Article

Journal of Interdisciplinary Studies in Education

Volume 15, Issue 8 (2026)
Journal of Interdisciplinary Studies in Education
ISSN: 2166-2681Print 2690-0408 Online | https://ojed.org/jise
https://doi.org/10.32674/67kacc69

Unpacking the University Environment: How Student Engagement and Brand Reputation Shape Brand Equity in an Emerging Higher Education Context

Van Ha Nguyen
VNU School of Interdisciplinary Sciences and Arts, Vietnam National University, Hanoi, Vietnam
ORCID: 0009-0005-1209-9962

Trong Nghia Hoang
VNU School of Interdisciplinary Sciences and Arts, Vietnam National University, Hanoi, Vietnam
ORCID: 0009-0004-7577-012X

Viet Dung Tran
VNU School of Interdisciplinary Sciences and Arts, Vietnam National University, Hanoi, Vietnam
ORCID: 0009-0006-8753-0312

Thi Thu Huong Nguyen
VNU School of Interdisciplinary Sciences and Arts, Vietnam National University, Hanoi, Vietnam
ORCID: 0000-0002-7735-3272

ABSTRACT

Universities increasingly compete on environmental quality, yet the mechanism converting it into brand equity remains under-specified. This study separates the university environment into learning and emotional dimensions and tests whether their associations with brand equity are mediated by student engagement and moderated by institutional reputation. Integrating the stimulus–organism–response framework, student involvement theory, and signaling theory, we analyzed data from 256 students at Vietnam National University, Hanoi, using partial least squares structural equation modeling. The learning environment was associated with both engagement and equity, whereas the emotional environment was associated with equity only through engagement. Brand reputation dampened rather than amplified the engagement–equity link. These findings suggest that engagement-oriented investments may yield the highest returns for institutions with nascent reputational capital.

Keywords: brand engagement, brand reputation, emotional environment, higher education, learning environment, survey, university brand equity

© Author(s), 2026. Published by Star Scholars Press.
This article is distributed under the Creative Commons Attribution 4.0 International License (CC BY 4.0), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited. https://creativecommons.org/licenses/by/4.0/

INTRODUCTION

Over the last two decades, higher education has shifted from a public good to a market-driven brand (Xiao et al., 2023). Competition for students, faculty, and funding has made a distinctive institutional brand a condition of survival rather than a discretionary activity (Pinar et al., 2020), elevating university brand equity (UBE) as a central construct for explaining differentiation, trust, and advocacy in the sector.

While the literature has converged on three broad antecedent clusters of UBE the university environment, student brand engagement, and institutional brand reputation progress within each cluster remains uneven, revealing three critical gaps that obscure how these forces interact. First, the university environment is predominantly modeled as a single construct that merges physical facilities, academic provision, and interpersonal climate. Although Pinar et al. (2020) explicitly separated a learning environment from an emotional environment and reported that both contribute to UBE, subsequent studies have rarely retained that separation, leaving it unclear whether the two sub-dimensions operate through the same causal route or through different ones. Second, the mechanism linking environment to equity is usually left implicit. Studies converge in linking environmental quality, engagement and reputation to brand outcomes (Boulton et al., 2018; Foroudi et al., 2019; Guo et al., 2023; Ibrahim et al., 2025; Juhaidi et al., 2026; Tang et al., 2025), yet rarely estimate these relationships as a single system in which environment is the experiential substrate, engagement the relational converter and reputation the conditioning signal. A recent scoping review similarly argues for more relational, collaborative accounts of how students contribute to institutional brand identity (Ahmad et al., 2026). Third, where reputation has been modeled as a moderator, the prevailing expectation is that it amplifies returns to other brand-building activity, consistent with luxury hotel findings (Rather et al., 2024) and signaling logic (Erdem & Swait, 1998). Yet the same signaling logic admits a competing prediction: if reputation reduces perceived risk and stabilizes expectations, such as in a young school operating under an established parent university, additional individual engagement may have comparatively little room to move brand evaluations.

Accordingly, this study pursues three objectives: (i) to model the learning environment and the emotional environment as distinct antecedents and to compare their effects; (ii) to test brand engagement as the mediating mechanism through which each environmental dimension reaches brand equity; and (iii) to adjudicate between the amplification and the stabilization accounts of brand reputation as a moderator.

The empirical setting is a newly established school within Vietnam National University, Hanoi. Upgraded to school status in 2024 and having grown its undergraduate enrolment by 152% in three years, the institution's own reputational capital is still forming while it simultaneously inherits the reputation of a long-established national university. This configuration makes the competing predictions about reputation empirically separable, while addressing the broader under-representation of Vietnamese higher education in the UBE literature (Tran et al., 2025). Theoretically, the study integrates the stimulus–organism–response (S–O–R) framework, student involvement theory, and signaling theory into a single estimable model. Empirically, it documents a negative reputational moderation running against dominant amplification assumptions. Contextually, it provides evidence from an under-studied emerging market and an institutional type, the young unit inside an established university, offering a more nuanced framework for managing university brand equity during institutional restructuring.

LITERATURE REVIEW

Theoretical Foundations

The model combines three complementary theories. The stimulus–organism–response (S–O–R) framework (Mehrabian & Russell, 1974) is well suited to intangible educational services, where environmental cues strongly shape how the service is judged (Bitner, 1992). It treats the learning and emotional environments as stimuli, brand engagement as the organismic state, and brand equity as the

response, which implies that environmental effects are at least partly indirect. Student involvement theory (Astin, 1984; Kahu, 2013) explains what happens inside this organismic state: favorable perceptions do not turn directly into equity, because students must first invest physical and psychological energy before positive feelings become lasting institutional value. Signaling theory (Erdem & Swait, 1998; Spence, 1973) accounts for institutional reputation: when quality cannot be fully observed, reputation lowers perceived risk and buffers brand evaluations (Blankson et al., 2025; Juhaidi et al., 2026; Shim et al., 2026); the direction of its moderating effect is therefore left as an empirical question. Together, these frameworks trace how environmental stimuli are converted through active engagement, and shaped by reputational signals, into brand outcomes.

University Brand Equity

Brand equity rests on two classic foundations: Aaker's (1991) asset-based view, where equity comprises the assets and liabilities linked to a brand's name, and Keller's (1993) customer-based view, where equity is the differential effect of brand knowledge on consumer response. Transposed to higher education, university brand equity (UBE) takes on a distinct, multidimensional structure (Mourad et al., 2011): Pinar et al. (2020) operationalized it through awareness, perceived quality, associations, environment, trust, loyalty, and reputation, while Xiao et al. (2023) characterized the university brand as an overlapping cluster of identity, image, reputation, and engagement. Two features recur: students co-produce rather than passively receive the university brand (Foroudi et al., 2019), and the relationship unfolds over years, not a single transaction. UBE is therefore defined, following Yoo and Donthu (2001), as the incremental value of the institutional brand, captured through students' preference for their university over an equivalent alternative.

