaboration and algorithmic understanding [7]. In this study, we focus on digital literacy as the foundational competency, recognizing its critical role in enabling students to navigate AI-augmented educational environments.

In this AI-mediated academic landscape, an individual's level of digital literacy—especially their ability to critically engage with AI systems and algorithmic outputs—is closely associated with academic and professional success. Contemporary higher education increasingly emphasizes experiential learning approaches, shifting from purely theoretical instruction toward a “learning by doing” paradigm that equips students with practical [8], AI-augmented analytical and managerial competencies. As a result, students' digital literacy is associated with both their learning effectiveness and their evaluation of institutional quality in AI-mediated educational contexts. This competency is significantly associated with their perceptions of institutional value and plays a foundational role in the development of Higher Education Online Brand Equity (HEOBE).

In response to ongoing digital transformation, HEIs have actively integrated a wide range of online resources and digital platforms, including official websites, online learning systems, and social media channels. This shift reflects a broader movement toward digital brand transformation in higher education. Within this context, the concept of HEOBE has gained prominence, emphasizing the institution's overall digital image, perceived value, and interactive experience [9]. Students with higher levels of digital literacy are better positioned to interpret, evaluate, and internalize institutional messages conveyed through digital channels, thereby positioning digital literacy as a key antecedent of HEOBE. This perspective aligns with the strategic transition from traditional marketing approaches to AI-enhanced branding strategies in higher education [9].

Furthermore, students' perceptions of institutional professionalism and value—formed through website content, digital interactions, and online learning experiences—play a vital role in strengthening both brand trust and brand affect. Brand trust refers to students' confidence in the institution's reliability and its ability to fulfill its commitments [10], whereas brand affect reflects their emotional responses and sense of attachment toward the institution. A well-established HEOBE framework effectively communicates these attributes, fostering positive attitudes and deepening students' emotional and psychological engagement with the institutional brand.

In the era of social media, consumers increasingly rely on electronic word of mouth (e-WOM), often consulting online reviews and peer opinions before making decisions [11,12]. Within the higher education sector, e-WOM has become a critical channel through which students share experiences and shape collective perceptions. Platforms such as PTT, Dcard, and Facebook serve as key spaces for institutional evaluation and discussion. When students exhibit higher levels of brand trust and positive emotional attachment, they are more likely to engage in positive e-WOM behaviors, actively sharing favorable experiences and recommendations, thereby enhancing the institution's reputation and brand image [13].

Despite the growing body of literature linking digital literacy to brand-related outcomes, limited research has examined how digital literacy functions in AI-mediated edu-

cational contexts. While existing studies primarily focus on general technical competencies [1], there is limited empirical research examining how students' digital literacy influences their perceptions of higher education brands when interacting with AI-integrated learning environments [14]. To address this gap, the present study investigates whether students with higher levels of foundational digital literacy perceive, evaluate, and promote institutional brands differently within AI-mediated higher education environments. This research draws on a sample of university students in Taiwan, providing empirical insights into the evolving role of AI-driven digital literacy in shaping higher education branding outcomes.

## 2. Literature Review and Hypothesis Development

### 2.1. Digital Literacy in the AI Era

Digital literacy is a multidimensional construct originally introduced by the authors of [5], who defined it as “the ability to understand and use information in multiple formats from a wide range of sources via computers.” This foundational definition highlights information comprehension and application as essential competencies in the digital era. As digital technologies continue to evolve, the concept of digital literacy has expanded to encompass a broader set of skills related to the effective use of digital tools and platforms, including those driven by artificial intelligence [6].

Subsequently, ref. [15] expanded the concept of digital literacy by emphasizing participatory culture, defining it as the ability to actively engage with digital technologies to create, remix, and share content. This perspective is particularly relevant in the age of Generative AI, where users are no longer passive recipients of information but active participants in AI-assisted content creation. Recent scholarship has proposed AI literacy as an extension of digital literacy, emphasizing human–AI interaction, algorithmic awareness, and the critical evaluation of AI-generated content [7]. In this study, we focus on digital literacy as a foundational competency that enables students to navigate AI-augmented educational resources, rather than measuring AI-specific skills.

With the rapid digital transformation of Higher Education Institutions (HEIs) and the proliferation of AI technologies, digital literacy has become a fundamental component of contemporary education. Recent studies highlight that these competencies are indispensable for individuals to navigate complex digital environments and succeed in a technology-driven society [16]. From a theoretical perspective, digitally literate individuals are better equipped to adapt to emerging technologies and to interpret the evolving “symbolic languages” embedded in AI-mediated communication systems [6]. Developing such competencies is therefore critical for preparing students to meet the demands of a workforce that increasingly values AI-augmented analytical and managerial capabilities.

In contemporary research, digital literacy is conceptualized as a multidimensional construct comprising technical, cognitive, and social competencies that influence how individuals learn, work, and interact within digital ecosystems. These competencies include the effective use of digital tools and AI-enabled platforms, the critical evaluation of information credibility and AI-generated outputs, and the ability to communicate and collaborate effectively in digital and AI-mediated environments [17].

When individuals are able to adapt to the continuous evolution of digital and AI technologies—while critically evaluating information and responsibly utilizing digital resources—they are more likely to make informed decisions in complex digital contexts [1,6]. In AI-mediated environments, brand-related information is increasingly delivered through algorithmically curated content and AI-driven interfaces. This shift implies that students' digital literacy—particularly their ability to critically evaluate AI-generated outputs—plays a central role in how institutional brand signals are transmitted and in-

interpreted, suggesting that traditional brand equity frameworks should be extended to account for the role of AI literacy in shaping perceptions of online brand equity.

### 2.2. Higher Education Online Brand Equity (HEOBE)

A brand is a constellation of concepts, names, symbols, and intangible assets that shape perceptions [18]. Ref. [19] conceptualized brand equity as a set of brand assets and liabilities linked to a brand, its name, and symbol, while [20] defined it as the differential effect of brand knowledge on consumer responses to marketing. In higher education, HEOBE refers to a university's brand value in digital environments, communicated through websites, social media, and other online channels [9]. As HEIs become more market-oriented, branding has become central to institutional competitiveness and the development of distinctive, consistent, and value-driven brand images.

Brand equity is commonly viewed from financial-based, employee-based, and customer-based perspectives [21]. In higher education, brand equity is primarily shaped by students' experiences and perceptions, making a customer-based brand equity (CBBE) approach the most appropriate for evaluating university brands [21,22]. Accordingly, university brand equity rests on students' cognitive and affective evaluations of institutional image, service quality, and brand loyalty.

With the rise of digital media, brand equity has expanded into the online domain. University brand building is shaped by dimensions such as institutional reputation, staff quality, campus emotional climate, brand awareness, and loyalty [23,24]. Brand equity is closely associated with success in higher education branding [19,25], and [9] further operationalized Higher Education Online Brand Equity (HEOBE) through institutional reputation, E-campus Performance, brand Identification, faculty competency, perceived value, brand loyalty, and campus perception.

### 2.3. Brand Trust

Brand trust refers to consumers' confidence in a brand's ability to fulfill its promises and deliver consistent value [26,27]. It is grounded in perceptions of reliability and integrity, which shape whether consumers believe the brand will consistently meet expectations [28]. In higher education, student trust is associated with academic engagement, satisfaction, brand reputation, and recruitment competitiveness. When trust is strong, students are more likely to choose and remain loyal to the institution, reducing switching behavior toward other schools [29].

Brand trust becomes especially important under uncertainty, when students lack complete information about teaching quality, faculty expertise, or graduate outcomes [30]. In such situations, information asymmetry is strongly associated with trust formation, and clearer information about institutional attributes can help strengthen trust [27,31,32]. Universities can build trust through transparent curriculum information, facility presentation, quality improvement, and positive narratives shared by students or social media. A strong reputation is associated with higher levels of consumer trust and supports long-term institutional relationships [33].

### 2.4. Brand Affect

Brand affect is defined as the potential of a brand to elicit a positive emotional response in the average consumer because of brand usage [26]. It can be characterized as the affective reaction generated by consumers following their experience with a specific brand [34]. Brand affect is associated with both consumers' sense of identification and psychological connection with the brand and their purchasing decisions, thereby fostering higher brand recognition and loyalty within the market. Consequently, brand affect typically emerges within the context of a close relationship with the brand [35] and serves

as a vital foundation for sustained brand–consumer interaction. In today’s highly competitive market environment, brands have evolved beyond mere product representations to become significant media for establishing emotional bonds with consumers. The formation of brand affect stems from the psychological perceptions generated during consumer–brand interactions; thus, brand affect can be viewed as the evocative power of the affective experience elicited by the brand [34].

Ref. [16] posits that brand affect is intricately linked to brand trust. While brand trust is generally regarded as a process requiring cognitive deliberation and long-term evaluation, brand affect is characterized by greater spontaneity and immediacy, representing a more impulsive emotional dimension. This suggests that when consumers experience positive emotions toward a brand, they are more likely to develop trust, which subsequently reinforces brand loyalty. In other words, when a brand successfully cultivates feelings of pleasure, satisfaction, or belonging, brand trust is enhanced, which is associated with purchasing behavior and commitment. Furthermore, a high degree of emotional connection between consumers and a brand is associated with greater willingness for sustained support and provides an effective buffer against external negative information or influences [36].

### 2.5. *Electronic Word of Mouth (e-WOM)*

Ref. [37] conceptualizes traditional Word of Mouth (WOM) as the dissemination of information concerning brands, products, or services between non-commercial communicators and information recipients. This implies that WOM encompasses any verbal or interpersonal communication—whether positive or negative—regarding a brand, product, service, or organization, provided the recipient perceives the sender as having no commercial intent [38]. Ref. [11] further defines Electronic Word of Mouth (e-WOM) as “any positive or negative statement made by potential, actual, or former customers about a product or company, which is made available to a multitude of people and institutions via the Internet.”

With the rise of Web 2.0 and new media channels, WOM has evolved into e-WOM, which spreads faster and reaches a much wider audience through social media, blogs, forums, and review sites [39]. In the digital era, consumers increasingly rely on online reviews and user experiences to build brand knowledge before making purchase decisions [12,40]. Positive e-WOM is associated with strong social influence in online communities and stronger brand image while offering useful feedback for improving products and services [40,41].

Accordingly, positive e-WOM can augment a brand’s market value and reinforce consumer trust. Conversely, negative e-WOM may jeopardize brand reputation and diminish the probability of a consumer selecting the brand. Ultimately, the credibility of e-WOM is associated with consumer decision-making processes [42].

### 2.6. *Hypothesis Development*

#### 2.6.1. The Relationship Between Digital Literacy and HEOBE

In the contemporary higher education environment, digital literacy is associated with the interaction between students and university brands [43]. The scholars posit that in an era where digital forms of information and communication dominate, digital literacy has become a critical competency required to flourish both within and beyond the educational sphere, highlighting its central role in higher education [43]. Digital literacy refers to the ability to utilize digital technology to effectively search for, acquire, evaluate, and apply digital information to meet various needs [44,45]. Ref. [46] further showed that the level of digital literacy among university students is significantly correlated with their learn-

ing motivation, attitudes, and satisfaction. As university brand management and student engagement increasingly transition to online platforms, the importance of digital literacy has escalated, becoming a core capability for facilitating academic exchange, strengthening brand interaction, and enhancing learning engagement.

