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AI Literacy as a Driver of University Brand Equity

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Introduction

In the Asia-Pacific region, increasing competition in higher education has elevated the importance of institutional reputation. While many universities are investing in AI-related infrastructure and education, it remains unclear whether these efforts translate into improved university image or stakeholder perception.

This study explores the role of AI literacy as a strategic factor in shaping university reputation, addressing a critical research gap in the intersection between digital capabilities and brand equity.

Research Questions

Main RQ: Does AI literacy influence students' perception of university reputation?

Hypotheses

H1: Affective AI literacy positively impacts university reputation.

H2: Behavioral AI literacy positively impacts university reputation.

H3: Cognitive AI literacy positively impacts university reputation.

H4: Ethical AI literacy positively impacts university reputation.

Methodologies

Sample

480 valid responses from undergraduate and graduate students in Taiwan. Data collected via online survey.

Instruments

AI Literacy: 4 dimensions based on Ng et al. (2024) – Affective, Behavioral, Cognitive, Ethical

University Brand Equity: Based on Pinar et al. (2014) – Awareness, Reputation, Trust

Figures

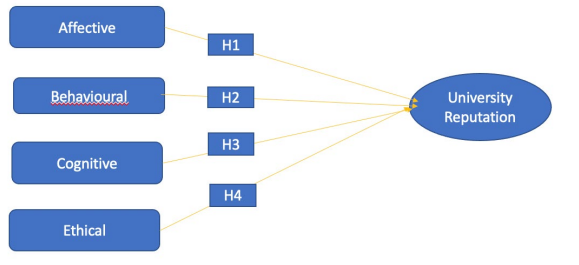
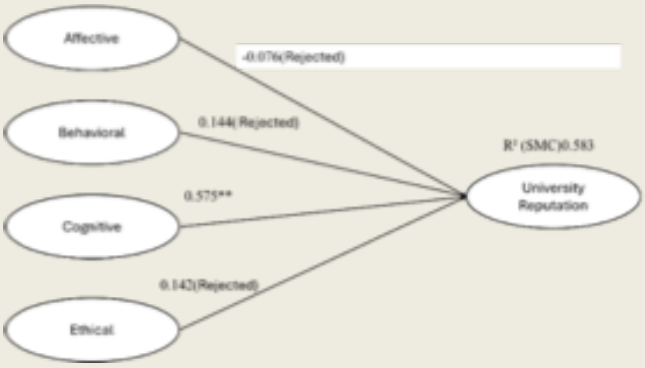


Figure 1. Research hypothesis model based on AI literacy (ABCE)



Hypothesis	Hypothesized Relationship	Path Coefficient	t-value	Conclusion
H1	AFF→UR	-0.076	-0.164	Rejected
H2	BEH→UR	0.144	0.373	Rejected
H3	COG→UR	0.575**	3.157	Supported
H4	ETH→UR	0.142	1.113	Rejected

Model Fit indices: x^2/df= 1.979, GFI= 0.916, RMSEA= 0.045, SRMR= 0.0341, AGFI= 0.899, NFI= 0.904, TLI= 0.944, IFI= 0.950, CFI= 0.950

R^2 values: UR=0.583

Significance levels: *** p-value < 0.001, **p-value < 0.01, *p-value < 0.05, #p-value < 0.1

Figure 2. Structural equation modeling results

Tables

Table 1. Sampling and participants

Items	Category	n	Percentage
Gender	Male	238	49.58%
	Female	242	50.42%
Programs	Undergraduate	361	75.21%
	Graduate(full-time)	83	17.29%
	Graduate(part-time)	36	7.50%
University Type	Public Comprehensive	154	32.08%
	Private Comprehensive	160	33.33%
	Public UST	87	18.13%
	Private UST	79	16.46%
Majors	Business & Management	162	33.75%
	Engineer	178	37.08%
	Social Science	75	15.63%
	Education	36	7.50%
	Arts & Design	27	5.63%
	Others	2	0.42%
Participation in Intel academic activities	Yes	282	58.75%
	No	198	41.25%
Taking AI-related courses	Tes	405	84.38%
	No	75	15.63%

Table 2. Descriptive statistic

Variable	*Valid N*	*Mean*	*Median*	*Std. Deviation*	*Variance*	*Skewness*	*Kurtosis*
Gender	480	1.5	2.0	0.501	0.251	-0.017	-2.008
Age	480	1.0	1.0	0.0	0.0		
evel of Study	480	1.32	1.0	0.608	0.369	1.713	1.724
e of University	480	2.19	2.0	1.062	1.127	0.446	-1.03
Major	480	2.15	2.0	1.16	1.346	1.018	0.428
elated Courses	480	1.16	1.0	0.363	0.132	1.899	1.614

Table 3. Discriminant validity

Construct	Correlation	Standard errors	2 Standard errors	Confidence Interval		Discriminant Validity
AFF-UR	0.718	0.033	0.066	0.652	0.784	YES
AFF-COG	0.922	0.019	0.038	0.884	0.96	YES
AFF-ETH	0.88	0.022	0.044	0.836	0.924	YES
AFF-BEH	0.966	0.016	0.032	0.934	0.998	YES
UR-COG	0.758	0.029	0.058	0.7	0.816	YES
UR-ETH	0.695	0.033	0.066	0.629	0.761	YES
UR-BEH	0.714	0.032	0.064	0.65	0.778	YES
COG-ETH	0.863	0.021	0.042	0.821	0.905	YES
BEH-COG	0.908	0.018	0.036	0.872	0.944	YES
BEH-ETH	0.855	0.022	0.044	0.811	0.899	YES

Conclusion

This study confirms that only cognitive AI literacy has a significant impact on university reputation, while affective, behavioral, and ethical dimensions do not. The findings highlight the need to differentiate AI literacy components in educational research. Due to the cross-sectional design, causal inferences are limited, and further validation across diverse contexts is needed.

This aligns with recent conceptualizations of AI literacy (Ng et al., 2024) and university brand equity theory (Pinar et al., 2014), supported by global skills frameworks (OECD, 2023).

Implications and Future Work

Implications

Cognitive AI literacy significantly shapes students' perception of university reputation. Universities should emphasize conceptual AI education to enhance brand value and future readiness.

Future Work

Future studies may compare countries, academic disciplines, and institution types. Longitudinal and investment-based models are also recommended.