The University Environment as Two Distinct Sub-Dimensions

The learning environment refers to the conditions that make effective learning possible: the caliber of academic staff, the accessibility of resources and facilities, and the flexibility of program provision (Gray et al., 2003). Evidence on this construct points in one direction but varies in how far it can be interpreted. The strongest support comes from Guo et al. (2023), whose cross-lagged study of 966 students over 2.5 years found that perceptions of the learning environment predicted later engagement and learning outcomes, with early experiences compounding over time. By contrast, Boulton et al. (2018) linked virtual learning environment activity to academic attainment across 38 modules, which shows that the environment matters but rests on behavioral traces rather than on perceptions. Taken together, these studies indicate that the construct spans pedagogical, digital, and physical infrastructure, including how teaching is managed in digital settings (Nguyen et al., 2022), and extends to the psychological safety and trustworthy academic relationships that learning requires (Savolainen, 2023). All of these feed the perceived academic quality on which UBE rests. These studies differ in what they measure, perceived conditions in Guo et al. (2023) and recorded behavior in Boulton et al. (2018); the present study follows the perceptual approach because brand evaluations are formed from what students perceive.

The emotional environment refers to the institution's affective climate: the warmth of faculty–student and peer relationships and the sense of belonging to a community (Pinar et al., 2020). The evidence suggests that this climate matters at two levels. In the classroom, teacher emotional support predicted engagement through resilience and self-efficacy (Quan et al., 2025), and students' emotional states were linked to both the academic and the social sides of their engagement (Samuilik et al., 2026). At the institutional level, Chen and Chen (2025), examining 120,344 students across 100 Chinese universities, showed that social-emotional competency development is significantly moderated by the educational environment, with warm interpersonal settings producing greater gains. In both cases, affective conditions act on what students do and develop, which is consistent with an engagement-mediated route.

The two sub-dimensions are conceptually adjacent but functionally distinct. Chen et al. (2017), surveying 512 Chinese university students, found that dimensions of a constructivist learning environment related positively to life satisfaction and positive affect, indicating cognitive–affective spillover; Cayolla et al. (2023), however, found that emotional and cognitive environmental connections predicted different behavioral and attitudinal outcomes, concluding that academic rigor and interpersonal warmth are complementary rather than interchangeable. Modeling them separately is therefore not a matter of finer partition for its own sake, but a precondition for detecting route differences of the kind this study proposes.

Hypothesis Development

The University Environment and Brand Engagement

Brand engagement denotes the level and quality of a student's cognitive, emotional and behavioral investment in the institutional brand (Hollebeek, 2011). Under S–O–R logic, a well-resourced learning environment is a salient stimulus: adequate facilities, capable staff and flexible provision lower the cost of participation and raise its expected return, which should increase the energy students direct towards academic and community activity. The longitudinal evidence of Guo et al. (2023) supports precisely this ordering, with environmental perceptions preceding engagement rather than the reverse. Toding et al. (2023) similarly found that faculty mindsets and attitudes towards the learning environment shaped students' entrepreneurial engagement, and Liu et al. (2023) reported that a digital visual collaborative environment raised creative confidence and learning motivation.

The emotional environment should operate through a parallel affective route. Supportive relationships and a sense of belonging reduce the psychological cost of participation and increase identification with the institution, both of which are established precursors of engagement (Quan et al., 2025; Samuilik et al., 2026; Waluyo & Balazon, 2024). Accordingly:

H_1: The learning environment is positively associated with student brand engagement.

H_2: The emotional environment is positively associated with student brand engagement.

Brand Engagement and University Brand Equity

Engagement is theorized as the relational converter that turns institutional provision into durable brand value. Tran et al. (2025), studying Vietnamese universities, demonstrated a significant collective relationship between UBE dimensions and behavioral, cognitive, and emotional student engagement, and argued that engaged students display greater loyalty and lower attrition. Evidence from adjacent service contexts converges: customer brand engagement mediates the effect of brand communication on brand equity, with customer-generated communication outperforming firm-generated communication (Coffie et al., 2025); it mediates value co-creation effects on equity through trust and perceived service quality (Peco-Torres et al., 2025); and it partially mediates brand love effects on brand defense (Chou & Chen, 2025). In higher education specifically, Ibrahim et al. (2025) identified engagement as the mediator between social media marketing activity and brand equity, with loyalty as the downstream outcome. Similarly, in a PLS-SEM study of university students, generative AI competence was associated with engagement partly through utilization, perceived autonomy, and formal learning as mediating pathways (Sampah et al., 2026).

H_3: Student brand engagement is positively associated with university brand equity.

Direct Effects of the University Environment on Brand Equity

Beyond the engagement route, signaling theory implies a direct path. Tangible and verifiable attributes of the learning environment laboratories, studios, library provision, staff credentials can be observed before, and independently of, any personal involvement. They therefore act as quality signals that

students can read directly when they form brand evaluations without full information (Erdem & Swait, 1998). Pinar et al. (2020) accordingly positioned the learning environment as a direct constituent of UBE.

The status of a corresponding direct path from the emotional environment is more contestable. Affective climate is experienced rather than observed, is hard to verify from outside, and, under student involvement theory, remains a passive state until it is converted into student effort (Astin, 1984). The prior literature nonetheless generally assumes that positive service perceptions translate directly into equity, and the hypothesis is therefore stated in that conventional direction so that the assumption is tested rather than presupposed:

H_4: The learning environment is positively associated with university brand equity.

H_5: The emotional environment is positively associated with university brand equity.

The Moderating Role of Brand Reputation

Brand reputation is the accumulated assessment of institutional credibility built through performance and consistency over time (Foroudi et al., 2019), and is among the most durable antecedents of UBE. Students' perceptions of institutional image have also been linked to socially responsible practices in a public university context (Huapaya-Capcha et al., 2026). The role of reputation as a moderator, however, admits two opposing readings of the same signaling premise.

The amplification reading holds that a credible reputation validates and magnifies the returns to other brand-building activity: students who trust the institution interpret their own engagement as confirming evidence, so the engagement equity slope steepens. Rather et al. (2024) reported this pattern for luxury hotel brands, and Sun et al. (2024) showed that pre-existing brand reputation interacts with online information signals to increase brand-related profit under herding.

The stabilization reading holds the opposite. If reputation functions primarily to reduce perceived risk and to stabilize expectations, then where reputation is high, the student's evaluation of the brand is already largely settled, leaving less variance for personal engagement to explain; the engagement equity slope would then flatten. This reading is consistent with the risk-reduction evidence of Shim et al. (2026) and with the buffering role of reputation against negative word-of-mouth documented by Juhaidi et al. (2026). The distinction matters managerially, because the two readings imply opposite allocations of engagement investment across student segments. Since theory does not settle the direction, the hypothesis is stated non-directionally:

H_6: Brand reputation moderates the relationship between student brand engagement and university brand equity.