Ref. [18] defines brand equity as the “added value endowed by the brand to the product or service.” Building upon this, ref. [9] developed the concept of Higher Education Online Brand Equity (HEOBE), which encompasses dimensions such as institutional reputation, E-campus performance, brand identification, faculty competency, perceived value, brand loyalty, and campus perception. This framework reflects the brand value of a university as experienced by students within a digital environment. Currently, students rely heavily on university websites, social media, and other digital platforms to understand their institutions; thus, their level of digital literacy directly dictates how they perceive and evaluate the university brand. Students with higher digital literacy tend to participate more actively in university social media interactions, thereby deepening their cognition of and connection to the university brand [21,47]. Such interactions are associated with stronger identification with the brand’s values and greater engagement and loyalty. Furthermore, digitally literate students are more proficient in navigating university websites and learning platforms, and they possess the ability to discern the authenticity and credibility of information. This ensures that their brand impressions are derived from accurate sources, allowing them to precisely grasp the institution’s reputation and characteristics. In light of these considerations, the present study proposes the following hypotheses:

**H1-1.** *Digital literacy is positively associated with institutional reputation.*

**H1-2.** *Digital literacy is positively associated with E-campus performance.*

**H1-3.** *Digital literacy is positively associated with brand identification.*

**H1-4.** *Digital literacy is positively associated with faculty competency.*

**H1-5.** *Digital literacy is positively associated with perceived value.*

**H1-6.** *Digital literacy is positively associated with brand loyalty.*

**H1-7.** *Digital literacy is positively associated with campus perception.*

#### 2.6.2. The Relationship Between HEOBE and Brand Trust

In the contemporary landscape of higher education, student trust in university brands is of paramount importance, as the selection of an institution is often perceived as a high-stakes decision with profound implications for an individual’s future. According to the definition in [48], trust is characterized as the expectation that parties within a relationship will cooperate and fulfill their respective responsibilities and obligations. More specifically, brand trust denotes the degree of consumer confidence in a brand’s integrity and reliability regarding the fulfillment of its promises, essentially, the extent to which consumers are willing to rely on the brand to deliver its stated value [26]. Ref. [49] identifies brand trust as a fundamental dimension of brand equity in higher education, emphasizing that within the educational sector, trust serves as both a core component and a critical outcome of brand equity. Furthermore, brand trust is typically cultivated through empirical experiences [50]. When consumers encounter pleasant and meaningful online experiences within brand communities, their trust in the brand is significantly bolstered [51].

Brand trust assists in mitigating perceived risks and uncertainties [48,50]. When consumers trust a brand, they feel more secure regarding their choices and anticipated outcomes. Concurrently, brand trust facilitates the maintenance of long-term loyal relationships between consumers and the brand [50,52]. When a university possesses robust Higher Education Online Brand Equity (HEOBE) encompassing an excellent institutional reputation, high-quality educational resources, and positive student experiences, students' trust in the institution is reinforced. Students with high levels of trust tend to exhibit positive behaviors, such as continued enrollment, peer recommendations, and sustained engagement as alumni, all of which further augment the institution's brand equity. In light of these considerations, the present study proposes the following hypotheses:

**H2-1.** *Institutional reputation is positively associated with brand trust.*

**H2-2.** *E-campus performance is positively associated with brand trust.*

**H2-3.** *Brand identification is positively associated with brand trust.*

**H2-4.** *Faculty competency is positively associated with brand trust.*

**H2-5.** *Perceived value is positively associated with brand trust.*

**H2-6.** *Brand loyalty is positively associated with brand trust.*

**H2-7.** *Campus perception is positively associated with brand trust.*

#### 2.6.3. The Relationship Between HEOBE and Brand Affect

Higher Education Online Brand Equity (HEOBE) represents the asset value of a university brand within the digital landscape; essentially, HEOBE measures students' online perceptions and evaluations of an institution's brand. Ref. [53] conceptualizes brand affect as the emotional responses elicited by brand experiences, performance, and imagery. Furthermore, brand affect can be characterized as a consumer's overall favorable or unfavorable assessment of a brand [54]. Ref. [26] further posits that brand affect denotes the potential of a brand to evoke positive emotional reactions among consumers. In other words, when students experience emotions such as pleasure or affinity toward a university brand, it indicates that the institution is performing effectively in terms of brand affect.

In the context of higher education institutions, brand affect provides a novel perspective, proving more instrumental than student satisfaction in fostering long-term relationships within institutional marketing [55]. Brand affect signifies the capacity of a university brand to arouse positive feelings, which ultimately facilitates the formation of brand engagement behaviors [56]. Moreover, brand affect is recognized as a primary driver of brand loyalty [26,54]. Consequently, when students develop positive emotions toward a university brand, their perception of the institution's brand equity is typically reinforced. For instance, feelings of pleasure and attachment are likely to translate into brand loyalty and word-of-mouth recommendations, thereby further augmenting the university's overall brand value. In light of these considerations, the present study proposes the following hypotheses:

**H3-1.** *Institutional reputation is positively associated with brand affect.*

**H3-2.** *E-campus performance is positively associated with brand affect.*

**H3-3.** *Brand identification is positively associated with brand affect.*

**H3-4.** *Faculty competency is positively associated with brand affect.*

**H3-5.** *Perceived value is positively associated with brand affect.*

**H3-6.** *Brand loyalty is positively associated with brand affect.*

**H3-7.** *Campus perception is positively associated with brand affect.*

#### 2.6.4. The Relationship Between Brand Trust and Electronic Word of Mouth

Brand trust is an important factor in the higher education context. It refers to consumers' willingness to rely on a brand under conditions of risk and their confidence that the brand will fulfill its promises and reduce uncertainty [26,54,57]. In universities, brand trust is reflected in students' confidence in educational quality, service performance, and institutional commitments [10].

Electronic word of mouth (eWOM) refers to positive or negative opinions about a brand, product, or service shared through internet-based platforms [11,58]. In higher education, students may share academic experiences and evaluations of university services via social media or online review platforms, thereby influencing prospective students' perceptions.

Relationship marketing theory suggests that trust is a key antecedent of positive word of mouth and long-term relational outcomes [28]. Thus, when students trust their university, they are more likely to share favorable experiences and recommend it online. Accordingly, brand trust is expected to positively influence eWOM. In light of these considerations, the present study proposes the following hypothesis:

**H4.** *Brand trust is positively associated with electronic word of mouth.*

#### 2.6.5. The Relationship Between Brand Affect and Electronic Word of Mouth

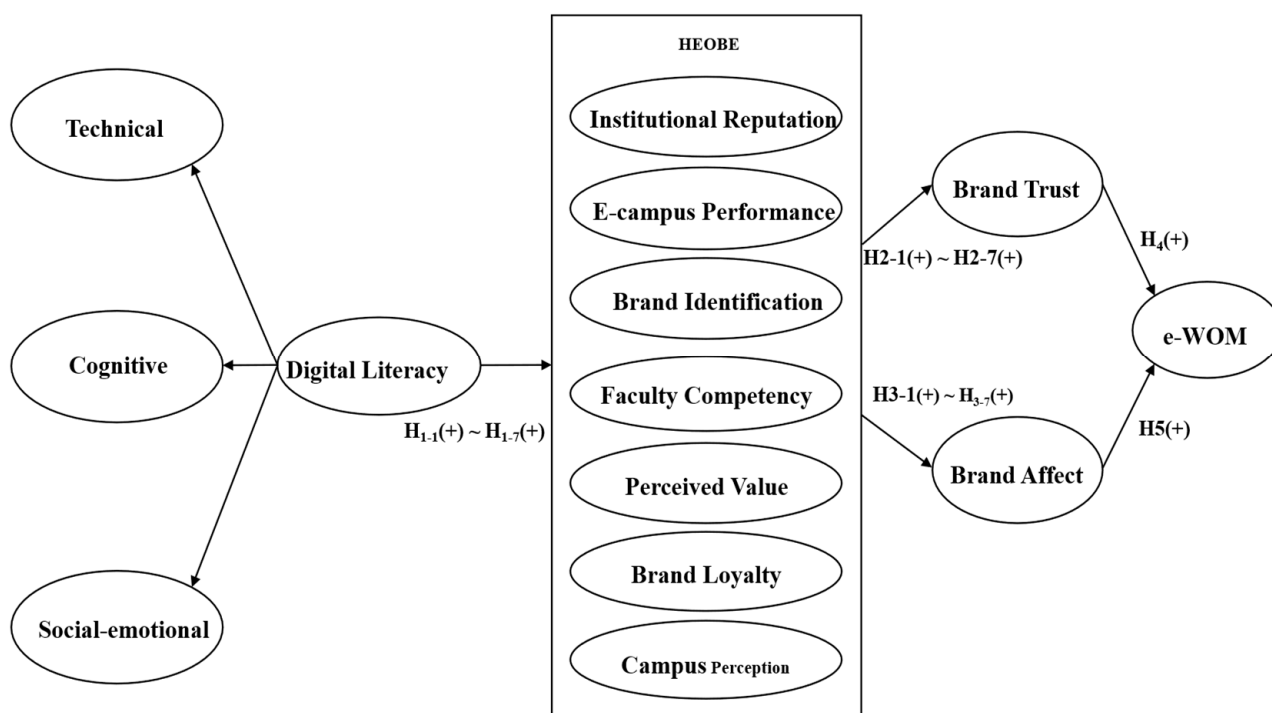
Brand affect refers to the positive emotional responses elicited by a brand, such as happiness, pleasure, and affection [26,54]. In the higher education context, students who develop positive emotional connections with a university are more likely to become supportive of the institution and share their experiences with others, thereby generating word-of-mouth effects. Electronic word of mouth (eWOM) refers to positive or negative brand-related information disseminated through internet-based platforms, including online reviews, recommendations, and social media interactions [11,58].

Students who experience enthusiasm and affection toward their university are more likely to share favorable experiences through social media and online review platforms, thereby creating positive eWOM. Previous studies have suggested that consumers with strong emotional attachment to a brand are more likely to engage in word-of-mouth behaviors [59]. The scholars argue that brand love represents a deep emotional connection with a brand, leading to stronger loyalty and favorable word-of-mouth recommendations [59]. Similarly, ref. [60] defines brand love as the emotional attachment developed by satisfied consumers toward a specific brand, while [61] further indicates that such emotions include passion, attachment, positive feelings, and favorable evaluations. Accordingly, students who possess strong emotional attachment to a university are more likely to share positive experiences, participate in online discussions, and recommend the institution to others. Therefore, brand affect can be considered an important antecedent of eWOM.

In summary, brand affect is positively associated with electronic word of mouth. The stronger students' emotional attachment to a university, the more likely they are to share positive experiences and promote the institution through online platforms. Accordingly, this study proposes the following hypothesis:

### H5. Brand affect is positively associated with electronic word of mouth.

The conceptual model of this study is developed based on the preceding literature review and hypothesis development. The overall research framework is presented in Figure 1.



