

Examining the Role of Industry Partnerships, Competencies, and Career Services in Shaping Graduate Employability and Employer Satisfaction

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Abstract

Aim/Purpose: This study examined the roles of curriculum relevance, work-based education, industry partnerships, career services, skills, and digital competencies in shaping graduate employability outcomes and employer satisfaction within the Thai higher education context. Drawing on employer perspectives and institutional practices, the study explored how higher education institutions can better prepare graduates for evolving labor market demands. It examined the extent to which these institutional factors contribute to workplace readiness, career success, and employer perceptions of graduate performance. By integrating evidence from international literature and the Thai context, the study provides a comprehensive framework for understanding the drivers of employability and offers insights for strengthening workforce development and sustainable economic competitiveness.

Methodology: In this study, a quantitative cross-sectional research design was employed. Data were collected through a structured questionnaire administered to 200 employers and industry supervisors with direct experience hiring, supervising, or evaluating graduates. Participants were selected using purposive and snowball sampling to ensure relevant expertise, followed by snowball sampling to broaden industry representation. The survey instrument was adapted from established employability and work-based education frameworks and measured seven constructs using a five-point Likert scale. Before full deployment, the instrument was pilot tested with 50 employers to assess clarity, reliability, and content validity. Data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) to evaluate the measurement and structural models. Reliability and validity were assessed using Cronbach's alpha, composite reliability, factor loadings, average variance extracted, and discriminant validity measures, ensuring the robustness of the findings.

Findings: The findings demonstrated that graduate employability outcomes were the central determinant of employer satisfaction, exerting a strong positive effect ($\beta = .672, p < .001$) and explaining 45.1% of the variance, indicating that employers prioritized graduates' work readiness, performance capability, and practical competencies over institutional reputation. Among institutional factors, career services ($\beta = .281, p = .017$) and graduate skills and competencies ($\beta = .269, p = .008$) were the strongest predictors of employability outcomes, underscoring the critical role of structured career guidance, employability coaching, and competency-based skill development in facilitating effective school-to-work transitions. Industry partnerships ($\beta = .256, p = .001$) and work-based education ($\beta = .113, p = .013$) also significantly enhanced employability by aligning graduate capabilities with labor market needs through employer engagement, internships, cooperative education, and applied learning opportunities. In contrast, curriculum design showed no significant direct effect on employability outcomes ($\beta = .040, p = .662$), suggesting that formal curricula alone are insufficient without experiential learning and career support mechanisms. Overall, the model demonstrated strong reliability, validity, and explanatory power, explaining 74.6% of the variance in employability outcomes and confirming the robustness of the selected institutional determinants.

Contribution/Impact on Society: This study contributes to the graduate employability literature by examining relationships among industry partnerships, skills and competencies, work-based education, career services, employability outcomes, and employer satisfaction within the Thai higher education context. The findings indicate that career services, skills and competencies, industry partnerships, and work-based education are positively associated with employability outcomes, while curriculum design does not demonstrate a significant direct effect. The study also found that employability outcomes were positively associated with employer satisfaction. These findings provide empirical evidence that may inform higher education institutions and policymakers in designing strategies to strengthen the alignment between educational provision and labor market expectations.

Recommendations: To enhance graduate employability and employer satisfaction, higher education institutions should strengthen industry partnerships through expanded internships, cooperative education, and employer-led projects to better align with labor market needs. Institutions should also enhance both technical and transversal skills development, including digital literacy, critical thinking, communication, and adaptability through competency-based curricula. Work-based education should be systematically embedded into academic programs to provide sustained experiential learning and industry exposure. In addition, career services should be modernized through digital platforms, AI-enabled tools, and personalized mentoring to support career planning and job placement. Finally, structured mechanisms for employer feedback should be integrated into curriculum design and quality assurance processes to ensure continuous improvement and labor market responsiveness. Collectively, these strategies require coordinated action among universities, employers, and policymakers to strengthen the education-to-employment pathway.

Research Limitation: This study was limited by its focus on a restricted number of higher education institutions and industries in Thailand, which may constrain the generalizability of findings. The reliance on self-reported employer data may have introduced common method, social desirability, or perceptual biases. In addition, the study examined a defined set of institutional factors, while excluding broader contextual influences such as organizational culture, governance structures, labor market conditions, and policy environments. Finally, the cross-sectional design limited its ability to capture changes in employability outcomes over time.