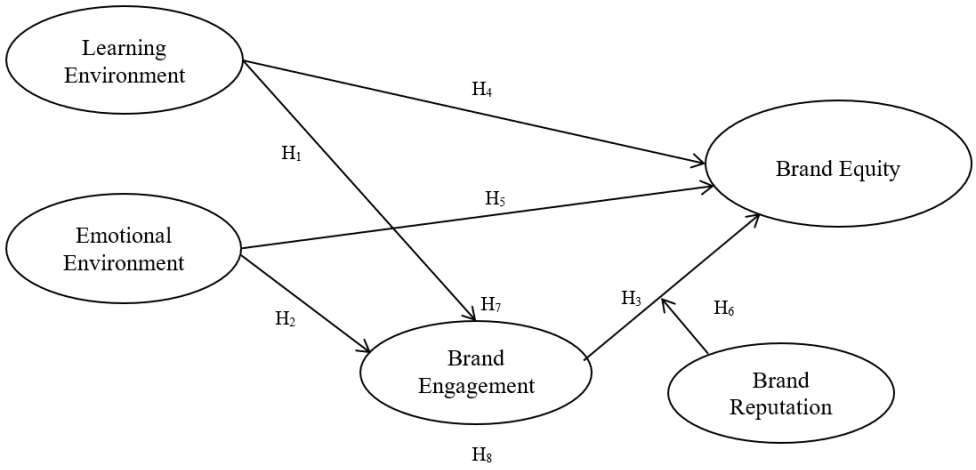
The Mediating Role of Brand Engagement

Figure 1 presents the conceptual model. Taken together, H1–H5 imply indirect paths from each environmental sub-dimension to brand equity via engagement. Under S–O–R, the mediation is expected in both cases; under student involvement theory, it is expected to be more nearly complete for the emotional environment, whose effect has no independent signaling route, than for the learning environment, which retains one. Following Zhao et al. (2010), the classification of mediation as partial or full follows from the joint pattern of the indirect effect and the corresponding direct effect rather than from sequential significance testing.

H_7: Student brand engagement mediates the relationship between the learning environment and university brand equity.

H_8: Student brand engagement mediates the relationship between the emotional environment and university brand equity.

Figure 1
Conceptual Model



RESEARCH METHOD

Research Setting and Design

The study was conducted at the VNU School of Interdisciplinary Sciences and Arts (VNU-SIS), a member school of Vietnam National University, Hanoi. The school was formally upgraded from faculty to school status in January 2024 and offers interdisciplinary programs across creative management and economics, cultural industries and heritage, arts and design, and architecture, urbanism and sustainability, taught across four campuses. Undergraduate enrolment reached 3,359 students in 2025, a 152% increase over three years, and the first cohort graduated in 2025. The setting was chosen purposively rather than for convenience: because the school's own reputational capital is still forming while it operates under the established reputation of its parent university, the sample contains meaningful variance in perceived brand reputation, which is a precondition for estimating the moderation hypothesized in H6 and for separating the amplification and stabilization accounts described in the "Moderating Role of Brand Reputation" section.

A cross-sectional survey design was adopted, preceded by a qualitative instrument-validation phase. A cross-sectional design is appropriate for the study's aim of estimating the relative strength of the hypothesized paths within a single structural system; its implications for causal inference are addressed in the "Limitations and Future Research" section.

Measures

All constructs were measured with multi-item scales adapted from prior studies and rated on five-point Likert scales (1 = strongly disagree, 5 = strongly agree). Established scales were preferred over ad hoc items because they carry accumulated validity evidence and permit comparison with prior UBE research. The learning environment (LE) was measured with seven items from Gray et al. (2003), covering teaching staff quality, resources, student support services, tuition reasonableness, physical facilities, program flexibility, and campus safety; this scale was selected because it separates the functional components of the environment more cleanly than general service-quality instruments developed for commercial settings. The emotional environment (EE) was measured with four items from Pinar et al. (2020), capturing institutional supportiveness, warmth of faculty–student interaction, friendliness of peer relationships, and sense of community; this scale was selected because it was developed and validated

specifically within a UBE model. Brand engagement (BEG) was measured with ten items adapted from Tran et al. (2025), spanning emotional engagement (e.g., enjoyment of institutional activities) and cognitive–behavioral engagement (e.g., interacting with the institution's social media, sharing institutional activities with outsiders); this source was preferred because it operationalizes engagement for Vietnamese higher education. Brand reputation (BR) was measured with seven items from Pinar et al. (2020) concerning graduate outcomes (income, employer preference, professional recognition, career success, job offers, employment timing, and postgraduate admission), reworded to the respondent's own and peers' experience. University brand equity (BEQ) was measured with the three overall-equity items used by Castro-Gómez et al. (2024), which follow the preference-based logic of Yoo and Donthu (2001) (e.g., "It makes sense to prefer this university to any other").

Because the instrument was administered in Vietnamese, all items were translated and then subjected to a two-stage content validation. First, five experts in higher education management and brand management independently assessed each item for sufficiency, clarity, coherence, and relevance between 1 January and 1 February 2026; content validity ratios were computed for each item following Lawshe (1975) and evaluated against the critical values of Ayre and Scally (2014), and wording was revised where indicated. Second, a pilot with 20 VNU-SIS students checked comprehensibility and completion time, leading to minor editorial refinements before fielding.

Participants and Data Collection

The target population comprised undergraduate students and recent graduates of the five cohorts admitted between 2021 and 2025 (the 2021 cohort being the school's first, which graduated in 2025). Data were collected online over three weeks (1–22 March 2026) through a structured questionnaire distributed via institutional student channels. Participation was voluntary and anonymous; no identifying information was collected, and informed consent was obtained on the opening page. A non-probability quota approach was used, with quotas set against cohort enrolment shares to balance the sample across cohorts. A total of 260 responses were received. Responses were screened for incompleteness and straight-lining (identical answers across the entire questionnaire), and 4 invalid responses were removed. This yielded a final sample of $n = 256$, retaining 98.46% of the responses received.

The sample size was justified using the inverse square root method for PLS-SEM (Kock & Hadaya, 2018). To detect a path coefficient with adequate statistical power at a 5% significance level, assuming a minimum path coefficient of 0.20, the minimum required sample size is approximately 155. The achieved sample of 256 exceeds this threshold.

RESULTS

Sample Profile

Of the 256 valid respondents, 175 (68.36%) were female and 81 (31.64%) were male. By cohort, 46 (17.97%) were admitted in 2021, 54 (21.09%) in 2022, 58 (22.66%) in 2023, 52 (20.31%) in 2024, and 46 (17.97%) in 2025. Respondents were spread across four faculties: management and creative economics ($n = 102$, 39.84%), cultural industries and heritage ($n = 68$, 26.56%), arts and design ($n = 52$, 20.31%), and architecture, urbanism and sustainability ($n = 34$, 13.28%). Most studied at the main My Dinh campus ($n = 171$, 66.80%), with the remainder ($n = 85$, 33.20%) at other campuses. In terms of employment status, 176 respondents (68.75%) were working, interning, or self-employed, whereas 80 (31.25%) were not currently working. Table A1 in Appendix A reports the full sample characteristics.

Measurement Model

All five scales exceeded the reliability screen, with Cronbach's alpha ranging from 0.756 (EE) to 0.938 (BR). The first EFA over the 21 LE, EE, and BEG items was factorable (KMO = 0.947; Bartlett χ^2 = 2,788.363, df = 210, $p < .001$) but revealed three problematic items: LE4 (tuition reasonableness) and BEG1 (excitement about studying) cross-loaded on two factors, and LE1 (teaching staff excellence) converged on the EE factor rather than on LE. The cross-loading of LE4 is interpretable because perceived tuition fairness reflects perceived financial sacrifice rather than environmental quality, and the migration of LE1 is consistent with the tendency, in high-contact services, for respondents to fuse staff competence with staff warmth. The three items were removed and the EFA repeated; the 18 remaining items converged cleanly on the three intended factors (KMO = 0.937; Bartlett χ^2 = 2,271.613, df = 153, $p < .001$), with rotated loadings between 0.551 and 0.805 and no substantive cross-loadings, supporting item-level discriminant validity across LE, EE and BEG.