**Figure 1.** The Conceptual Model.

## 3. Methodology

### 3.1. Population and Sample

The target population comprised current university students in Taiwan and individuals who had graduated from Taiwanese universities within the previous five years. Participants were enrolled in or had completed bachelor's, master's, or doctoral programs. This sampling frame is theoretically appropriate for the present study because these participants have direct or recent experience with university websites, online learning platforms, social media communication, and other digital institutional touchpoints. Such experiences enable them to evaluate university online brand equity, brand trust, brand affect, and electronic word of mouth (e-WOM) in a meaningful manner. Taiwan therefore provides a relevant empirical context for examining how digital literacy influences higher education online brand-related outcomes in a digitally mediated educational environment.

A non-probability convenience sampling approach was utilized. A total of 740 questionnaires were returned. To ensure high data quality, rigorous screening procedures were implemented: questionnaires were identified as invalid and removed if they exhibited (1) straight-lining responses (defined as zero variance across consecutive item batteries), (2) excessive missing data (exceeding 10% of total items), or (3) inconsistent responses on paired reverse-coded verification items. A total of 95 problematic questionnaires were excluded based on these criteria, yielding a final analytical sample of 645 valid responses. This represents a usable response rate of 87.16% (645 valid responses out of 740 returned questionnaires). The sample encompassed students and recent graduates from more than 15 higher education institutions across northern, central, and southern Taiwan, covering both comprehensive public universities and private institutions across diverse disciplines (e.g., business, humanities, engineering, and social sciences). In terms

of sample size adequacy, structural equation modeling (SEM) generally recommends a minimum sample size of 200 or a ratio of at least 5–10 observations per estimated parameter. Our final sample of 645 valid responses substantially exceeds these conventional thresholds and is consistent with prior studies on digital literacy and online brand equity in higher education. Given the complexity of our model, this sample size helps ensure stable parameter estimates, adequate statistical power, and reliable fit indices.

Nevertheless, because the study used convenience sampling, the sample should not be regarded as fully representative of all university students or recent graduates in Taiwan. Although the population of Taiwanese university students can be considered finite and probability sampling would be preferable in future research, practical constraints related to time, resources, and access to a comprehensive sampling frame led us to adopt a non-probability convenience sampling approach in this study. Given that respondents were recruited through social media platforms such as LINE, Facebook, and Instagram, the sample may overrepresent individuals who are more active online, more comfortable with digital technologies, or more interested in university-related online content. These characteristics could be associated with higher levels of digital literacy or more favorable perceptions of online brand equity, potentially limiting the generalizability of the findings to less digitally engaged student populations.

### 3.2. Research Instruments

This study adopted a quantitative survey approach to investigate the relationships among Digital Literacy (DL), Institutional Reputation (IR), E-campus Performance (EP), Brand Identification (BI), Faculty Competency (FC), Perceived Value (PV), Brand Loyalty (BL), Campus Perception (CP), Brand Trust (BT), Brand Affect (BA), and electronic word of mouth (e-WOM, EW). Measurement items for each construct were adapted from well-established scales validated in previous studies, with minor modifications to ensure their suitability for the higher education context. The sources of the measurement items are summarized in Table 1. The primary objective of this study was to capture students' perceptions and evaluations of university brand selection. All constructs were measured using a seven-point Likert scale ranging from 1 ("strongly disagree") to 7 ("strongly agree"), with higher scores indicating stronger agreement with the corresponding statements. The survey was administered in Traditional Chinese to ensure that participants accurately understood all questions. The measurement scales were adapted from established English literature (Table 1) and translated into Chinese using a standard two-way translation and back-translation procedure by bilingual researchers to ensure linguistic and semantic equivalence. An expert panel consisting of three academic professors in educational technology and electronic commerce reviewed the questionnaire for face and content validity. Furthermore, a pilot study (N = 30) was conducted to ensure clarity and resolve semantic ambiguities before large-scale distribution. The full wording of all measurement items (both English and Chinese) is provided in Appendix A (Table A1).

**Table 1.** Sources of Measurement Items.

| Construct        | Number of Items  | Source |
|------------------|------------------|--------|
| Digital Literacy | Technical        | [6]    |
|                  | Cognitive        | [62]   |
|                  | Social-emotional |        |

**Table 1.** *Cont.*

| Construct                | Number of Items | Source |
|--------------------------|-----------------|--------|
| Institutional Reputation | 3               | [9]    |
| E-campus Performance     | 3               |        |
| Brand Identification     | 3               |        |
| Faculty Competency       | 3               |        |
| Perceived Value          | 3               |        |
| Brand Loyalty            | 3               |        |
| Campus Perception        | 2               | [26]   |
| Brand Trust              | 3               |        |
| Brand Affect             | 2               |        |
| e-WOM                    | 2               | [63]   |

### 3.3. Data Collection

Respondents were recruited through online channels and social media platforms, including LINE, Facebook, and Instagram. This recruitment strategy is consistent with the digital consumption context examined in this study, which focuses on participants' digital literacy, higher education online brand equity (HEOBE), brand trust, brand affect, and electronic word of mouth (e-WOM). Before statistical analysis, all collected responses were systematically screened to ensure data quality.

### 3.4. Data Analysis

Descriptive statistics were conducted using respondents' demographic information, including gender, age, and educational level, to summarize the sample profile and examine the distribution of the study variables. The results of these analyses are presented in Section 4.1 (Sample Characteristics).

Reliability and validity were assessed to evaluate the quality of the measurement instrument. Reliability was examined using factor loadings [64], Cronbach's alpha [65], and composite reliability (CR) [66]. Validity was assessed through convergent validity and discriminant validity. Convergent validity was evaluated using factor loadings, t-values, and average variance extracted (AVE) [67], whereas discriminant validity was assessed by comparing the square root of AVE with inter-construct correlations [59] and by examining chi-square difference analysis [67].

Data were analyzed using SPSS AMOS 20.0. Confirmatory factor analysis (CFA) was first performed to assess the measurement model fit, followed by structural equation modeling (SEM) to test the hypothesized relationships among constructs and evaluate the overall model fit.

### 3.5. Common Method Variance

Given that all variables were collected from the same respondents using self-report questionnaires, common method variance (CMV) may be a potential concern. To examine this issue, we employed Harman's single-factor test using confirmatory factor analysis (CFA). Specifically, we compared the model fit of a single-factor model, in which all measurement items loaded on one common factor, with our theoretical multi-factor model. The single-factor model demonstrated poor fit ( $\chi^2/\text{df} = 11.533$ , GFI = 0.613, AGFI = 0.559, IFI = 0.695, CFI = 0.694, RMSEA = 0.128), whereas the theoretical multi-factor model exhibited acceptable fit ( $\chi^2/\text{df} = 2.185$ , GFI = 0.918, AGFI = 0.895, IFI = 0.970, CFI = 0.969, RMSEA = 0.043). The substantially better fit of the multi-factor model provides evidence

that the relationships among constructs are not primarily attributable to common method variance, suggesting that CMV is unlikely to be a serious concern in this study.

## 4. Results

### 4.1. Sample Characteristics

The demographic characteristics of the 645 valid respondents were examined before the main analysis. Female respondents constituted 67.91% of the sample ( $n = 438$ ), whereas male respondents accounted for 32.09% ( $n = 207$ ). Regarding age, most respondents were between 18 and 25 years old ( $n = 476$ , 73.80%), followed by those aged 26–30 years ( $n = 117$ , 18.14%). Respondents aged 31 years or older accounted for 8.06% of the sample. With respect to educational status, 269 respondents were undergraduate students (41.71%), 180 were university graduates (27.91%), 118 were master's students (18.29%), 63 were master's graduates (9.77%), 12 were doctoral students (1.86%), and 3 were doctoral graduates (0.46%).

Overall, the sample consisted primarily of young respondents and current university students, which is broadly consistent with the target context of this study, namely, the examination of students' perceptions and behaviors toward university brands in digital environments. However, the demographic distribution was not fully balanced across categories. Therefore, the present study focused on the overall structural relationships rather than comparing path coefficients across demographic subgroups. The absence of subgroup comparisons should be considered a limitation, and future research may further examine potential differences across demographic and educational groups using larger and more balanced samples.

### 4.2. Measurement Model Analysis

Prior to conducting the confirmatory factor analysis (CFA) and structural equation modeling (SEM), we examined the univariate normality of all measurement items by inspecting their skewness and kurtosis values. As shown in Table 2, skewness values ranged from  $-0.765$  to  $-0.056$ , and kurtosis values ranged from  $-0.898$  to  $0.569$ . All skewness values were below 1.0 and all kurtosis values were below 3.0, which are within the commonly recommended thresholds for normality in structural equation modeling. These results indicate that the assumption of univariate normality was reasonably met, supporting the appropriateness of the data for subsequent CFA and SEM analyses.

**Table 2.** Descriptive Statistics and Normality Indices for All Measurement Items.

| Constructs               | Items | N   | Mean | SD    | Skewness | Kurtosis |
|--------------------------|-------|-----|------|-------|----------|----------|
| Digital Literacy         | T1    | 645 | 4.87 | 1.352 | −0.409   | −0.120   |
|                          | T2    | 645 | 4.46 | 1.400 | −0.254   | −0.262   |
|                          | C1    | 645 | 5.20 | 1.155 | −0.323   | −0.184   |
|                          | C2    | 645 | 5.37 | 1.132 | −0.429   | 0.085    |
|                          | SE1   | 645 | 5.42 | 1.253 | −0.666   | 0.234    |
|                          | SE2   | 645 | 5.54 | 1.190 | −0.765   | 0.569    |
| Institutional Reputation | IR1   | 645 | 4.48 | 1.363 | −0.289   | −0.188   |
|                          | IR2   | 645 | 4.57 | 1.325 | −0.356   | 0.093    |
|                          | IR3   | 645 | 4.57 | 1.355 | −0.358   | −0.020   |
| E-campus Performance     | EP1   | 645 | 5.23 | 1.196 | −0.552   | 0.537    |
|                          | EP2   | 645 | 5.33 | 1.202 | −0.520   | 0.116    |
|                          | EP3   | 645 | 5.28 | 1.183 | −0.530   | 0.195    |