Future Research: Future studies should employ longitudinal or mixed method approaches to capture changes in employability outcomes and employer satisfaction over time. Expanding the scope to include multiple institutions, industries, and contextual variables such as organizational culture and national policy frameworks would further enhance understanding.

Keywords: *Graduate employability outcomes, curriculum development, employer satisfaction*

Introduction

Higher education institutions worldwide face mounting pressure to ensure that graduates possess not only strong academic foundations, but also the practical skills required to succeed in increasingly competitive labor markets (QS Quacquarelli Symonds, 2024; OECD, 2025). Graduate employability—the capacity to secure and sustain meaningful employment through a combination of knowledge, technical expertise, and transferable skills—has thus become a central concern for policymakers, employers, and educators alike (Yorke, 2006).

In Thailand, as in many other countries, concerns persist regarding the misalignment between university curricula and the competencies demanded by employers. Employers frequently report difficulty in finding candidates who combine technical proficiency with soft skills such as communication, adaptability, and problem-solving (OECD, 2023). This persistent skills gap has intensified the global emphasis on workforce development, defined as the strategic cultivation of a skilled and adaptable labor force capable of meeting both current and emerging economic demands (World Bank Group, 2021).

One strategy that has gained prominence in this context is work-based education (WBE), also referred to as work-integrated learning. WBE integrates academic instruction with structured workplace experience, enabling students to apply theoretical knowledge in practice. Empirical evidence has indicated that WBE enhances job readiness, improves productivity, and strengthens overall employability (Cooper et al., 2010; Jackson, 2015; CEDEFOP, 2021). Its effectiveness, however, depends heavily on strong and sustainable collaboration between higher education institutions and industry stakeholders—a partnership model that remains underdeveloped in many systems.

Complementary measures to narrow the education–employment gap include curriculum redesign informed by employer feedback and technological trends (Mason et al., 2009; Kuo et al., 2014), the enhancement of career services and counselling to guide students toward relevant opportunities (Watts et al., 2014), and the adoption of digital platforms to facilitate employer engagement and improve graduate visibility (Van Laar et al., 2017). Sustained industry partnerships are particularly critical to ensure program relevance and provide students with placement opportunities (Jackson & Bridgstock, 2021).

Despite reform efforts, youth unemployment and underemployment remain high globally (OECD, 2025). A key challenge is the persistent mismatch between classroom learning and workplace demands, especially in fast-changing sectors such as digital marketing, data analytics, and e-commerce (OECD, 2023; World Economic Forum, 2023). Addressing this gap requires a systematic understanding of employer expectations and their integration into academic programs, career services, and institutional strategies.

In Thailand, graduate employability reflects both enabling factors and ongoing constraints. Curriculum relevance, experiential learning, and industry–institution collaboration are particularly important, while gaps in digital competencies and career support continue to limit outcomes. This study situates these issues within existing scholarship and policy discussions to better understand employer satisfaction and graduate employability.

Although graduate employability has been widely studied, most research has focused on individual factors or graduate perspectives in isolation. Limited attention has been given to the combined effects of curriculum relevance, work-based education, industry partnerships, career services, and competencies within an integrated framework. Moreover, employer satisfaction remains underexplored, particularly in Thailand. As a result, the mechanisms linking institutional practices, graduate employability, and employer satisfaction remain poorly understood.

Objectives

1. To examine the effects of curriculum relevance, work-based education, industry partnerships, career services, and skills and competencies on graduate employability outcomes.
2. To assess the influence of employability outcomes on employer satisfaction within the Thai higher education context.
3. To investigate the factors influencing the alignment between higher education and labor market demands by integrating employer perspectives, institutional experiences, and evidence from international literature.

This research study highlighted the most policy-relevant institutional dimensions, namely industry partnerships, skills and competencies, and career services, as these factors have received increasing attention in higher education and workforce development policy. Curriculum relevance and work-based education were incorporated as complementary predictors within the broader employability framework and are examined alongside the other institutional factors in the proposed model.