In the first PLS estimation, which added the BR and BEQ indicators, two further items fell below the 0.708 loading threshold (Hair et al., 2019): LE7 (campus safety, 0.652) and BEG3 (deep interest in one's own studies, 0.690). Their weak convergence is theoretically coherent. Campus safety operates as a hygiene attribute in the Vietnamese context, a taken-for-granted baseline rather than a differentiating component of the learning experience, and BEG3 captures private academic effort, which need not be directed at the institutional brand at all: a student can study intensively while never interacting with the institution, which violates the brand-directedness that defines brand engagement (Hollebeek, 2011). Both items were removed.

The final measurement model comprised 26 indicators across the five constructs. All outer loadings ranged from 0.703 to 0.895. EE3 (0.703) falls marginally below the 0.708 guideline but was retained because the emotional environment has only four indicators and its composite reliability and AVE both clear the recommended cut-offs (Hair et al., 2019). Composite reliabilities ranged from 0.844 (EE) to 0.950 (BR) and AVE values from 0.577 (EE) to 0.788 (BEQ), so every construct met the conventional thresholds for internal consistency and convergent validity (Hair et al., 2019; Table 1).

Table 1

Measurement Model: Reliability, Convergent Validity, and Outer Loadings

Construct/indicator	Outer loading	α	CR	AVE
Learning environment		.804	.872	.630
LE2	.803			
LE3	.757			
LE5	.819			
LE6	.794			
Emotional environment		.756	.844	.577
EE1	.761			
EE2	.727			
EE3	.703			
EE4	.840			
Brand engagement		.911	.928	.618
BEG2	.773			
BEG4	.761			
BEG5	.814			

Construct/indicator	Outer loading	α	CR	AVE
BEG6	.726			
BEG7	.801			
BEG8	.820			
BEG9	.795			
BEG10	.797			
Brand reputation		.938	.950	.729
BR1	.875			
BR2	.861			
BR3	.810			
BR4	.878			
BR5	.860			
BR6	.810			
BR7	.880			
University brand equity		.866	.918	.788
BEQ1	.881			
BEQ2	.887			
BEQ3	.895			

Note. $N = 256$. α = Cronbach's alpha; CR = composite reliability; AVE = average variance extracted. Values for α, CR, and AVE are reported on the construct rows; outer loadings (the correlation between an indicator and its construct) are reported on the indicator rows. All loadings are significant at $p < .001$ (bootstrapping, 5,000 resamples). Indicators LE1, LE4, LE7, BEG1, and BEG3 were removed during scale purification and are not shown.

Discriminant validity at the construct level was assessed with the heterotrait–monotrait ratio of correlations (HTMT) and the Fornell–Larcker criterion, extending the item-level evidence from the EFA reported above. All HTMT ratios were below the conservative 0.85 threshold except that for brand equity (BEQ) and brand engagement (BEG), which was 0.893: above 0.85 but below the liberal 0.90 threshold (Hair et al., 2019). The Fornell–Larcker criterion was met for every pair except this one: the square root of the AVE for BEG ($\sqrt{0.618} = 0.786$) is marginally smaller than its correlation with BEQ (0.794; Table A2 in Appendix A). The inner VIF of 3.183 for the BEG → BEQ path (Table 2) points in the same direction, indicating that the two constructs are closely related. Three considerations nevertheless support treating them as distinct. First, they are antecedent and outcome rather than component and composite: engagement is posited as a precursor of equity, not as part of it. Second, their item content differs: the engagement items describe students' own enjoyment of, and participation in, institutional activities, whereas the equity items capture a preference for the university over alternatives. Third, the 95% bootstrap confidence interval of the HTMT ratio [0.831, 0.943] excludes 1 (Henseler et al., 2015), although its upper limit exceeds 0.90, so the evidence for discriminant validity is adequate but not unambiguous. The overlap is nonetheless acknowledged as a limitation (the "Limitations and Future Research" section) and should be kept in mind when reading the engagement–equity path in the "Structural Model" section. Given the conceptual proximity of brand reputation (BR) and BEQ, it is worth noting that their HTMT ratio (0.772) is below 0.85, supporting their distinctiveness.

Structural Model

Collinearity among the predictors of each endogenous construct was checked with inner-model variance inflation factors (VIFs), which ranged from 1.441 to 3.183 (Table 2). All were below the conventional ceiling of 5 (Hair et al., 2019), although the value for BEG → BEQ (3.183), the highest, is above the more demanding guideline of 3 and reflects the close relationship between the two constructs discussed in the "Measurement Model" section. The model explained 50.9% of the variance in brand engagement (R^2 = 0.509, adjusted R^2 = 0.505) and 70.1% of the variance in university brand equity (R^2 = 0.701, adjusted R^2 = 0.695) (see figure B1 in Appendix B).

Table 2

Structural Model Results: Direct, Interaction, and Indirect Effects

Hyp.	Path	β	*t*	*p*	f^2	Inner VIF
H1	LE → BEG	.467	8.199	< .001	0.308	1.441
H2	EE → BEG	.340	4.647	< .001	0.163	1.441
H3	BEG → BEQ	.407	4.231	< .001	0.174	3.183
—	BR → BEQ	.189	2.663	.008	0.046	2.589
H4	LE → BEQ	.155	2.377	.018	0.032	2.485
H5	EE → BEQ	.078	1.268	.205	0.012	1.718
H6	BEG × BR → BEQ	−.147	3.175	.002	0.054	1.749
H7	LE → BEG → BEQ	.190	3.533	< .001	—	—
H8	EE → BEG → BEQ	.138	3.924	< .001	—	—

Note. Inner VIF = variance inflation factor from the structural model, calculated for the predictors of each endogenous construct; f^2 = local effect size (about 0.02 small, 0.15 medium, 0.35 large). Standardized coefficients; bootstrapping with 5,000 resamples. R^2(BEG) = 0.509; R^2(BEQ) = 0.701. The unlabeled row reports the direct (main) effect of brand reputation on brand equity, included alongside the BR × BEG interaction (H6) so that the interaction can be interpreted net of this effect; it was not itself hypothesized. H7 and H8 are the specific indirect effects through brand engagement. LE = learning environment; EE = emotional environment; BEG = brand engagement; BR = brand reputation; BEQ = university brand equity.

Table 2 reports the bootstrapped path estimates. A more favorable learning environment was associated with substantially higher brand engagement, and a more favorable emotional environment was likewise associated with higher engagement, supporting H1 and H2; in effect-size terms, the learning environment's contribution to engagement was medium to large and the emotional environment's contribution was medium. Higher brand engagement was in turn associated with higher brand equity, supporting H3. Accounting for the interaction under H6, brand reputation showed a positive direct association with equity; consequently, the negative interaction reflects a dampening of engagement's effect at higher reputation levels rather than an overall negative effect. Of the two direct environmental paths, only the learning environment reached significance: a more favorable learning environment was associated with modestly higher brand equity, supporting H4, whereas the emotional environment showed no significant direct association with brand equity, so H5 was not supported. This null result is substantive rather than incidental, and it is taken up in the "Mediation Analysis" and "Theoretical Implications" sections.