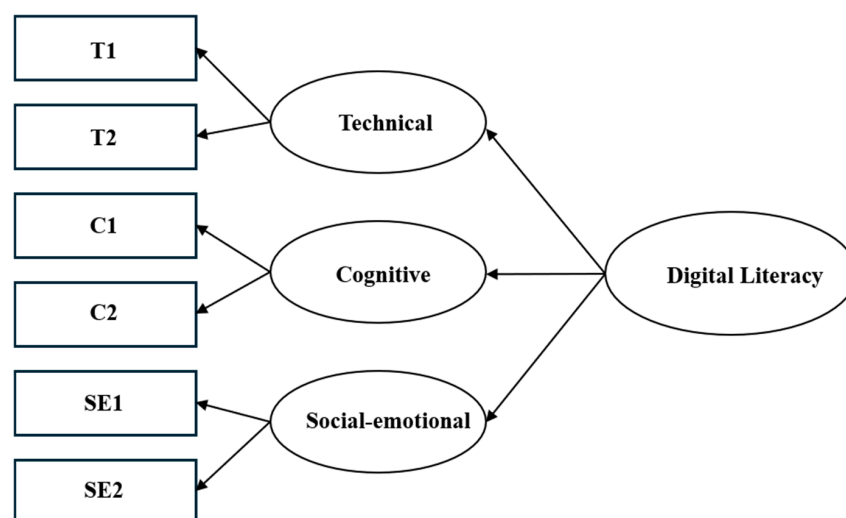
**Table 2.** *Cont.*

| Constructs           | Items | N   | Mean | SD    | Skewness | Kurtosis |
|----------------------|-------|-----|------|-------|----------|----------|
| Brand Identification | BI1   | 645 | 5.07 | 1.443 | −0.617   | −0.025   |
|                      | BI2   | 645 | 4.55 | 1.653 | −0.388   | −0.490   |
|                      | BI3   | 645 | 4.61 | 1.545 | −0.427   | −0.235   |
| Faculty Competency   | FC1   | 645 | 4.72 | 1.287 | −0.489   | 0.177    |
|                      | FC2   | 645 | 4.91 | 1.254 | −0.454   | 0.134    |
|                      | FC3   | 645 | 5.22 | 1.185 | −0.591   | 0.302    |
| Perceived Value      | PV1   | 645 | 4.74 | 1.516 | −0.487   | −0.278   |
|                      | PV2   | 645 | 4.28 | 1.573 | −0.211   | −0.531   |
|                      | PV3   | 645 | 4.45 | 1.517 | −0.282   | −0.521   |
| Brand Loyalty        | BL1   | 645 | 4.59 | 1.756 | −0.443   | −0.655   |
|                      | BL2   | 645 | 4.73 | 1.787 | −0.536   | −0.638   |
|                      | BL3   | 645 | 4.56 | 1.727 | −0.368   | −0.651   |
| Campus Perception    | CP1   | 645 | 5.09 | 1.388 | −0.572   | −0.105   |
|                      | CP2   | 645 | 4.83 | 1.362 | −0.327   | −0.246   |
| Brand Trust          | BT1   | 645 | 5.28 | 1.149 | −0.295   | −0.355   |
|                      | BT2   | 645 | 5.30 | 1.232 | −0.491   | −0.096   |
|                      | BT3   | 645 | 5.27 | 1.241 | −0.542   | −0.005   |
| Brand Affect         | BA1   | 645 | 5.12 | 1.288 | −0.464   | −0.122   |
|                      | BA2   | 645 | 5.13 | 1.350 | −0.547   | 0.079    |
| e-WOM                | EW1   | 645 | 3.96 | 1.721 | −0.077   | −0.783   |
|                      | EW2   | 645 | 3.97 | 1.763 | −0.056   | −0.898   |

Note: Technical (T), Cognitive (C), Social–Emotional (S).

#### 4.2.1. Second-Order Confirmatory Factor Analysis (Second-Order CFA)

Second-order confirmatory factor analysis assumes that the first-order latent factors share a common, higher-order latent factor. In this study, the second-order latent construct is explained by three first-order factors; specifically, the three first-order latent factors (technical, cognitive, and socio-emotional dimensions) are collectively influenced by the overarching factor, namely Digital Literacy. Figure 2 presents the second-order CFA framework for Digital Literacy in this study.

**Figure 2.** Second-Order CFA Framework.

As shown in Table 3, the results of the second-order confirmatory factor analysis (CFA) indicated that all model fit indices met the recommended thresholds [64], demonstrating acceptable overall model fit. Regarding measurement quality, all standardized factor loadings exceeded 0.70, supporting indicator reliability. In addition, Cronbach's alpha coefficients were above 0.70 [65], composite reliability (CR) values exceeded 0.60 [66], and average variance extracted (AVE) values were greater than 0.50 [67], indicating satisfactory internal consistency reliability and convergent validity.

**Table 3.** Second-Order CFA Test Results.

| Construct        | Dimension/First-Order Factor | Items | Factor Loading | Cronbach's $\alpha$ | CR     | AVE    |
|------------------|------------------------------|-------|----------------|---------------------|--------|--------|
| Digital Literacy | Technical                    | T1    | 0.865          | 0.843               | 0.8435 | 0.7294 |
|                  |                              | T2    | 0.843          |                     |        |        |
|                  | Cognitive                    | C1    | 0.844          | 0.819               | 0.8193 | 0.6940 |
|                  |                              | C2    | 0.822          |                     |        |        |
|                  | Social-emotional             | SE1   | 0.842          | 0.852               | 0.8534 | 0.7443 |
|                  |                              | SE2   | 0.883          |                     |        |        |

Model fit: Chi-square/df = 2.349, GFI = 0.993, AGFI = 0.974, RMSEA = 0.046, SRMR = 0.0129, NFI = 0.993, RFI = 0.983, IFI = 0.996, CFI = 0.996.

Taken together, these findings provide strong empirical support for the reliability and validity of the measurement model. Furthermore, the results confirm that Digital Literacy is appropriately conceptualized as a second-order construct comprising three first-order dimensions: Technical Literacy, Cognitive Literacy, and Socio-Emotional Literacy.

#### 4.2.2. Confirmatory Factor Analysis (CFA)

The confirmatory factor analysis (CFA) results indicated that all model fit indices met the recommended criteria established by [64]. Specifically,  $\chi^2/df = 2.185$  ( $<5.00$ ), CFI = 0.969 ( $>0.90$ ), TLI = 0.963 ( $>0.90$ ), RMSEA = 0.043 ( $<0.08$ ), and SRMR = 0.033 ( $<0.08$ ), indicating acceptable model fit. These results provide strong evidence of satisfactory model fit and support the adequacy of the proposed measurement model.

#### 4.3. Reliability Analysis

Reliability was assessed using factor loadings, Cronbach's alpha, and composite reliability (CR). All factor loadings exceeded 0.70, supporting indicator reliability [64]. Cronbach's alpha values were above 0.70, and all CR values exceeded 0.60, confirming satisfactory internal consistency [65,66]. Detailed results are presented in Table 4.

**Table 4.** Analysis of Reliability and Convergent Validity.

| Constructs               | Items | Factor Loading | t-Value | Cronbach's $\alpha$ | CR     | AVE    |
|--------------------------|-------|----------------|---------|---------------------|--------|--------|
| Digital Literacy         | T     | 0.769 ***      | 16.978  | 0.871               | 0.8706 | 0.6963 |
|                          | C     | 0.996 ***      | 21.771  |                     |        |        |
|                          | SE    | 0.711 ***      | 16.391  |                     |        |        |
| Institutional Reputation | IR1   | 0.896 ***      | 28.796  | 0.905               | 0.9077 | 0.7667 |
|                          | IR2   | 0.910 ***      | 29.533  |                     |        |        |
|                          | IR3   | 0.818 ***      | 24.908  |                     |        |        |
| E-campus Performance     | EP1   | 0.772 ***      | 22.352  | 0.859               | 0.8650 | 0.6820 |
|                          | EP2   | 0.800 ***      | 23.526  |                     |        |        |
|                          | EP3   | 0.900 ***      | 28.030  |                     |        |        |
| Brand Identification     | BI1   | 0.830 ***      | 23.940  | 0.812               | 0.8161 | 0.5997 |
|                          | BI2   | 0.649 ***      | 17.309  |                     |        |        |
|                          | BI3   | 0.830 ***      | 23.944  |                     |        |        |

**Table 4.** *Cont.*

| Constructs         | Items | Factor Loading | t-Value | Cronbach's $\alpha$ | CR     | AVE    |
|--------------------|-------|----------------|---------|---------------------|--------|--------|
| Faculty Competency | FC1   | 0.805 ***      | 23.927  | 0.866               | 0.8718 | 0.6946 |
|                    | FC2   | 0.900 ***      | 28.367  |                     |        |        |
|                    | FC3   | 0.791 ***      | 23.305  |                     |        |        |
| Perceived Value    | PV1   | 0.853 ***      | 26.567  | 0.927               | 0.9268 | 0.8087 |
|                    | PV2   | 0.913 ***      | 29.634  |                     |        |        |
|                    | PV3   | 0.930 ***      | 30.607  |                     |        |        |
| Brand Loyalty      | BL1   | 0.849 ***      | 26.347  | 0.894               | 0.8902 | 0.7315 |
|                    | BL2   | 0.762 ***      | 22.443  |                     |        |        |
|                    | BL3   | 0.945 ***      | 31.422  |                     |        |        |
| Campus Perception  | CP1   | 0.842 ***      | 24.771  | 0.832               | 0.8314 | 0.7115 |
|                    | CP2   | 0.845 ***      | 24.911  |                     |        |        |
| Brand Trust        | BT1   | 0.860 ***      | 26.938  | 0.915               | 0.9168 | 0.7862 |
|                    | BT2   | 0.920 ***      | 30.131  |                     |        |        |
|                    | BT3   | 0.879 ***      | 27.924  |                     |        |        |
| Brand Affect       | BA1   | 0.936 ***      | 30.019  | 0.848               | 0.8547 | 0.7477 |
|                    | BA2   | 0.787 ***      | 23.274  |                     |        |        |
| e-WOM              | EW1   | 0.902 ***      | 28.741  | 0.930               | 0.9312 | 0.8715 |
|                    | EW2   | 0.964 ***      | 32.063  |                     |        |        |

Note: \*\*\*  $p$ -value < 0.001, Technical (T), Cognitive (C), Social–Emotional (SE).

#### 4.4. Validity Analysis

Validity analysis assesses the effectiveness and accuracy of measurement results, evaluating whether the data precisely and correctly measure the constructs under investigation. This study employed two validity indicators: convergent validity and discriminant validity.

##### 4.4.1. Convergent Validity

Convergent validity measures the degree of similarity among items within the same construct. Higher values indicate stronger correlations, demonstrating convergent effects. Convergent validity is assessed using the following criteria: factor loadings must exceed 0.60 [64], and t-values must exceed 1.96. A t-value greater than 1.96 indicates statistical significance, greater than 2.58 indicates high significance, and greater than 3.29 indicates very high significance. Average Variance Extracted (AVE) represents the extent to which measurement items explain the variance of the latent construct. AVE values must exceed 0.50 [67]. When both criteria are met, convergent validity is established. In this study, all factor loadings, t-values, and AVE values met the above criteria, demonstrating convergent validity of the measurement framework. Detailed results are presented in Table 4.

##### 4.4.2. Discriminant Validity

Discriminant validity assesses whether different constructs are independent and distinct from one another, confirming that items across constructs are sufficiently different. This study employed two methods to evaluate discriminant validity: chi-square difference analysis, and comparison of AVE values with squared inter-construct correlations.

First, chi-square difference analysis was conducted by subtracting the unrestricted model chi-square value from the restricted model chi-square value. The difference must exceed 3.84. As shown in Table 4, the triangular values above the diagonal represent chi-square difference values, all exceeding 3.84, indicating that constructs are not perfectly correlated and are distinct from one another [67]. Second, discriminant validity was as-

sessed by comparing each construct's square root of AVE with inter-construct correlations between constructs. When a construct's square root of AVE exceeds the correlation with other constructs, it indicates clear differentiation between constructs, demonstrating discriminant validity [67]. As shown in Table 5, all values in the triangular section below the diagonal meet this criterion.