Graduate employability was conceptualized as a mediating construct because it represents the mechanism through which institutional practices are translated into employer satisfaction. In this study, institutional factors were expected to enhance graduates' employability outcomes, which subsequently influence employers' perceptions of workforce readiness and overall satisfaction with graduate performance.

Literature Review and Hypotheses

Theoretical Foundation

This study was grounded in Human Capital Theory (Becker, 1964) and Career Construction Theory (Savickas, 2005). Human Capital Theory suggests that investments in education, skills development, workplace learning, and career preparation enhance individuals' productivity and labor market value. In this study, curriculum relevance, industry partnerships, work-based education, career services, and skills and competencies are viewed as institutional mechanisms that contribute to the development of graduates' human capital and employability.

Career Construction Theory complements this perspective by emphasizing career adaptability, lifelong learning, and the ability to navigate changing labor market conditions. This theory highlights the importance of career services, experiential learning, and competency development in supporting successful transitions from education to employment. Together, these theories provide a foundation for understanding how institutional practices influence graduate employability and how employability serves as a mediating mechanism linking educational experiences with employer satisfaction.

Industry-academia partnerships are widely recognized as critical mechanisms for aligning higher education with labor market needs, as they embed practical experience and industry insights into academic programs. These partnerships encompass curriculum co-design, applied research, and talent pipeline initiatives, ensuring that universities remain responsive to evolving technological and economic demands (Jackson, 2015; OECD, 2020). Structured collaborations provide students with mentorship, professional networks, and sector-specific training, which enhance employability and prepare graduates for dynamic, technology-driven labor markets (Bari, 2025).

In an era of rapid digital transformation and socio-economic change, the development of future-ready skills and competencies has become a cornerstone of higher education reform, enabling graduates to adapt to evolving workplace demands and technological advancements. Competency-based education has been widely adopted by higher education institutions to develop practical, digital, and socio-emotional skills that enhance graduate employability and adaptability (Yorke, 2006). Critical competencies include analytical thinking, active learning, resilience, technological literacy, and systems thinking (World Economic Forum, 2023). These competencies can be developed through problem-based learning, collaborative projects, reflective practices, portfolio assessment, and the integration of industry-relevant digital tools. Such educational approaches support the development of ethical reasoning, communication skills, adaptability, and lifelong learning capabilities, which are increasingly important in dynamic labor markets.

Curriculum design plays a pivotal role in aligning graduate capabilities with employer expectations. Outcome-Based Education (OBE) emphasizes measurable competencies to ensure that learning outcomes are directly linked to professional skills required in workplaces (Basilaia & Kvavadze, 2020). Modular and interdisciplinary curricula embed sustainability, entrepreneurship, and digital literacy to prepare graduates for complex global challenges (UNESCO, 2020). Research has demonstrated that employer input in curriculum design enhances responsiveness to emerging skills and labor market shifts (OECD, 2023), while experiential initiatives, including capstone projects, scenario-based simulations, and interdisciplinary problem-solving bridge theory and practice (Billett, 2011).

Work-Based Education (WBE) further reinforces employability by immersing students in authentic workplace contexts through cooperative education, apprenticeships, and live industry projects (Smith et al., 2014). These experiences develop transferable skills, including problem-solving, teamwork, and communication, while providing employers with early access to emerging talent (Raelin, 1997).

In Thailand, higher education institutions have increasingly adopted dual-track education and work-integrated learning approaches to better align higher education and labor market needs. These models enable students to acquire practical experience alongside academic learning, facilitating the development of industry-relevant competencies and supporting smoother transitions from education to employment (Jackson & Wilton, 2016; Jackson & Bridgstock, 2021). Accordingly, work-based education has been widely recognized as an important contributor to graduate career readiness, workplace adaptability, and institutional responsiveness to evolving labor market needs.

Career services and counseling (CAR) provide structured guidance throughout students' educational trajectories, helping them align their strengths with evolving opportunities and fostering career adaptability and self-efficacy (Savickas, 2013). Digital innovations, including e-portfolios, labor market analytics, and AI-driven assessments enhance personalization and institutional engagement with employers (OECD, 2023). Research highlights that micro-credentialing and targeted workshops improve graduates' preparedness for job searches and career transitions (Ferns et al., 2025).