Mediation Analysis

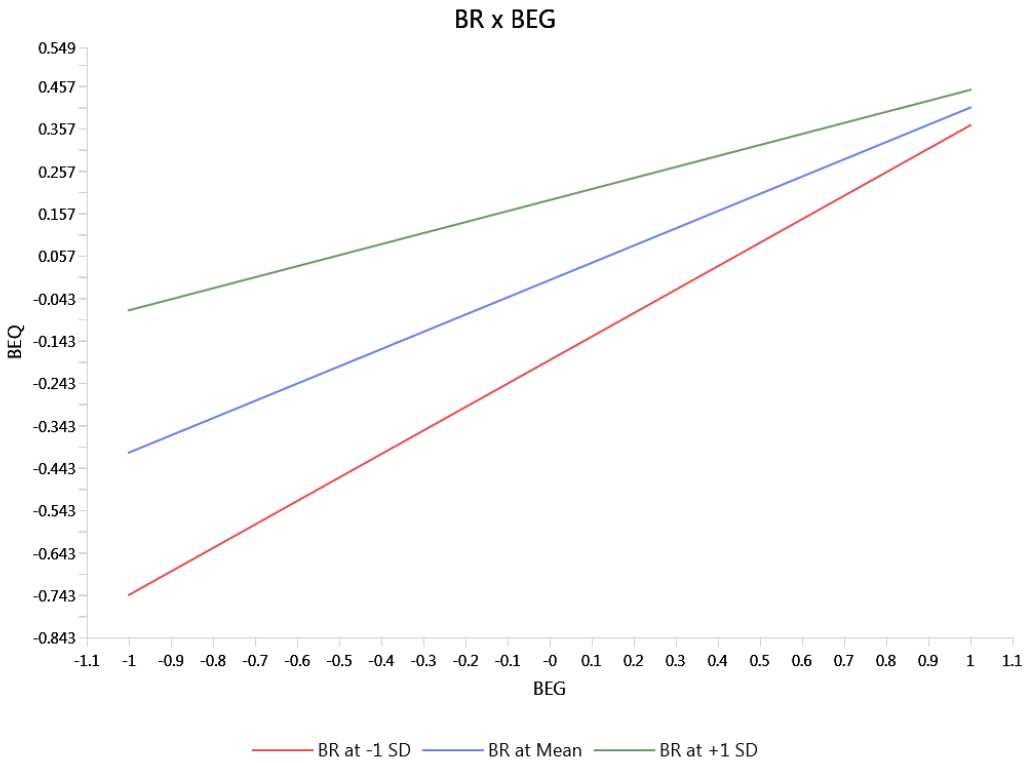
Both specific indirect effects were significant (Table 2, H7 and H8). The learning environment was indirectly associated with brand equity through engagement because the corresponding direct path (H4) was also significant and of the same sign; engagement partially mediates the learning environment–equity relationship in a complementary fashion (Zhao et al., 2010), supporting H7. The emotional environment was likewise indirectly associated with brand equity through engagement; because its direct path (H5) was non-significant, this constitutes indirect-only (full) mediation, supporting H8. Substantively, the institution's affective climate was associated with brand equity only insofar as it was linked to students' active engagement, whereas the learning environment was associated with equity both through engagement and directly.

Moderation Analysis

The interaction between brand engagement and brand reputation on brand equity was significant and negative (Table 2), supporting H6 but in the stabilizing rather than the amplifying direction: the association between engagement and brand equity weakened as perceived brand reputation increased (Figure 2). Among respondents perceiving high institutional reputation, brand-equity judgments were comparatively insensitive to individual engagement, whereas among respondents perceiving lower reputation, engagement was more strongly associated with equity.

Figure 2

Simple Slopes for the Association Between Brand Engagement and University Brand Equity at Three Levels of Brand Reputation



Note. BEG = brand engagement; BEQ = university brand equity; BR = brand reputation; *SD* = standard deviation. Slopes are plotted at low (−1 *SD*), mean, and high (+1 *SD*) levels of brand reputation.

Group Differences

Unweighted item means were computed for each construct to preserve the original 1–5 metric scale for the independent *t*-tests and ANOVAs. Brand-equity evaluations did not differ by gender (independent *t*-test, $p = .645$; Levene's $p = .408$) or by main campus (one-way ANOVA, $p = .522$; Levene's $p = .187$). Levene's tests were non-significant ($p > .05$) in all four comparisons, indicating homogeneous variances and supporting use of the reported *t*-test and ANOVA results as is. Evaluations did differ across cohorts (one-way ANOVA, $p = .041$; Levene's $p = .245$): the two earliest cohorts (2021 and 2022), which had the longest exposure to the institution and, for the first cohort, post-graduation labor-market experience, reported higher brand equity than later cohorts. Evaluations also differed across faculties (one-way ANOVA, $p = .002$; Levene's $p = .155$): students of the management and creative economics faculty reported lower brand equity than students of the other three faculties. Table A3 in Appendix A reports the full group comparison results.

These differences are descriptive, but they carry practical information. The lower equity among later cohorts coincides with the period in which undergraduate enrolment grew by 152% and the unit moved from faculty to school status. It is therefore plausible that rapid growth diluted the individual experience of the institution, or that brand attachment simply accumulates with longer exposure; a cross-sectional design cannot separate these explanations. Likewise, the lag in one of the four faculties suggests that brand equity is not evenly distributed within the school, so aggregate figures may hide pockets of weaker attachment. Both patterns support the recommendation in the "Implications" section to monitor brand equity by entry cohort and, we suggest, by faculty, so that early declines become visible before they spread.

Cohort and faculty were treated as descriptive grouping variables rather than as controls in the structural model, for three reasons. First, neither is part of the theoretical model, and neither was hypothesized to alter the paths of interest. Second, the cohort difference is only marginally significant ($p = .041$) and the groups are small (34 to 102 respondents per faculty and 46 to 58 per cohort), so adding dummy-coded controls would consume degrees of freedom and reduce the stability of the estimates in a sample of 256. Third, the group comparisons reported above describe differences in average brand-equity levels between groups, which is a different question from whether the structural paths differ between groups; answering the latter would require multigroup analysis with measurement-invariance testing, for which the subgroup sizes are too small (see the "Limitations and Future Research" section).

DISCUSSION AND CONCLUSIONS

Theoretical Implications

Three takeaways refine how we understand the way university environments generate brand value. First, the university environment appears better modeled as two constructs than as one. Pinar et al. (2020) separated the learning and emotional environments and found that both relate to UBE; the present results add that they do so through different routes, one partly direct and the other fully mediated by engagement. Collapsing them may therefore conceal this difference, and any composite-environment estimate would blend a partially direct and a fully mediated effect. Second, brand engagement appears to be not merely one antecedent among several but the conversion mechanism through which affective institutional experience is linked to brand value; models that connect climate to equity without an engagement pathway are, on this evidence, likely to be mis-specified for the affective route. Third, the direction of reputational moderation is better treated as a boundary condition than as a constant. The study offers a signaling-based rationale: reputation can act as a substitute for, or a complement to, engagement-generated evidence, so the sign of the interaction should depend on how much of the institution's reputational assurance is exogenous to the student's own experience. Nested-brand settings, such as member schools of national universities, are unusually well placed to test this proposition. Moving beyond the separation of environmental dimensions,

this research extends the literature by identifying a likely transmission mechanism, brand engagement, and by indicating that brand reputation is associated with a weaker engagement equity link.