**Table 5.** Chi-Square Difference, AVE, and Squared Inter-Construct Correlations Analysis.

|    | DL     | IR     | EP      | BI      | FC      | PV      | BL      | CP      | BT      | BA      | EW      |
|----|--------|--------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| DL | 0.8344 | 491.78 | 326.158 | 535.854 | 443.131 | 546.573 | 680.207 | 350.718 | 498.343 | 513.590 | 523.068 |
| IR | 0.443  | 0.8756 | 537.060 | 351.888 | 282.665 | 820.082 | 476.172 | 202.020 | 431.955 | 207.925 | 590.398 |
| EP | 0.636  | 0.619  | 0.8258  | 480.502 | 410.870 | 693.546 | 650.104 | 238.904 | 629.180 | 372.390 | 743.936 |
| BI | 0.343  | 0.672  | 0.517   | 0.7744  | 454.746 | 524.594 | 424.592 | 277.114 | 414.466 | 275.996 | 445.539 |
| FC | 0.516  | 0.792  | 0.673   | 0.550   | 0.8334  | 691.718 | 549.121 | 196.049 | 519.531 | 294.818 | 728.358 |
| PV | 0.359  | 0.632  | 0.506   | 0.492   | 0.534   | 0.8993  | 717.640 | 339.207 | 987.510 | 381.665 | 683.663 |
| BL | 0.335  | 0.763  | 0.529   | 0.608   | 0.641   | 0.664   | 0.8553  | 262.480 | 574.864 | 231.258 | 421.025 |
| CP | 0.465  | 0.730  | 0.665   | 0.598   | 0.724   | 0.517   | 0.649   | 0.8435  | 237.331 | 146.295 | 319.498 |
| BT | 0.439  | 0.792  | 0.549   | 0.617   | 0.655   | 0.568   | 0.736   | 0.684   | 0.8867  | 121.583 | 662.766 |
| BA | 0.391  | 0.779  | 0.558   | 0.664   | 0.662   | 0.568   | 0.758   | 0.769   | 0.859   | 0.8647  | 352.818 |
| EW | 0.383  | 0.670  | 0.503   | 0.583   | 0.520   | 0.595   | 0.786   | 0.557   | −0.604  | 0.608   | 0.9335  |

Note. The diagonal represents the square root of AVE. Correlations are shown below the diagonal, and chi-square difference values are displayed above the diagonal.

#### 4.4.3. Multicollinearity Diagnostics

This study also assessed potential multicollinearity among all constructs using multiple diagnostics. Inter-construct correlations ranged from  $-0.604$  to  $0.859$ , with the highest correlation observed between Brand Trust and Brand Affect ( $r = 0.859$ ). Notably, Brand Trust and e-WOM exhibited a negative bivariate correlation ( $r = -0.604$ ), which is consistent with the structural path estimate. All other correlations were below  $0.80$ , within expected theoretical ranges [19]. This study further computed Variance Inflation Factors (VIFs) for the HEOBE dimensions predicting Brand Trust and Brand Affect, which ranged from  $1.577$  to  $3.156$ , well below the conservative threshold of  $5.0$  [68]. Tolerance values exceeded  $0.20$ , and standard errors for these paths ranged from  $0.025$  to  $0.054$ , indicating stable estimation. These diagnostics collectively suggest that multicollinearity is not a concern in our structural model.

#### 4.5. Structural Model Analysis

Structural equation modeling (SEM) was conducted using SPSS AMOS 20.0 to examine the hypothesized relationships among the constructs. The significance of the structural path coefficients was assessed to test the proposed hypotheses and evaluate the research model.

The model fit results indicated an acceptable fit to the data. Specifically,  $\chi^2/df = 3.951$  ( $<5.00$ ), CFI =  $0.918$  ( $>0.90$ ), TLI =  $0.908$  ( $>0.90$ ), RMSEA =  $0.068$  ( $<0.08$ ), and SRMR =  $0.066$  ( $<0.08$ ). All fit indices met the recommended thresholds suggested by [56], supporting the adequacy of the structural model.

Structural equation modeling (SEM) was conducted using SPSS AMOS 20.0 to test the path coefficients and hypothesized structural associations among constructs. Results are shown in Table 6.

**Table 6.** Structural Model Assessment Results.

| Hypothesis       | Path  | $\beta$   | t-Value | Result    |
|------------------|-------|-----------|---------|-----------|
| H <sub>1-1</sub> | DL→IR | 0.894 *** | 9.878   | Supported |
| H <sub>1-2</sub> | DL→EP | 0.761 *** | 9.102   | Supported |
| H <sub>1-3</sub> | DL→BI | 0.706 *** | 9.006   | Supported |
| H <sub>1-4</sub> | DL→FC | 0.850 *** | 9.429   | Supported |
| H <sub>1-5</sub> | DL→PV | 0.685 *** | 9.095   | Supported |
| H <sub>1-6</sub> | DL→BL | 0.791 *** | 9.624   | Supported |
| H <sub>1-7</sub> | DL→CP | 0.828 *** | 9.447   | Supported |
| H <sub>2-1</sub> | IR→BT | 0.437 *** | 7.417   | Supported |
| H <sub>2-2</sub> | EP→BT | −0.050    | −1.175  | Rejected  |
| H <sub>2-3</sub> | BI→BT | 0.102 *   | 2.542   | Supported |
| H <sub>2-4</sub> | FC→BT | −0.071    | −1.372  | Rejected  |
| H <sub>2-5</sub> | PV→BT | −0.009    | −0.257  | Rejected  |
| H <sub>2-6</sub> | BL→BT | 0.292 *** | 6.610   | Supported |
| H <sub>2-7</sub> | CP→BT | 0.240 *** | 4.493   | Supported |
| H <sub>3-1</sub> | IR→BA | 0.281 *** | 5.745   | Supported |
| H <sub>3-2</sub> | EP→BA | −0.044    | −1.239  | Rejected  |
| H <sub>3-3</sub> | BI→BA | 0.182 *** | 5.331   | Supported |
| H <sub>3-4</sub> | FC→BA | −0.114 ** | −2.594  | Rejected  |
| H <sub>3-5</sub> | PV→BA | 0.013     | 0.424   | Rejected  |
| H <sub>3-6</sub> | BL→BA | 0.463 *** | 11.929  | Supported |
| H <sub>3-7</sub> | CP→BA | 0.336 *** | 7.162   | Supported |
| H <sub>4</sub>   | BT→EW | −0.136 *  | −2.176  | Rejected  |
| H <sub>5</sub>   | BA→EW | 0.883 *** | 12.959  | Supported |

R<sup>2</sup> values: IR = 0.799, EP = 0.579, BI = 0.498, FC = 0.722, PV = 0.470, BL = 0.626, CP = 0.686, BT = 0.717, BA = 0.967, EW = 0.601. \*\*\*  $p$ -value < 0.001; \*\*  $p$ -value < 0.01, \*  $p$ -value < 0.05.

Regarding the relationship between digital literacy and HEOBE, all seven hypotheses were supported. Digital literacy showed a significant positive association with institutional reputation ( $\beta = 0.894$ ,  $p < 0.001$ ), e-campus performance ( $\beta = 0.761$ ,  $p < 0.001$ ), brand identification ( $\beta = 0.706$ ,  $p < 0.001$ ), faculty competency ( $\beta = 0.850$ ,  $p < 0.001$ ), perceived value ( $\beta = 0.685$ ,  $p < 0.001$ ), brand loyalty ( $\beta = 0.791$ ,  $p < 0.001$ ), and campus perception ( $\beta = 0.828$ ,  $p < 0.001$ ).

Regarding the relationship between HEOBE and brand trust, four of seven hypotheses were supported. Institutional reputation ( $\beta = 0.437$ ,  $p < 0.001$ ), brand identification ( $\beta = 0.102$ ,  $p < 0.05$ ), brand loyalty ( $\beta = 0.292$ ,  $p < 0.001$ ), and campus perception ( $\beta = 0.240$ ,  $p < 0.001$ ) showed a significant positive association with brand trust. E-campus performance ( $\beta = -0.050$ , n.s.), faculty competency ( $\beta = -0.071$ , n.s.), and perceived value ( $\beta = -0.009$ , n.s.) did not show significant effects.

Regarding the relationship between HEOBE and brand affect, four of seven hypotheses were supported. Institutional reputation ( $\beta = 0.281$ ,  $p < 0.001$ ), brand identification ( $\beta = 0.182$ ,  $p < 0.001$ ), brand loyalty ( $\beta = 0.463$ ,  $p < 0.001$ ), and campus perception ( $\beta = 0.336$ ,  $p < 0.001$ ) showed a significant positive association with brand affect. E-campus performance ( $\beta = -0.044$ , n.s.), perceived value ( $\beta = 0.013$ , n.s.), and faculty competency ( $\beta = -0.114$ ,  $p < 0.01$ , negative effect) did not support the hypothesized positive relationships.

Brand affect showed a significant positive association with e-WOM ( $\beta = 0.883$ ,  $p < 0.001$ ), supporting H5. However, H4 was not supported; brand trust showed a significant negative association with e-WOM ( $\beta = -0.136$ ,  $p < 0.05$ ), contrary to the hypothesized positive relationship.

Overall, 16 of 23 hypotheses (69.6%) were supported. Digital literacy was confirmed as a foundational construct associated with all first-order dimensions. Brand loyalty was the strongest predictor of both brand trust ( $\beta = 0.292$ ) and brand affect ( $\beta = 0.463$ ). Brand affect was the strongest predictor of e-WOM ( $\beta = 0.883$ ), while brand trust showed an unexpected negative effect.

## 5. Conclusions

### 5.1. Discussion

This study contributes to the electronic commerce and higher education branding literature by incorporating digital literacy into the higher education online brand equity (HEOBE) framework and examining its effects on brand trust, brand affect, and electronic word of mouth (eWOM). This study explicitly frames AI as the broader macro-context of contemporary higher education rather than a directly measured variable. Although the empirical model assesses foundational digital literacy rather than AI literacy per se, it examines these digital skills within the context of AI-mediated educational environments, where critical evaluation of digital information and responsible use of digital resources. This positioning allows us to examine how foundational digital competencies shape students' perceptions of institutional brands in AI-integrated learning contexts.

First, digital literacy is significantly associated with all HEOBE dimensions. This suggests that users' ability to navigate digital environments is associated with more favorable evaluations of online brand value. Digitally literate students better interact with institutional platforms and interpret brand information, leading to more favorable perceptions of reputation, identity, and experience. Thus, digital literacy functions as both a technical capability and a cognitive resource in online brand equity formation.

Second, HEOBE dimensions showed heterogeneous effects on brand trust. Institutional reputation, brand identification, brand loyalty, and campus perception significantly enhanced trust, indicating that trust formation is grounded in image consistency, identity congruence, and accumulated experiences. In contrast, online campus performance, faculty competency, and perceived value were insignificant, implying that functional attributes alone may not foster trust unless translated into relational experiences. Regarding the negative effect of faculty competency on brand affect, we offer two possible explanations: first, excessive emphasis on faculty qualifications may create psychological distance, reducing students' emotional connection to the institution; second, in the AI-driven educational era, students may prioritize digital learning experiences and peer interactions over faculty-centered attributes, such that strong perceptions of competence may reflect formal, performance-oriented relationships rather than positive brand affect.