Employability outcomes (EMP) reflect the extent to which graduates possess the knowledge, skills, competencies, and adaptive capabilities required to meet labor market expectations (Yorke, 2006). These outcomes are commonly assessed through indicators such as employment attainment, workplace readiness, career progression, adaptability, and lifelong learning capacity (Andrews & Higson, 2008). Previous studies suggest that employability is strengthened through a combination of academic learning, work-integrated education, industry engagement, and career development support (Bridgstock, 2009; Jackson & Bridgstock, 2021). Such experiences help graduates develop analytical reasoning, communication skills, professional identity, entrepreneurial thinking, ethical decision-making, and digital competencies, which are increasingly valued in dynamic labor markets.

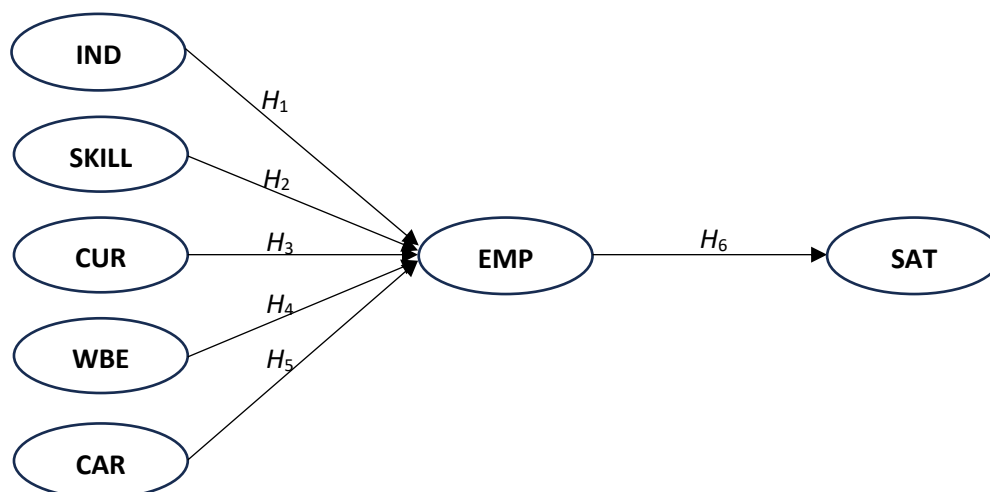
Within the proposed framework, employability outcomes were conceptualized as a mediating construct linking institutional practices and employer satisfaction. Institutional interventions were expected to enhance graduates' skills, adaptability, and workplace readiness, which subsequently influence employers' evaluations of graduate performance and organizational fit.

Employer Satisfaction (SAT) reflects how well graduates meet organizational expectations in skills, competencies, and workplace performance (Yorke, 2006; García-Aracil & Van der Velden, 2008). It encompasses cognitive skills (technical knowledge, problem-solving, sector expertise) and behavioral attributes such as interpersonal skills, adaptability, work ethic, communication, and organizational fit (Andrews & Higson, 2008; Bridgstock, 2009; Jackson & Wilton, 2016). Satisfaction indicates higher education effectiveness and is shaped by curriculum quality, work-based learning, soft skill development, and responsiveness to industry needs. High employer satisfaction improves graduate outcomes, reduces onboarding costs, enhances organizational performance, and informs curriculum design, driving continuous institutional improvement.

Hypotheses

- H_1 : Industry partnerships influence employability outcomes.
- H_2 : Skills and competencies influence employability outcomes.
- H_3 : Curriculum design impacts employability outcomes.
- H_4 : Work-based education influences employability outcomes.
- H_5 : Career services and counseling influence employability outcomes.
- H_6 : Employability outcomes influence employer satisfaction.

Figure 1 Research Framework



Methodology

Population and Sampling

This study was conducted at a higher education institution in Thailand that implements a dual education and work-integrated learning model with established industry partnerships. The institution supports employer engagement through internships, cooperative education, and graduate recruitment activities.

The study targeted employers and industry supervisors with direct experience in hiring or supervising graduates. Purposive sampling was first used to ensure participants had relevant knowledge of graduate performance and institutional collaboration, with access facilitated through the cooperative education office. Snowball sampling was then applied to reach additional qualified respondents across different industries. While this approach helped expand the sample, it may have limited representativeness and generalizability due to its non-probability nature.