Limitations and Future Research

Five limitations qualify the findings and define the research agenda. First, the design is cross-sectional, so the estimated paths are associations ordered by theory rather than demonstrated causal effects; in particular, the engagement–equity association is compatible with a self-selection account in which pre-existing loyalty dispositions raise both engagement and equity. Longitudinal designs with pre-enrolment baselines are the direct remedy. Second, the evidence comes from a single institution of a specific type: a young school nested in an established national university, which is exactly what made the moderation test informative but restricts generalization; replications should vary the ratio of inherited to earned reputation, comparing free-standing young institutions, established comprehensives, and member schools, to test the substitution account of the negative interaction directly. Third, all constructs were self-reported by students in a single instrument; although procedural remedies (anonymous and voluntary participation) were applied to mitigate common method variance, no statistical diagnostic of it was run, and multi-source designs linking student perceptions to behavioral engagement traces (participation records, digital interaction logs) and to enrolment or retention outcomes would strengthen inference, and multi-stakeholder designs incorporating faculty, alumni and employers would test whether the environment–engagement–equity system holds beyond the student perspective, which remains the dominant sampling frame in this field (Ahmad et al., 2026). Fourth, the sample was a non-probability quota sample recruited online, so self-selection by more engaged students cannot be excluded; this would most plausibly compress the variance of engagement and bias estimated effects downward rather than upward, but probability sampling should nonetheless be attempted where sampling frames permit. Fifth, brand equity was measured as overall preference-based equity; future work could model the dimensional structure of UBE as the outcome and estimate moderated mediation directly. The close empirical relationship between engagement and equity (the “Measurement Model” section), whose HTMT confidence interval extends above 0.90, also warrants replication with alternative equity measures. Larger samples would also allow multigroup analysis, with measurement-invariance testing, across cohorts and faculties.

Conclusion

Drawing on the S–O–R framework, student involvement theory and signaling theory, this study modeled the learning and emotional environments as distinct antecedents of university brand equity, transmitted through student brand engagement and conditioned by brand reputation, and tested the model on 256 students and recent graduates of a newly established interdisciplinary school in Vietnam. The two environmental sub-dimensions appeared functionally distinct: the learning environment was associated with equity both directly and through engagement, whereas the emotional environment was associated with equity only through engagement. Engagement was thereby identified as the likely conversion mechanism of the affective route, and reputation was associated with a stabilizing rather than an amplifying effect on the engagement–equity link—a negative moderation that signaling theory can accommodate once inherited reputational assurance is recognized as a substitute for engagement-generated evidence. Beyond its theoretical contribution, the study offers institutions a tentative allocation rule: fund the learning environment first, couple every investment in emotional climate to engagement touchpoints, and direct engagement spending where reputational assurance is weakest.

IMPLICATIONS

For institutional leaders, the learning environment deserves first claim on resources, prioritizing specialized infrastructure over generic amenity upgrades. Emotional climate investments remain warranted but must be coupled with concrete participation touchpoints. Practically, rather than merely enhancing campus landscaping, universities should develop smart group-study zones, club spaces, and peer-mentoring programs that catalyze active interaction. At a macro-policy level, infrastructural expansion is insufficient without concurrent student engagement frameworks. Furthermore, engagement spending appears to yield the highest marginal return where reputational assurance is lowest. Conversely, where institutional reputation is already high, strategy should shift from generating basic engagement to deepening it. This requires moving beyond superficial extracurriculars to offer advanced faculty co-research opportunities, corporate internships, and international exchange programs. Finally, institutions should monitor brand equity by entry cohort and by faculty as an early-warning indicator, because the lower equity found among later cohorts and in one faculty (the "Group Differences" section) is the kind of pattern that aggregate figures hide, and because improvements an institution makes may go unnoticed by students unless they are measured and communicated (Ostojić & Leko Šimić, 2026). Leadership can operationalize this by implementing annual cohort-tracking surveys utilizing specific metrics, notably the Net Promoter Score (NPS), perceived brand quality, and students' intention to stay or recommend the institution.

Author Contributions: Conceptualization, Nguyen Van Ha, Hoang Trong Nghia and Nguyen Thi Thu Huong; methodology, Nguyen Van Ha and Nguyen Thi Thu Huong; software, Nguyen Van Ha and Nguyen Thi Thu Huong; validation, Nguyen Van Ha and Nguyen Thi Thu Huong; formal analysis, Nguyen Van Ha; investigation, Nguyen Van Ha, Hoang Trong Nghia, Tran Viet Dung and Nguyen Thi Thu Huong; resources, Hoang Trong Nghia, Tran Viet Dung and Nguyen Thi Thu Huong; data curation, resources; writing—original draft preparation, Nguyen Van Ha; writing—review and editing, Nguyen Van Ha; visualization, Nguyen Van Ha; supervision, Hoang Trong Nghia; project administration, Hoang Trong Nghia. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Institutional Review Board Statement: Ethical review and approval were not required for this study. Participation was voluntary and anonymous, and informed consent was obtained on the opening page of the questionnaire.

Acknowledgments: During the preparation of this manuscript, the authors used Claude Sonnet 5.5 (Anthropic) for the purposes of copyediting and language polishing to improve the clarity of expression. No generative AI tool was used to generate scientific content, research data, or references, or to conduct the data analysis. The authors have reviewed and edited the output and take full responsibility for the content of this publication.

Conflicts of Interest: The authors declare no conflicts of interest.

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 the publisher and/or the editor(s). The publisher 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.

REFERENCES

Aaker, D. A. (1991). *Managing brand equity: Capitalizing on the value of a brand name*. The Free Press.

Ahmad, S. A. B., Amin, M., Ahmad, F. S., Cobanoglu, C., & Chen, W. (2026). A multistakeholder model of brand equity in higher education: A scoping review using TCM and ADO frameworks. *Higher Education Policy*. Advance online publication. doi:10.1057/s41307-026-00475-x

Astin, A. W. (1984). Student involvement: A developmental theory for higher education. *Journal of College Student Personnel, 25*(4), 297-308.

Ayre, C., & Scally, A. J. (2014). Critical values for Lawshe's content validity ratio: Revisiting the original methods of calculation. *Measurement and Evaluation in Counseling and Development, 47*(1), 79-86. doi:10.1177/0748175613513808

Bitner, M. J. (1992). Servicescapes: The impact of physical surroundings on customers and employees. *Journal of Marketing, 56*(2), 57-71. doi:10.1177/002224299205600205

Blankson, C., Boakye, K. G., Prybutok, V. R., Mahmoud, M. A., & Opare, G. (2025). Brands in crisis: Customer loyalty and corporate reputation. *Marketing Intelligence & Planning*. Advance online publication. doi:10.1108/MIP-07-2024-0508

Boulton, C. A., Kent, C., & Williams, H. T. P. (2018). Virtual learning environment engagement and learning outcomes at a 'bricks-and-mortar' university. *Computers & Education, 126,* 129-142. doi:10.1016/j.compedu.2018.06.031

Castro-Gómez, J., Sánchez-Torres, J. A., & Ortíz-Rendón, P. A. (2024). Influence of sustainability in the positioning of the university brand: Study in universities in Medellín-Colombia. *Heliyon, 10*(9), e30569. doi:10.1016/j.heliyon.2024.e30569

Cayolla, R., Escadas, M., McCullough, B. P., Biscaia, R., Cabilhas, A., & Santos, T. M. (2023). Does pro-environmental attitude predict pro-environmental behavior? Comparing sustainability connection in emotional and cognitive environments among football fans and university students. *Heliyon, 9*(11), e21758. doi:10.1016/j.heliyon.2023.e21758