Third, a similar pattern emerged for brand affect. Reputation, identification, loyalty, and campus perception positively influenced emotional attachment, whereas faculty quality showed a negative effect. This suggests that excessive interaction may reduce students' autonomy and weaken emotional attachment. Additionally, the exceptionally high explained variance for Brand Affect ( $R^2 = 0.967$ ) highlights that the comprehensive dimensions of HEOBE collectively capture students' emotional attachment to their institution. Although multicollinearity tests ( $VIF < 3.2$ ) confirmed statistical independence among predictors, this high  $R^2$  may also reflect the close conceptual affinity and mutual reinforcement between relational constructs (such as brand loyalty and institutional identification) and affective resonance in higher education contexts.

Finally, brand trust and affect demonstrated contrasting relationships with e-WOM. Both bivariate correlation analysis ( $r = -0.604$ ,  $p < 0.001$ ) and structural equation modeling ( $\beta = -0.136$ ,  $p < 0.05$ ) consistently indicate an unexpected negative association between brand trust and e-WOM, whereas brand affect was strongly and positively associated with e-WOM ( $\beta = 0.883$ ,  $p < 0.001$ ). Emotional attachment thus appears to be the dominant driver of online recommendation behavior compared to cognitive trust, highlighting the critical role of affective responses in digital engagement. The negative trust–e-WOM association suggests that high cognitive trust may coincide with passive loyalty or trust-induced complacency in digitally mediated contexts, where students who strongly trust their university feel secure and perceive less urgency to advocate online. This contrasts with brand affect, which generates emotional arousal and motivates active sharing. Thus, affective attachment drives advocacy more than cognitive trust, aligning with evidence that trust reduces perceived risk and information-sharing motivations, whereas emotional commitment drives proactive e-WOM. Nonetheless, it should be noted that the underlying mechanisms proposed for these unexpected findings (i.e., the negative associations regarding faculty competency and brand affect, as well as brand trust and e-WOM) remain exploratory and conjectural. These interpretations should be regarded as tentative hypotheses requiring further empirical verification.

### 5.2. Theoretical Implications

This study makes several important theoretical contributions to the literature on electronic commerce and higher education branding. In terms of theoretical contributions, this study expands rather than replaces traditional branding theory. By situating brand equity, brand trust, and brand affect in AI-mediated higher education environments, it highlights the critical role of students' digital literacy in interpreting institutional brand signals, shaping HEOBE, and driving downstream outcomes. Contextualizing foundational digital literacy within established brand equity frameworks provides a more nuanced explanation of consumer responses in AI-driven digital contexts and contributes substantively to branding research.

First, this study extends the HEOBE framework by incorporating digital literacy as a key antecedent in AI-mediated educational contexts. Grounded in the Higher Education Online Brand Equity (HEOBE) framework proposed by [9], we demonstrate that digital literacy in the AI-driven era functions not merely as a technical skill but as a cognitive and social resource that shapes how students perceive, evaluate, and internalize institutional brand value in digital environments. While prior research has examined digital literacy as a general competency [1,6], our findings reveal that digital literacy is significantly and positively associated with all seven HEOBE dimensions ( $\beta = 0.685\text{--}0.894$ ,  $p < 0.001$ ), suggesting that technologically proficient students operating in AI-mediated educational environments are better equipped to navigate AI-augmented resources and derive greater value from institutional brand touchpoints. This extends the HEOBE model by establishing digital literacy as a foundational antecedent and strengthens its applicability in technology-mediated learning contexts.

Second, this study refines the nomological role of HEOBE dimensions in shaping brand trust and brand affect. Our findings reveal that HEOBE dimensions do not uniformly influence brand trust and brand affect. Specifically, institutional reputation, brand identification, brand loyalty, and campus perception significantly enhance both trust and affect, whereas E-campus performance, faculty competency, and perceived value show non-significant or even negative effects. This heterogeneous pattern refines the HEOBE literature by demonstrating that functional attributes (e.g., faculty competency and e-campus performance) alone may not foster trust or emotional attachment unless translated into re-

lational and identity-based experiences. This distinction advances theoretical understanding of how different brand equity dimensions operate in higher education contexts and responds to calls for more nuanced examinations of brand equity antecedents [21,23].

Third, this study distinguishes cognitive trust from affective attachment in explaining e-WOM behaviors. The study establishes an integrative structural framework linking digital literacy, HEOBE, brand trust, brand affect, and e-WOM, revealing that brand affect exerts a stronger positive association with e-WOM than brand trust ( $\beta = 0.883$  vs.  $\beta = -0.136$ ). Notably, brand trust shows an unexpected negative effect on e-WOM, suggesting that high cognitive trust may lead to “passive loyalty” (silent retention) rather than active advocacy in digitally mediated contexts. This finding enriches the e-WOM literature by clarifying the distinct roles of cognitive and affective mechanisms in digital brand interactions and aligns with relationship marketing theory suggesting that emotional commitment, rather than trust alone, drives proactive word-of-mouth behaviors [26,28].

Finally, this study integrates marketing and higher education perspectives on digital brand management in AI-driven ecosystems. By integrating key constructs from marketing (brand equity, trust, affect, and e-WOM) and higher education (digital literacy and AI-mediated learning), this study confirms that traditional marketing concepts remain effective in explaining behavioral outcomes in higher education as a digital service context. However, our findings also reveal boundary conditions: in AI-driven educational ecosystems, emotional engagement and digital competency jointly shape brand interactions more than functional attributes alone. This offers a more comprehensive theoretical perspective on how user capability and emotional engagement jointly shape brand interactions and e-WOM in digital environments and provides a foundation for future research on AI-mediated brand management in educational settings.

### 5.3. Managerial Implications

This study offers several actionable implications for higher education institutions (HEIs) seeking to strengthen their online brand equity and student advocacy in the AI-driven educational era.

First, investing in students’ digital literacy should be treated as a foundational branding strategy in AI-mediated educational contexts. Our results demonstrate that digital literacy is significantly positively linked to all seven HEOBE dimensions ( $\beta = 0.685\text{--}0.894$ ,  $p < 0.001$ ). HEIs should therefore integrate digital literacy modules that address AI-augmented learning tools into core curricula, offer workshops on responsible AI use, and establish AI-integrated learning environments. Technologically proficient students are better equipped to navigate digital brand touchpoints, critically evaluate institutional messages, and perceive higher value in the university’s online presence.

Second, HEIs must prioritize HEOBE dimensions that are most strongly associated with brand trust and affect. Institutional reputation, brand loyalty, and campus perception emerged as the primary predictors of both trust and affect. HEIs should highlight research achievements, global rankings, and societal impact (reputation); foster alumni engagement and student identification programs (loyalty); and showcase campus life, modern facilities, and student experiences through immersive digital content (campus perception). Notably, faculty competency and e-campus performance did not significantly influence trust or affect, suggesting that generic promotional content regarding teaching quality or platform features is less effective than emotional and identity-based appeals.

Third, emotionally engaging campaigns are essential to stimulate positive e-WOM. Brand affect strongly drives e-WOM ( $\beta = 0.883$ ,  $p < 0.001$ ), whereas brand trust exerts a negative effect. This indicates that trust alone tends to foster passive loyalty (“silent retention”), whereas emotional attachment actively motivates advocacy. HEIs should focus on creating shareable, emotionally resonant content—such as student success stories, campus traditions, and community impact narratives—that inspires pride and belonging. Utilizing hashtag campaigns, user-generated content challenges, and alumni storytelling can further amplify positive e-WOM on platforms like Instagram, Facebook, and Dcard.

Fourth, trust-building strategies must be reframed from mere reliability to active advocacy enablement. The negative trust–e-WOM effect suggests that highly trusting students may feel secure but lack the motivation to actively promote the institution. HEIs should complement standard trust-building initiatives (e.g., transparent communication and consistent service delivery) with explicit calls to action, such as referral programs, student ambassador initiatives, or incentives for sharing positive experiences online, thereby transforming passive trust into active endorsement.

Fifth, digital brand strategies should be tailored to distinct student segments. Given that digital literacy serves as a foundational antecedent of HEOBE formation, HEIs need to evaluate students’ digital competency levels and provide tiered support—such as foundational digital skills workshops for incoming students and advanced digital literacy programs focusing on AI-augmented tools for senior students. This ensures that all students can effectively engage with and advocate for the institutional brand within digital environments.

Collectively, these implications emphasize that HEIs must shift from traditional, information-centric branding toward emotionally engaging strategies that leverage AI-mediated digital environments, cultivating both cognitive trust and affective commitment to foster active student advocacy in online spaces.

#### 5.4. Limitations and Future Research Directions

This study has several limitations. First, although the sample of current students and recent alumni from Taiwanese universities is closely aligned with the research context, data were collected using a non-probability convenience sampling approach through social media platforms. This procedure may have introduced selection bias and limits the statistical representativeness of the sample. Individuals who are more active on social media, more familiar with digital technologies, or more interested in university-related online content may have been more likely to participate in the survey. Consequently, the findings should be interpreted primarily within the context of Taiwanese higher education and should not be generalized directly to all student populations or to other national settings. Future research is encouraged to employ probability-based sampling methods and to replicate the proposed model across different countries and types of higher education institutions to examine the robustness and generalizability of the results. Second, this study relies solely on self-report questionnaires, which may introduce response biases or common method variance (CMV). Although Harman’s single-factor test was conducted and indicated acceptable divergence, this diagnostic tool has inherent limitations and cannot entirely eliminate the possibility of CMV. Future research should consider adopting procedural remedies (e.g., temporal separation of measurements or multi-source data) and advanced statistical controls (such as the marker variable technique) to further assess common method bias. In addition, future studies should adopt mixed-method designs incorporating qualitative approaches (e.g., interviews and focus groups) to capture deeper behavioral motivations. Third, the study does not distinguish by institutional attributes (e.g., public vs. private, university size) or include additional predictors. Future research should examine these

differences and incorporate variables such as student satisfaction and engagement. Subgroup analyses comparing current students and alumni could also reveal heterogeneity in path relationships. Fourth, this study did not examine whether the structural relationships differed across demographic or educational subgroups. Although the demographic characteristics of the respondents were reported in detail, the distribution across several categories was uneven, with relatively small numbers of respondents aged 31 years or older and doctoral graduates. Conducting subgroup comparisons under such conditions may produce unstable estimates and unreliable interpretations. Future research should recruit larger and more evenly distributed samples to examine potential differences in the relationships among digital literacy, HEOBE, brand trust, brand affect, and e-WOM across demographic and educational groups. Fifth, although statistical diagnostics indicated that multicollinearity was not an issue, the exceptionally high variance explained for Brand Affect ( $R^2 = 0.967$ ) suggests potential conceptual overlap between relational predictors (e.g., brand loyalty and brand identification) and affective outcomes. Future research is encouraged to adopt experimental designs or alternative scale operationalizations to further refine the conceptual boundaries and empirical distinction between these closely related constructs. Furthermore, while the negative association between brand trust and e-WOM was consistently observed across both bivariate and structural analyses, the theoretical explanations proposed (e.g., passive loyalty and trust-induced complacency) remain tentative in nature. Similarly, the negative association between faculty competency and brand affect warrants cautious interpretation. Future research should employ experimental or qualitative designs to directly test whether high cognitive trust indeed leads to passive retention or whether other unmeasured psychological boundaries mediate these relationships. Finally, while this study establishes an integrative model of digital literacy, HEOBE, brand trust, affect, and e-WOM, emerging digital contexts (e.g., online learning, virtual reality courses, AI-mediated instruction) should be incorporated to extend the model's applicability in evolving digital educational ecosystems. Furthermore, the theoretical explanations proposed for the unexpected negative relationships between faculty competency and brand affect, as well as between brand trust and e-WOM, are tentative in nature. Because the current study did not directly measure intermediary psychological variables (such as perceived psychological distance or complacency), future research is encouraged to incorporate targeted mediating constructs or experimental designs to empirically substantiate these underlying mechanisms.