A total of 200 employers participated, exceeding the minimum requirement for Partial Least Squares Structural Equation Modeling (PLS-SEM) analysis (Hair et al., 2022). Because the total population of eligible employers was unknown, a response rate could not be calculated. All respondents met the inclusion criteria and had relevant experience evaluating graduates.

Data Collection

A structured survey, developed from established employability and work-based education frameworks (Jackson, 2015), used a five-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree) to measure seven constructs: industry partnerships, skills and competencies, curriculum design, work-based education, career services, employability outcomes, and employer satisfaction. Sample items assessed curriculum relevance, preparedness through work-based education, problem-solving skills, and overall graduate performance. The instrument was pilot tested with 50 employers to refine wording and confirm construct clarity and validity.

Research Design

This quantitative study examined relationships between employability outcomes and employer satisfaction. Survey items were adapted from validated scales (Yorke, 2006; Jackson, 2015) and reviewed by three academic and industry experts for content validity. Pilot testing confirmed internal consistency, with Cronbach's alpha values exceeding .70. Composite reliability, convergent validity, and discriminant validity were evaluated in the final analysis.

Data Analysis

Descriptive statistics were used to profile respondents and summarize perceptions of graduate performance. PLS-SEM was chosen for its predictive capabilities, suitability for complex models, and robustness with medium-sized samples. The method's tolerance of non-normality eliminated the need for data transformation.

Validity and Reliability

Instrument reliability and validity were rigorously assessed through expert review, pilot testing, and statistical evaluation. Convergent and discriminant validity were verified using PLS-SEM criteria, ensuring methodological robustness and confidence in findings.

Results

The study sample comprised 200 employers from organizations with established collaboration or recruitment links with Thai higher education institutions implementing dual track education and work-integrated learning approaches. Participants included line managers (45%), HR managers (30%), and training supervisors (25%); 85% held decision-making authority in hiring and performance evaluation.

Respondents represented diverse sectors, including retail and wholesale (28%), logistics (22%), IT and digital services (18%), manufacturing and food (15%), hospitality (10%), and other industries (7%).

Organizational size varied: 52% were large firms (>500 employees), 33% medium-sized enterprises (100–499 employees), and 15% small firms (<100 employees).

Most respondents had over five years of supervisory experience (68%), while 32% had two to five years. Experience in recruiting and evaluating graduates ranged from 1–2 years (24%), 3–5 years (36%), to more than five years (40%). Annual firm income was distributed across categories from less than 50 million Thai Baht (15%) to 1,000 million Baht or more (25%).

Overall, the respondents possessed substantial experience in supervising and evaluating graduates, providing informed perspectives on employability outcomes and employer satisfaction.

Measurement Model Assessment

The measurement model demonstrated strong reliability and convergent validity; see Table 1.

Table 1 Convergent Validity (Factor Loadings, Composite Reliability, and Average Variance Extracted)

Construct	Items	Factor Loading	Cronbach's Alpha	(ρ_A) CR (ρ_C)	AVE	
IND	IND1	.874	.935	.936	.935	.783
	IND2	.851				
	IND3	.929				
	IND4	.885				
SKILL	SKILL 1	.903	.942	.947	.943	.703
	SKILL 2	.916				
	SKILL 3	.780				
	SKILL 4	.817				
	SKILL 5	.855				
	SKILL 6	.898				
	SKILL 7	.874				
CUR	CUR 1	.900	.888	.927	.890	.679
	CUR 2	.775				
	CUR 3	.728				
	CUR 4	.718				
WBE	WBE 1	.773	.893	.899	.893	.737
	WBE 2	.901				
	WBE 3	.896				
CAR	CAR 1	.851	.891	.893	.891	.672
	CAR 2	.796				
	CAR 3	.776				
	CAR 4	.854				
EMP	EMP 1	.819	.947	.948	.947	.780
	EMP 2	.871				
	EMP 3	.873				
	EMP 4	.934				
	EMP 5	.914				