Chen, C., Fan, J., & Jury, M. (2017). Are perceived learning environments related to subjective well-being? A visit to university students. *Learning and Individual Differences, 54,* 226-233. doi:10.1016/j.lindif.2017.01.001

Chen, Z., & Chen, Y. (2025). Which educational environment is better for college students' social-emotional competency development, public or private? An investigation of 100 Chinese universities. *Acta Psychologica, 256,* Article 105058. doi:10.1016/j.actpsy.2025.105058

Chou, C.-H., & Chen, D.-N. (2025). Effect of brand love on brand defense mediated by customer brand engagement: The moderated mediation role of regulatory focus. *Acta Psychologica, 260,* Article 105515. doi:10.1016/j.actpsy.2025.105515

Coffie, I. S., Müller, R., Ocloo, E. C., & de Klerk, N. (2025). Building brand equity through new product introduction: The moderation mediation effect of brand storytelling and consumer engagement. *Journal of Product & Brand Management*. Advance online publication. doi:10.1108/JPBM-10-2024-5572

Erdem, T., & Swait, J. (1998). Brand equity as a signaling phenomenon. *Journal of Consumer Psychology, 7*(2), 131-157. doi:10.1207/s15327663jcp0702_02

Foroudi, P., Yu, Q., Gupta, S., & Foroudi, M. M. (2019). Enhancing university brand image and reputation through customer value co-creation behaviour. *Technological Forecasting and Social Change, 138,* 218-227. doi:10.1016/j.techfore.2018.09.006

Gray, B. J., Fam, K. S., & Llanes, V. A. (2003). Branding universities in Asian markets. *Journal of Product & Brand Management, 12*(2), 108-120. doi:10.1108/10610420310469797

Guo, J.-P., Lv, S., Wang, S.-C., Wei, S.-M., Guo, Y.-R., & Yang, L.-Y. (2023). Reciprocal modeling of university students' perceptions of the learning environment, engagement, and learning outcome: A longitudinal study. *Learning and Instruction, 83,* Article 101692. doi:10.1016/j.learninstruc.2022.101692

Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review, 31*(1), 2-24. doi:10.1108/EBR-11-2018-0203

Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science, 43*(1), 115-135. doi:10.1007/s11747-014-0403-8

Hollebeek, L. D. (2011). Demystifying customer brand engagement: Exploring the loyalty nexus. *Journal of Marketing Management, 27*(7-8), 785-807. doi:10.1080/0267257X.2011.599493

Huapaya-Capcha, Y. A., Shiguay Guizado, G. A., Abarca Pizarro, O. F., & Colán Hernández, B. A. (2026). Social responsibility and institutional image in a public university in Peru. *Journal of Interdisciplinary Studies in Education, 15*(2), 195-218. doi:10.32674/xrzk8a63

Ibrahim, A. A., Ahmad, S. Z., Abu Bakar, A. R., & El-Adly, M. (2025). Social media marketing's impact on brand equity and loyalty in higher education: Customer engagement's role. *Journal of International Education in Business, 18*(4), 527-546. doi:10.1108/JIEB-08-2024-0105

Juhaidi, A., Hartini, S., Hidayati, N., Fadillah, R., Ranti, M. G., Fitria, A., Badrian, Salamah, Mahmudah, Ma'ruf, H., Saputri, R. A., Suriagiri, Huriyah, & Rahmi, N. (2026). From scandal to redemption: Exploring word-of-mouth effects on professor brand equity in Indonesia. *Social Sciences & Humanities Open, 13,* Article 102371. doi:10.1016/j.ssaho.2025.102371

Kahu, E. R. (2013). Framing student engagement in higher education. *Studies in Higher Education, 38*(5), 758-773. doi:10.1080/03075079.2011.598505

Keller, K. L. (1993). Conceptualizing, measuring, and managing customer-based brand equity. *Journal of Marketing, 57*(1), 1-22. doi:10.1177/002224299305700101

Kock, N., & Hadaya, P. (2018). Minimum sample size estimation in PLS-SEM: The inverse square root and gamma-exponential methods. *Information Systems Journal, 28*(1), 227-261. doi:10.1111/isj.12131

Lawshe, C. H. (1975). A quantitative approach to content validity. *Personnel Psychology, 28*(4), 563-575. doi:10.1111/j.1744-6570.1975.tb01393.x

Liu, Y.-L. E., Lee, T.-P., & Huang, Y.-M. (2023). Enhancing university students' creative confidence, learning motivation, and team creative performance in design thinking using a digital visual collaborative environment. *Thinking Skills and Creativity, 50,* Article 101388. doi:10.1016/j.tsc.2023.101388

Mehrabian, A., & Russell, J. A. (1974). *An approach to environmental psychology*. MIT Press.

Mourad, M., Ennew, C., & Kortam, W. (2011). Brand equity in higher education. *Marketing Intelligence & Planning, 29*(4), 403-420. doi:10.1108/02634501111138563

Nguyen, L. T., Kanjug, I., Lowatcharin, G., Manakul, T., Poonpon, K., Sarakorn, W., Somabut, A., Srisawasdi, N., Traiyarach, S., & Tuamsuk, K. (2022). How teachers manage their classroom in the digital learning environment—Experiences from the University Smart Learning Project. *Heliyon, 8*(10), e10817. doi:10.1016/j.heliyon.2022.e10817

Ostojić, M., & Leko Šimić, M. (2026). Students' perception of private university brand value in Croatia—What has changed in 5 years? *Administrative Sciences, 16*(3), Article 118. doi:10.3390/admsci16030118

Peco-Torres, F., Jones, A., Polo-Peña, A. I., & Frías-Jamilena, D. M. (2025). Customer brand engagement via value co-creation with hotel online media and travel websites and its effect on brand equity: The moderating role of culture. *Journal of Hospitality and Tourism Technology*. Advance online publication. doi:10.1108/JHTT-06-2024-0362

Pinar, M., Girard, T., & Basfirinci, C. (2020). Examining the relationship between brand equity dimensions and university brand equity: An empirical study in Turkey. *International Journal of Educational Management, 34*(7), 1119-1141. doi:10.1108/IJEM-08-2019-0313

Quan, Q., Gao, Y., & Wang, Q. (2025). The impact of teacher emotional support on students' engagement in AI-mediated English learning environments: The mediating role of resilience and self-efficacy. *Acta Psychologica, 260,* Article 105766. doi:10.1016/j.actpsy.2025.105766

Rather, R. A., Rasul, T., Khan, H., & Khan, I. (2024). Unveiling the dynamics between consumer brand engagement, experience, and relationship quality towards luxury hotel brands: Moderating investigation of brand reputation. *International Journal of Hospitality Management, 116,* Article 103572. doi:10.1016/j.ijhm.2023.103572

Sampah, S. N. A., Nabang, M., Krampa, E. K., Issah, M., Koduah, F., Essel, H. B., & Adu-Agyem, J. (2026). Generative AI competence and student engagement in higher education: Mediating roles of utilization, autonomy, and formal learning. *Journal of Interdisciplinary Studies in Education, 15*(2), 109-146. doi:10.32674/3s3cx241

Samuilik, I., Maksimova, N., Briede, L., & Kozlovska, O. (2026). University students' emotional states and academic engagement: Implications for sustainable learning practices in higher education. *Journal of Teacher Education for Sustainability, 27*(2), 206-218. doi:10.2478/jtes-2025-0025