**Funding:** This research received no external funding.

**Institutional Review Board Statement:** The study was conducted in accordance with the Declaration of Helsinki and approved by the Research Ethics Committee of National Taiwan University (Protocol Code: [202410ES008], date of approval: [20241203]).

**Informed Consent Statement:** Informed consent was obtained from all individual participants prior to their voluntary completion of the online questionnaire.

**Data Availability Statement:** The datasets generated and analyzed during the current study are available from the corresponding author upon reasonable request.

**Conflicts of Interest:** The author declares no conflicts of interest.

## Appendix A

**Table A1.** Complete Measurement Scale and Questionnaire Items.

| Construct/Dimension      | Code | Measurement Items (English)                                                               | Measurement Items (Chinese)     | Source |
|--------------------------|------|-------------------------------------------------------------------------------------------|---------------------------------|--------|
| Technical (DL1)          | T1   | I can easily learn new ICT techniques.                                                    | 我能輕鬆學習新的ICT技術                   | [6]    |
|                          | T2   | I have good ICT skills.                                                                   | 我具備良好的ICT技能                     |        |
| Cognitive (DL2)          | C1   | I can safely store the information and data I search for.                                 | 我能安全地儲存我搜尋的資訊與資料                | [62]   |
|                          | C2   | I can search for my stored data across different environments (e.g., locations, devices). | 我能在不同的環境中(例如：地點、裝置), 搜尋到我所儲存的資料 |        |
| Social-emotional (DL3)   | SE1  | I can actively participate in social activities using digital media.                      | 我能利用數位媒體積極參與社會活動                |        |
|                          | SE2  | I can use digital media to share my experiences when interacting with others.             | 在與他人互動時, 我能利用數位媒體分享我的經驗         |        |
| Institutional Reputation | IR1  | The overall quality of my university is stable.                                           | 本校各方面品質穩定                       |        |
|                          | IR2  | The operational quality of my university is good.                                         | 本校辦學品質良好                        |        |
|                          | IR3  | My university is innovative.                                                              | 本校具有創新性                         |        |
| E-campus Performance     | EP1  | The webpage layout of my university is clear and easy to understand.                      | 本校網頁編排清楚易懂                      | [9]    |
|                          | EP2  | The university website values privacy and personal data protection.                       | 本校網頁注重隱私權及個人資料保護                |        |
|                          | EP3  | The information provided on the university website is complete.                           | 本校網頁提供的資訊完整                     |        |
| Brand Identification     | BI1  | When someone praises my university, it feels like a personal compliment.                  | 當有人稱讚我的大學時, 感覺就像我被稱讚了           |        |
|                          | BI2  | When someone criticizes my university, it feels like a personal insult.                   | 當有人批評我的大學時, 感覺就像我被侮辱了           |        |
|                          | BI3  | I feel that my university's successes are my successes.                                   | 我覺得我的大學的成功也是我的成功                |        |
| Faculty Competency       | FC1  | Faculty and staff can provide concrete responses to students' needs.                      | 學校教職員能對學生的需求做出具體回應              |        |
|                          | FC2  | Faculty and staff can provide comprehensive teaching and guidance.                        | 學校教職員能提供完善的教學與輔導                |        |
|                          | FC3  | Faculty and staff are highly experienced in their respective professional fields.         | 學校教職員在各自的專業領域都經驗豐富              |        |

Table A1. Cont.

| Construct/Dimension | Code | Measurement Items (English)                                                                 | Measurement Items (Chinese)               | Source |
|---------------------|------|---------------------------------------------------------------------------------------------|-------------------------------------------|--------|
| Perceived Value     | PV1  | The tuition of my university is reasonable                                                  | 本校學費合理                                    |        |
|                     | PV2  | The tuition of my university is great value for money                                       | 本校學費物超所值                                  |        |
|                     | PV3  | The tuition of my university is worth what I pay.                                           | 本校學費值得我支付                                 |        |
| Brand Loyalty       | BL1  | If I had to choose again, I would still choose this university.                             | 若重來一次, 我仍會選擇這所大學                          |        |
|                     | BL2  | The university I attend was among my top choices.                                           | 我就讀的大學是我的前幾志願                             |        |
|                     | BL3  | I would recommend my university to others.                                                  | 我會向其他人推薦我就讀的大學                            |        |
| Campus Perception   | CP1  | The campus environment makes me feel satisfied.                                             | 校園環境讓我感到滿意                                |        |
|                     | CP2  | The campus activities make me feel satisfied.                                               | 校園活動讓我感到滿意                                |        |
| Brand Trust         | BT1  | I trust the university I attend.                                                            | 我信任我就讀的大學                                 | [26]   |
|                     | BT2  | My university brand is trustworthy.                                                         | 我就讀的大學品牌是值得信賴的                            |        |
|                     | BT3  | The university I attend is an authentic/solid institution.                                  | 我就讀的是一所實在的大學                              |        |
| Brand Affect        | BA1  | I feel very good about the university I attend.                                             | 我對於我就讀的大學感覺很好                             |        |
|                     | BA2  | Attending this university makes me very happy.                                              | 就讀這所大學讓我很快樂                               |        |
| e-WOM               | EW1  | I use social media (e.g., Line, Facebook, IG, etc.) to say good things about my university. | 我會用社群媒體(例如: Line、Facebook、IG等等)推廣我就讀大學的好話 | [63]   |
|                     | EW2  | I use social media to recommend my university to prospective junior students.               | 我會用社群媒體向未來要就讀大學的學弟妹推薦我就讀的大學               |        |

## References

1. Tinmaz, H.; Lee, Y.T.; Fanea-Ivanovici, M.; Baber, H. A systematic review on digital literacy. *Smart Learn. Environ.* **2022**, *9*, 21. [\[CrossRef\]](#) [\[PubMed\]](#)
2. Sipos, D. The effects of AI-powered personalization on consumer trust, satisfaction, and purchase intent. *Eur. J. Appl. Sci. Eng. Technol.* **2025**, *3*, 14–24. [\[CrossRef\]](#) [\[PubMed\]](#)
3. ElSayad, G.; Mamdouh, H. The Power of AI in Retail E-Commerce: What Drives Online Customer Word-of-Mouth Intention Toward AI-Powered Shopping Applications? *Int. J. Hum.-Comput. Interact.* **2026**, *42*, 567–579. [\[CrossRef\]](#)
4. Yıldırım, E.; Dursun, F. Disclosure Matters: Perceived Manipulation, Perceived Ethics, and Purchase Intention Toward AI Influencers in Social Media Marketing. *J. Theor. Appl. Electron. Commer. Res.* **2026**, *21*, 194. [\[CrossRef\]](#)
5. Gilster, P. *Digital Literacy*; Wiley: New York, NY, USA, 1997.
6. Ng, W. Can we teach digital natives digital literacy? *Comput. Educ.* **2012**, *59*, 1065–1078. [\[CrossRef\]](#)
7. Hackl, V.; Müller, A.E.; Sailer, M. The AI literacy heptagon: A structured approach to AI literacy in higher education. *Comput. Educ. Artif. Intell.* **2026**, *10*, 100540. [\[CrossRef\]](#)

8. Zhong, B.; Lin, X.; Liu, X. Re-orienting science education in the generative AI era: From inquiry to practice. *Innov. Educ. Teach. Int.* **2026**, 1–13. [\[CrossRef\]](#)
9. Chen, S.L.; Hiew, C.Z. Online brand equity for higher education in Taiwan: Conceptualization, scale development, and validation. *J. Mark. High. Educ.* **2025**, *35*, 262–279. [\[CrossRef\]](#)
10. da Rosa Borges, G.; Carvalho de Souza Domingues, M.J.; da Silva Cordeiro, R.d.C. Student's trust in the university: Analyzing differences between public and private higher education institutions in Brazil. *Int. Rev. Public Nonprofit Mark.* **2016**, *13*, 119–135. [\[CrossRef\]](#)
11. Hennig-Thurau, T.; Gwinner, K.P.; Walsh, G.; Gremler, D.D. Electronic word-of-mouth via consumer-opinion platforms: What motivates consumers to articulate themselves on the Internet? *J. Interact. Mark.* **2004**, *18*, 38–52. [\[CrossRef\]](#)
12. Jalilvand, M.R.; Samiei, N. The effect of electronic word of mouth on brand image and purchase intention: An empirical study in the automobile industry in Iran. *Mark. Intell. Plan.* **2012**, *30*, 460–476. [\[CrossRef\]](#)
13. Ismagilova, E.; Rana, N.P.; Slade, E.L.; Dwivedi, Y.K. A meta-analysis of the factors affecting eWOM providing behaviour. *Eur. J. Mark.* **2021**, *55*, 1067–1102. [\[CrossRef\]](#)
14. Dong, H.; Chen, X.; Shen, J. Unpacking the impact mechanism of generative AI-based learning analytics technology on student learning engagement: The mediating role of community of inquiry and the moderating role of digital literacy. *Int. J. Educ. Technol. High. Educ.* **2026**, *23*, 14. [\[CrossRef\]](#)
15. Jenkins, H. *Confronting the Challenges of Participatory Culture: Media Education for the 21st Century*; MIT Press: Cambridge, MA, USA, 2009.
16. Yadav, S. Artificial intelligence (AI) integration in higher education: Navigating opportunities and ethical frontiers in education with advanced technologies. In *Impact of Artificial Intelligence on Society*; Chapman and Hall/CRC: Boca Raton, FL, USA, 2024; pp. 43–59.
17. Mallek, M.; Jeljeli, R.; Farhi, F.; Mohamed, E.A.S. From digital ecosystems to intelligent maturity: How AI tools reshape the form and content of digital communication. *Front. Commun.* **2026**, *11*, 1871781. [\[CrossRef\]](#)
18. Farquhar, P.H. Managing brand equity. *Mark. Res.* **1989**, *1*, 24–33.
19. Aaker, D.A. *Managing Brand Equity: Capitalizing on the Value of a Brand Name*; The Free Press: New York, NY, USA, 1991.
20. Keller, K.L. Conceptualizing, measuring, and managing customer-based brand equity. *J. Mark.* **1993**, *57*, 1–22. [\[CrossRef\]](#)
21. Perera, C.H.; Nguyen, L.T.V.; Nayak, R. Brand engagement on social media and its impact on brand equity in higher education: Integrating the social identity perspective. *Int. J. Educ. Manag.* **2023**, *37*, 1335–1359. [\[CrossRef\]](#)
22. Roskosa, A.; Stukalina, Y. Exploring Brand Equity-Related Factors in Higher Education. *Rural. Environ. Educ. Personal.* **2022**, *15*, 27–34. [\[CrossRef\]](#)
23. Pinar, M.; Trapp, P.; Girard, T.; Boyt, T.E. University brand equity: An empirical investigation of its dimensions. *Int. J. Educ. Manag.* **2014**, *28*, 616–634. [\[CrossRef\]](#)
24. Chen, C.T. The mediating effect of brand identity on brand knowledge and the operational development of universities. *S. Afr. J. Bus. Manag.* **2019**, *50*, 1–11. [\[CrossRef\]](#)
25. O'Sullivan, H.; Polkinghorne, M.; Chapleo, C.; Cownie, F. Contemporary Branding Strategies for Higher Education. *Encyclopedia* **2024**, *4*, 1292–1311. [\[CrossRef\]](#)
26. Chaudhuri, A.; Holbrook, M.B. The chain of effects from brand trust and brand affect to brand performance: The role of brand loyalty. *J. Mark.* **2001**, *65*, 81–93. [\[CrossRef\]](#)
27. Habibi, M.R.; Laroche, M.; Richard, M.O. The roles of brand community and community engagement in building brand trust on social media. *Comput. Hum. Behav.* **2014**, *37*, 152–161. [\[CrossRef\]](#)
28. Morgan, R.M.; Hunt, S.D. The commitment-trust theory of relationship marketing. *J. Mark.* **1994**, *58*, 20–38. [\[CrossRef\]](#)
29. Carvalho, S.W.; de Oliveira Mota, M. The role of trust in creating value and student loyalty in relational exchanges between higher education institutions and their students. *J. Mark. High. Educ.* **2010**, *20*, 145–165. [\[CrossRef\]](#)
30. Doney, P.M.; Cannon, J.P. An examination of the nature of trust in buyer–seller relationships. *J. Mark.* **1997**, *61*, 35–51. [\[CrossRef\]](#)
31. Chiu, C.-M.; Huang, H.-Y.; Yen, C.-H. Antecedents of trust in online auctions. *Electron. Commer. Res. Appl.* **2010**, *9*, 148–159. [\[CrossRef\]](#)
32. Laroche, M.; Habibi, M.R.; Richard, M.-O.; Sankaranarayanan, R. The effects of social media based brand communities on brand community markers, value creation practices, brand trust and brand loyalty. *Comput. Hum. Behav.* **2012**, *28*, 1755–1767. [\[CrossRef\]](#)
33. Açıköz, F.Y.; Kayakuş, M.; Zăbavă, B.Ş.; Kabas, O. Brand reputation and trust: The impact on customer satisfaction and loyalty for the Hewlett-Packard brand. *Sustainability* **2024**, *16*, 9681. [\[CrossRef\]](#)
34. Upamannu, N.K.; Bhakar, S.S.; Gupta, M. Effect of corporate image on brand trust and brand affect. *Int. J. Appl. Sci.-Res. Rev.* **2015**, *2*, 20–33.
35. Kabadayi, E.T.; Alan, A.K. Brand trust and brand affect: Their strategic importance on brand loyalty. *J. Glob. Strateg. Manag.* **2012**, *6*, 80–88. [\[CrossRef\]](#)