Construct	Items	Factor Loading	Cronbach's Alpha	(ρ_A)	CR (ρ_C)	AVE
SAT	SAT 1	.942	.909	.924	.9113	.723
	SAT 2	.843				
	SAT 3	.913				
	SAT 4	.777				

Source: Developed by Authors

Factor loadings ranged from .7182 to .9424, exceeding the recommended threshold of .70 for most items and indicating strong associations between indicators and their respective constructs, with slightly lower values for CUR4 (.7182) and SAT4 (.7774) retained due to their theoretical importance (Gefen et al., 2000; Hair et al., 2017). Cronbach's alpha (ρ_A) values ranged from .8877 to .9468, and Composite Reliability (CR, ρ_C) values ranged from .8900 to .9480, both exceeding the .70 threshold and confirming excellent internal consistency (Nunnally & Bernstein, 1994; Hair et al., 2017). Average Variance Extracted (AVE) values ranged from .6721 to .7834, surpassing the .50 benchmark and demonstrating that each construct explained a substantial portion of the variance in its indicators (Fornell & Larcker, 1981). Collectively, these results indicated that the measurement model was both reliable and valid, providing a robust foundation for subsequent structural model analysis.

Discriminant Validity

The Fornell-Larcker criterion was applied to assess discriminant validity among the constructs (Fornell & Larcker, 1981). Table 2 presents the square root of the AVE for each construct on the diagonal, with inter-construct correlations shown below the diagonal. To establish discriminant validity, the square root of each construct's AVE should exceed its correlations with other constructs. As shown, all diagonal values (.820–.885) surpassed the corresponding off-diagonal correlations, confirming that each construct was distinct. These results indicate good discriminant validity and support the measurement model's suitability for subsequent structural analysis.

Table 2 Fornell-Larcker Criterion: Square Roots of AVE and Inter-Construct Correlations

Construct	IND	SKILL	CUR	WBE	CAR	EMP	SAT
IND	.885						
SKILL	.562	.838					
CUR	.438	.635	.824				
WBE	.473	.612	.621	.858			
CAR	.406	.592	.653	.717	.820		
EMP	.549	.647	.583	.626	.613	.883	
SAT	.444	.569	.507	.551	.657	.451	.850

Note. Diagonal values represent the square root of AVE; off-diagonal values are inter-construct correlations. All constructs met the Fornell-Larcker criterion, confirming discriminant validity.

Structural Model Assessment: Coefficient of Determination (R^2)

Table 3 presents the Coefficient of Determination (R^2) and Adjusted R^2 values for Employability Outcomes (EMP) and Employer Satisfaction (SAT). The model explains approximately 74.6% of the variance in EMP (Adjusted $R^2 = .734$), indicating strong explanatory power. In contrast, the variance explained by SAT was moderate, at 45.1% (Adjusted $R^2 = .446$), suggesting a reasonable model fit. These results demonstrate that the structural model effectively captured the key factors influencing graduate employability and overall employer satisfaction, providing meaningful insights into the relationships among the studied constructs.

Table 3 Coefficient of Determination (R^2)

Construct	R^2	Adjusted R^2
EMP	.746	.734
SAT	.451	.446

Model Fit Assessment

As Table 4 shows, the structural model's fit was evaluated using multiple indices, including the Standardized Root Mean Square Residual (SRMR), Unweighted Least Squares Discrepancy (dULS), Geodesic Discrepancy (dG), and Normed Fit Index (NFI). The SRMR values were .056 for the saturated model and .086 for the estimated model, both below the recommended threshold of .10, indicating acceptable fit. The NFI values, .922 (saturated) and .919 (estimated), exceeded the .90 benchmark, further supporting good model fit.

Table 4 Model Fit Assessment

Measure	Saturated Model	Estimated Model
SRMR	.056	.086
dULS	11.114	11.869
dG	19.247	19.523
NFI	.922	.919

Note. SRMR = Standardized Root Mean Square Residual; dULS = Unweighted Least Squares Discrepancy; dG = Geodesic Discrepancy; NFI = Normed Fit Index.