Savolainen, T. (2023). A safe learning environment from the perspective of Laurea University of Applied Sciences safety, security and risk management students and staff. *Heliyon, 9*(3), e12836. doi:10.1016/j.heliyon.2023.e12836

Shim, S., Liu, P., & Hwang, J. (2026). Can brand reputation reduce consumers' perceived risks of edible cups in the coffee industry? *International Journal of Hospitality Management, 133,* Article 104515. doi:10.1016/j.ijhm.2025.104515

Spence, M. (1973). Job market signaling. *The Quarterly Journal of Economics, 87*(3), 355-374. doi:10.2307/1882010

Sun, X., Zhang, Y., & Feng, J. (2024). Impact of online information on the pricing and profits of firms with different levels of brand reputation. *Information & Management, 61*(1), Article 103882. doi:10.1016/j.im.2023.103882

Tang, K. L., Tan, P. M., & Loo, W. H. (2025). Influence of social media marketing communications on brand equity: From Malaysian higher education institutions' perspective. *Journal of Applied Research in Higher Education*. Advance online publication. doi:10.1108/JARHE-02-2025-0159

Toding, M., Mädamürk, K., Venesaar, U., & Malleus, E. (2023). Teachers' mindset and attitudes towards learners and learning environment to support students' entrepreneurial attitudes in universities. *The International Journal of Management Education, 21*(1), Article 100769. doi:10.1016/j.ijme.2023.100769

Tran, T. L. N., Tran, T. M., Ngo, T. T., Le, D. D. K., Phan, X. D., & Nguyen, T. N. (2025). The impact of university brand equity on student satisfaction and engagement: A study of Vietnamese universities. *International Review of Management and Marketing, 15*(3), 164-176. doi:10.32479/irmm.18121

Waluyo, B., & Balazon, F. G. (2024). Exploring the impact of gamified learning on positive psychology in CALL environments: A mixed-methods study with Thai university students. *Acta Psychologica, 251,* Article 104638. doi:10.1016/j.actpsy.2024.104638

Xiao, Y., Nguyen, T. T. H., Nguyen, H. N., Phan, D. Q., Cao, T. K., & Dao, T. H. A. (2023). University brand: A systematic literature review. *Heliyon, 9*(6), e16825. doi:10.1016/j.heliyon.2023.e16825

Yoo, B., & Donthu, N. (2001). Developing and validating a multidimensional consumer-based brand equity scale. *Journal of Business Research, 52*(1), 1-14. doi:10.1016/S0148-2963(99)00098-3

Zhao, X., Lynch, J. G., Jr., & Chen, Q. (2010). Reconsidering Baron and Kenny: Myths and truths about mediation analysis. *Journal of Consumer Research, 37*(2), 197-206. doi:10.1086/651257

NGUYEN VAN HA is a student majoring in Brand Management at the Faculty of Management and Creative Economy, VNU School of Interdisciplinary Sciences and Arts, Vietnam National University, Hanoi, Vietnam. An outstanding student, she has engaged in academic research, won a faculty-level award, and published an international paper titled "University Brand Equity in Higher Education: An Integrative Review of Environment, Engagement and Reputation" in the Journal of Arts, Humanities and Social Science. Email: 22090039@vnu.edu.vn

HOANG TRONG NGHIA, PhD, is a Vice Rector of VNU School of Interdisciplinary Sciences and Arts, Vietnam National University, Hanoi, Vietnam. He has participated in numerous university-level and ministry-level research projects on university governance. Email: nghiaht@vnu.edu.vn

TRAN VIET DUNG, PhD, is Head of the Faculty of Management and Creative Economy, VNU School of Interdisciplinary Sciences and Arts, Vietnam National University, Hanoi, Vietnam. His research spans a wide array of topics, with a particular focus on the creative economy, University brand management, and leadership management. Email: tranvietdung@vnu.edu.vn

NGUYEN THI THU HUONG (Corresponding author), PhD. She received her PhD in Management Business Administration from Hunan University, China. She is a lecturer in green marketing and brand management at the Faculty of Management and Creative Economy, VNU School of Interdisciplinary Sciences and Arts, Vietnam National University, Hanoi, Vietnam. She teaches and publishes on green consumption, brand management, greenwashing behavior, marketing ethics, and university branding. Her research has appeared in internationally recognized journals such as Journal of Business Economics and Management; Tourism and Hospitality Management; Ianna Journal of Interdisciplinary Studies; Heritage and Sustainable Development; Heliyon; Sustainability,... Email: huong1485.sis@vnu.edu.vn

APPENDIX A

Table A1 reports the full sample characteristics (n = 256). Table A2 reports the discriminant validity results referred to in the Measurement Model section: HTMT ratios above the diagonal and the Fornell–Larcker criterion below the diagonal and Table A3 reports differences across demographic groups.

Table A1
Sample Characteristics (n = 256)

Characteristic	n	%
Gender		
Female	175	68.36
Male	81	31.64
Cohort		
2021	46	17.97
2022	54	21.09
2023	58	22.66
2024	52	20.31
2025	46	17.97

Characteristic	n	%
Faculty		
Management and creative economics	102	39.84
Cultural industries and heritage	68	26.56
Arts and design	52	20.31
Architecture, urbanism and sustainability	34	13.28
Main campus		
My Dinh	171	66.80
Other campus	85	33.20
Employment status		
Working / interning / self-employed	176	68.75
Not currently working	80	31.25

Table A2

Discriminant Validity: HTMT Ratios (Above Diagonal) and Fornell–Larcker Criterion (Below Diagonal)

	BEG	BEQ	BR	EE	LE
BEG	**.786**	.893	.760	.706	.763
BEQ	.794	**.888**	.772	.691	.779
BR	.706	.700	**.854**	.590	.820
EE	.598	.577	.507	**.759**	.708
LE	.655	.653	.717	.553	**.794**

Note. HTMT = heterotrait–monotrait ratio of correlations. LE = learning environment; EE = emotional environment; BEG = brand engagement; BR = brand reputation; BEQ = university brand equity. HTMT values (above the diagonal) below 0.85 (conservative) or 0.90 (liberal) support discriminant validity; the BEQ–BEG ratio (0.893; 95% CI [0.831, 0.943]) lies between the two cut-offs and is discussed in the text. Diagonal elements (bold) are the square roots of the average variance extracted (AVE); elements below the diagonal are inter-construct correlations. The Fornell–Larcker criterion is met when each diagonal value exceeds all correlations in its row and column, which holds for every construct except BEG ($\sqrt{AVE} = 0.786$, $r = 0.794$ with BEQ).

Table A3

Differences in University Brand Equity Across Demographic Groups

Grouping variable	Test	Levene's test *p*	Test statistic *p*	Conclusion
Gender	Independent *t*-test	.408	.645	No difference
Cohort	One-way ANOVA	.245	.041	Difference
Faculty	One-way ANOVA	.155	.002	Difference
Main campus	One-way ANOVA	.187	.522	No difference

Note. Levene's test evaluates the assumption of homogeneity of variance across groups; a non-significant Levene's p (> .05) supports using the reported *t*-test or ANOVA result as is. A test-statistic $p < .05$ indicates a statistically significant difference in university brand equity across the levels of that grouping variable.

APPENDIX B

Figure B1

Structural Model Results