36. Hashem, M.; Ruiz, C.; Curras-Perez, R. Understanding the Dynamics of Brand Love in the Automobile Industry. *J. Theor. Appl. Electron. Commer. Res.* **2024**, *19*, 1142–1163. [\[CrossRef\]](#)
37. Dichter, E. How word-of-mouth advertising works. *Harv. Bus. Rev.* **1966**, *44*, 147–166.
38. Arndt, J. Role of product-related conversations in the diffusion of a new product. *J. Mark. Res.* **1967**, *4*, 291–295. [\[CrossRef\]](#)
39. Verma, S.; Yadav, N. Past, present, and future of electronic word of mouth (EWOM). *J. Interact. Mark.* **2021**, *53*, 111–128. [\[CrossRef\]](#)
40. Rao, K.S.; Rao, B.; Acharyulu, G.V.R.K. Examining ePWOM-purchase intention link in Facebook brand fan pages: Trust beliefs, value co-creation and brand image as mediators. *IIMB Manag. Rev.* **2021**, *33*, 309–321. [\[CrossRef\]](#)
41. Sulthana, A.N.; Vasantha, S. Influence of electronic word of mouth eWOM on purchase intention. *Int. J. Sci. Technol. Res.* **2019**, *8*, 1–5. [\[CrossRef\]](#)
42. Ngo, T.T.A.; Bui, C.T.; Chau, H.K.L.; Tran, N.P.N. Electronic word-of-mouth (eWOM) on social networking sites (SNS): Roles of information credibility in shaping online purchase intention. *Heliyon* **2024**, *10*, e32168. [\[CrossRef\]](#) [\[PubMed\]](#)
43. Littlejohn, A.; Beetham, H.; McGill, L. Learning at the digital frontier: A review of digital literacies in theory and practice. *J. Comput. Assist. Learn.* **2012**, *28*, 547–556. [\[CrossRef\]](#)
44. Kahne, J.; Lee, N.J.; Feezell, J.T. Digital media literacy education and online civic and political participation. *Int. J. Commun.* **2012**, *6*, 24.
45. Xiong, S.; Zhang, T. Enhancing tourist loyalty through location-based service apps: Exploring the roles of digital literacy, perceived ease of use, perceived autonomy, virtual-content congruency, and tourist engagement. *PLoS ONE* **2024**, *19*, e0294244. [\[CrossRef\]](#) [\[PubMed\]](#)
46. Gutierrez-Angel, N.; Sanchez-Garcia, J.N.; Mercader-Rubio, I.; Garcia-Martin, J.; Brito-Costa, S. Digital literacy in the university setting: A literature review of empirical studies between 2010 and 2021. *Front. Psychol.* **2022**, *13*, 896800. [\[CrossRef\]](#) [\[PubMed\]](#)
47. Kisiolek, A.; Karyy, O.; Halkiv, L. The utilization of Internet marketing communication tools by higher education institutions (on the example of Poland and Ukraine). *Int. J. Educ. Manag.* **2021**, *35*, 754–767. [\[CrossRef\]](#)
48. Dwyer, F.R.; Schurr, P.H.; Oh, S. Developing buyer-seller relationships. *J. Mark.* **1987**, *51*, 11–27. [\[CrossRef\]](#)
49. Pinar, M.; Girard, T.; Basfirinci, C. Examining the relationship between brand equity dimensions and university brand equity: An empirical study in Turkey. *Int. J. Educ. Manag.* **2020**, *34*, 1119–1141. [\[CrossRef\]](#)
50. Bae, G.K.; Lee, S.M.; Luan, B.K. The impact of ESG on brand trust and word of mouth in food and beverage companies: Focusing on Jeju Island tourists. *Sustainability* **2023**, *15*, 2348. [\[CrossRef\]](#)
51. Chavadi, C.A.; Sirothiya, M.; Menon, S.R.; Vishwanatha, M.R. Modelling the effects of social media-based brand communities on brand trust, brand equity and consumer response. *Vikalpa* **2023**, *48*, 114–141. [\[CrossRef\]](#)
52. Swan, J.E.; Nolan, J.J. Gaining customer trust: A conceptual guide for the salesperson. *J. Pers. Sell. Sales Manag.* **1985**, *5*, 39–48.
53. Keller, K.L. *Building Customer-Based Brand Equity: A Blueprint for Creating Strong Brands*; Marketing Science Institute: Cambridge, MA, USA, 2001.
54. Soedarto, T.; Kurniawan, G.S.A.; Sunarsono, R.J. The parceling of loyalty: Brand quality, brand affect, and brand trust effect on attitudinal loyalty and behavioral loyalty. *Acad. Strateg. Manag. J.* **2019**, *18*, 1–15.
55. Abdullah, A.H.; Wasiuzzaman, S.; Musa, R. University quality and emotional attachment of undergraduate students in a private higher education in Malaysia: The mediating role of total experience. *Int. J. Soc. Econ.* **2015**, *42*, 644–665. [\[CrossRef\]](#)
56. Farhat, K.; Mokhtar, S.S.M.; Salleh, S.B.M. Role of brand experience and brand affect in creating brand engagement: A case of higher education institutions (HEIs). *J. Mark. High. Educ.* **2021**, *31*, 107–135. [\[CrossRef\]](#)
57. Moorman, C.; Zaltman, G.; Deshpande, R. Relationships between providers and users of market research: The dynamics of trust within and between organizations. *J. Mark. Res.* **1992**, *29*, 314–328. [\[CrossRef\]](#)
58. López, M.; Sicilia, M. Determinants of E-WOM influence: The role of consumers' internet experience. *J. Theor. Appl. Electron. Commer. Res.* **2014**, *9*, 28–43. [\[CrossRef\]](#)
59. Joshi, R.; Garg, P. Role of brand experience in shaping brand love. *Int. J. Consum. Stud.* **2021**, *45*, 259–272. [\[CrossRef\]](#)
60. Mustafa, K.; Ahmad, F.; Qaisar, M.N.; Zada, S.; Jamil, S.; Anwer, N.; Khawaja, K.F.; Vega-Muñoz, A.; Contreras-Barraza, N.; Ali Raza Hamid, S.; et al. Brand love: Role of online customer experience, value co-creation, and Relationship Quality. *Front. Psychol.* **2022**, *13*, 897933. [\[CrossRef\]](#) [\[PubMed\]](#)
61. Liu, M.; Yan, J. The effect of brand personality on electronic word-of-mouth: Mediation of brand love and moderated mediation of brand experience sharing. *Front. Psychol.* **2022**, *13*, 936033. [\[CrossRef\]](#) [\[PubMed\]](#)
62. Rubach, C.; Lazarides, R. Addressing 21st-century digital skills in schools—Development and validation of an instrument to measure teachers' basic ICT competence beliefs. *Comput. Hum. Behav.* **2021**, *118*, 106636. [\[CrossRef\]](#)
63. Maxham, J.G., III; Netemeyer, R.G. Modeling customer perceptions of complaint handling over time: The effects of perceived justice on satisfaction and intent. *J. Retail.* **2002**, *78*, 239–252. [\[CrossRef\]](#)
64. Hair, J.F., Jr.; Black, J.W.; Babin, B.J.; Anderson, E.R. *Multivariate Data Analysis (Seventh)*; Pearson Education Limited: Edinburgh, UK, 2010.
65. Nunnally, J.C. *Psychometric Theory*, 2nd ed.; McGraw-Hill: New York, NY, USA, 1978.

66. Bagozzi, R.P.; Yi, Y. On the evaluation of structural equation models. *J. Acad. Mark. Sci.* **1988**, *16*, 74–94. [[CrossRef](#)]
67. Fornell, C.; Larcker, D.F. Evaluating structural equation models with unobservable variables and measurement error. *J. Mark. Res.* **1981**, *18*, 39–50. [[CrossRef](#)]
68. Hair, J.F.; Risher, J.J.; Sarstedt, M.; Ringle, C.M. When to use and how to report the results of PLS-SEM. *Eur. Bus. Rev.* **2019**, *31*, 2–24. [[CrossRef](#)]

**Disclaimer/Publisher’s Note:** The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of MDPI and/or the editor(s). MDPI and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.