Distance-based discrepancy measures dULS and dG assess how well the estimated model reproduces the observed variance-covariance matrix, with lower values indicating a better fit (Henseler et al., 2014). For the saturated model, dULS and dG were 11.114 and 19.247, respectively, while the estimated model showed slightly higher values of 11.869 and 19.523. Although no strict cutoffs exist for these measures, the modest increase from the saturated to the estimated model suggests that the proposed model maintained a reasonable fit while remaining more parsimonious (Henseler et al., 2014).

PLS-SEM Analysis

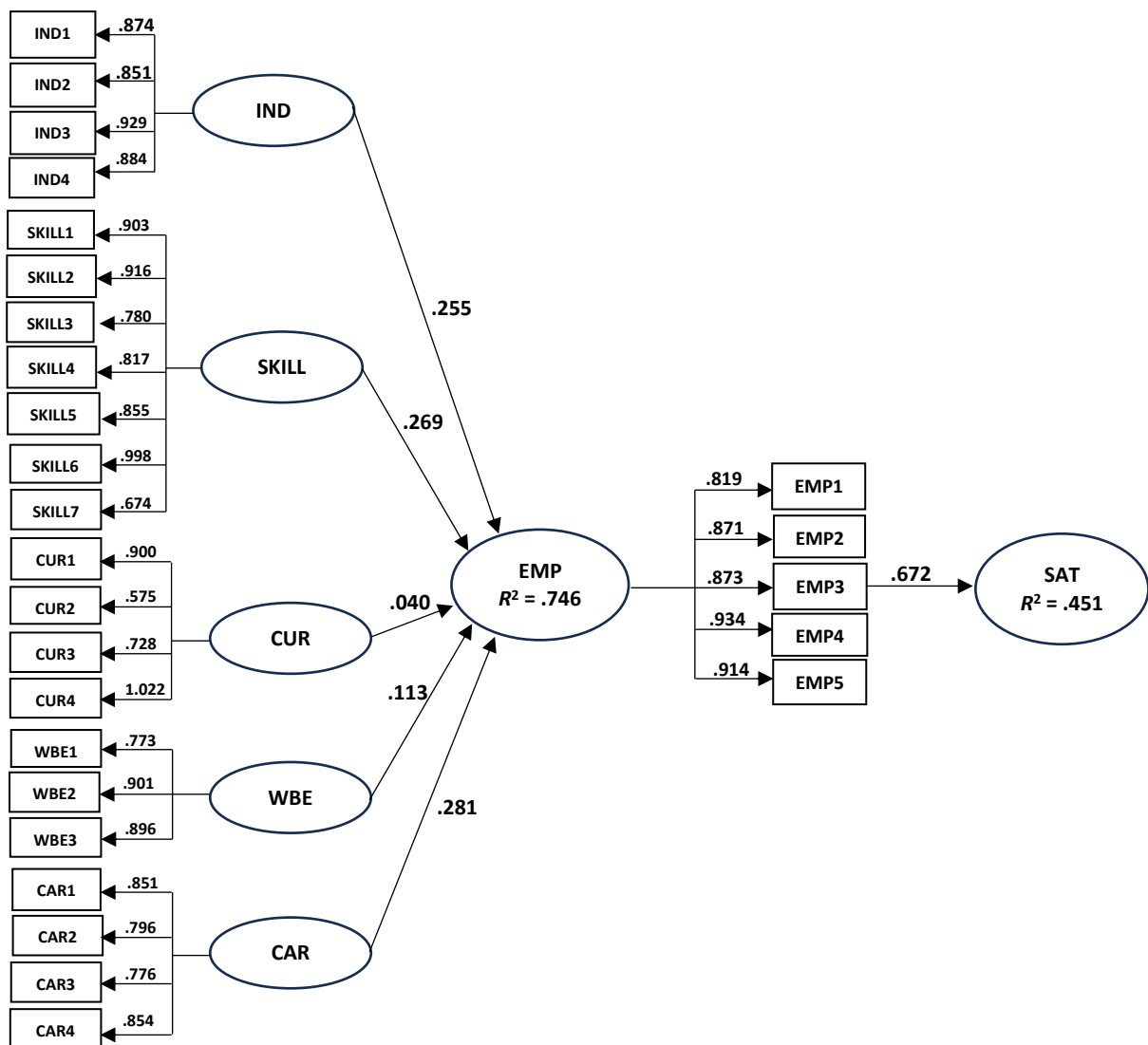
The inner structural model was analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) to assess the strength and significance of hypothesized relationships and the model's predictive power (Chin et al., 2003). As shown in Table 5 and Figure 2, all exogenous constructs positively influenced Employability Outcomes (EMP) with varying effect sizes. Industry Partnerships (IND) significantly affected EMP ($\beta = .256, p = .001$), underscoring the value of employer collaborations in graduate work readiness.

Table 5 Results of Inner Model Testing

Hypothesis	β	t-value	p-value	Hypothesis Result
IND → EMP	.256	3.292**	.001	Supported
SKILL → EMP	.270	2.698**	.008	Supported
CUR → EMP	.040	.438	.662	Rejected
WBE → EMP	.113	2.500*	.013	Supported
CAR → EMP	.281	2.416*	.017	Supported
EMP → SAT	.672	3.292**	.000	Supported

Note. ** = p -value $\leq .01$ and * = p -value $\leq .05$.

Figure 2 *Hypotheses Results*



Source: Developed by Authors

Skills and Competencies (SKILL) also showed a strong positive effect ($\beta = .269$, $p = .008$), emphasizing the importance of technical and soft skills. Work-Based Education (WBE) had a modest yet significant effect ($\beta = .113$, $p = .013$), confirming the contribution of internships, co-op programs, and applied projects to employability. Career Services (CAR) exerted the greatest influence on EMP ($\beta = .281$, $p = .017$), highlighting the role of structured career guidance and counseling. In contrast, Curriculum Design (CUR) was not significant ($\beta = .040$, $p = .662$), suggesting that curriculum alone does not directly enhance employability without practical and career-focused components.

EMP explained 74.6% of the variance ($R^2 = .746$), indicating strong predictive power. It also significantly influenced Employer Satisfaction (SAT) ($\beta = .672$, $p < .001$; $R^2 = .451$), showing that graduates' preparedness drives employer satisfaction. Factor loadings exceeded .67, confirming measurement reliability and validity. As shown in Table 5, career services and skills development were the most critical drivers of employability, with work-based education and industry partnerships also contributing significantly. All hypothesized relationships were significant except for the curriculum design's impact on employability outcomes.

Discussion

This study examined determinants of graduate employability and employer satisfaction in a Thai higher education context implementing dual track education and work-integrated learning. The results showed that employability was shaped by an integrated system of institutional mechanisms and individual competencies, supporting Human Capital Theory and Career Construction Theory.

Industry partnerships (IND) significantly predicted employability ($\beta = .256, p = .001$), indicating that strong academia–industry linkages enhance curriculum relevance, experiential learning, and professional networks. Consistent with prior studies (Jackson & Wilton, 2016; Patacsil & Tablatin, 2017), employer engagement strengthened both technical skills and social capital, improving graduate adaptability. From a Human Capital perspective, employability is enhanced not only through formal education, but also through access to workplace knowledge and industry-based learning, highlighting the importance of sustained collaboration through internships, co-design, and mentoring.

Skills and competencies (SKILL) also positively influenced employability ($\beta = .269, p = .008$), aligning with evidence on the importance of technical, cognitive, and soft skills (Qenani et al., 2014). Project-based learning was particularly effective in developing critical thinking and creativity. This reinforces Human Capital Theory by emphasizing transferable skills such as communication, problem-solving, teamwork, and digital literacy as essential for workplace adaptability.

In contrast, curriculum design (CUR) was not significant ($\beta = .040, p = .662$), suggesting that curriculum reform alone is insufficient without experiential and industry-based learning. A possible explanation is that curriculum relevance has become standardized across institutions, reducing its differentiating effect. Employers may therefore prioritize applied experience and workplace readiness over curriculum content, indicating that curriculum effectiveness depends on integration with experiential learning. Supporting this, work-based education (WBE) had a modest positive effect ($\beta = .113, p = .013$), reinforcing the value of internships and cooperative education in bridging theory and practice (Jackson, 2015).

Career services (CAR) showed the strongest effect on employability ($\beta = .281, p = .017$), highlighting their central role in supporting transitions to employment. Extending Career Construction Theory, employability is shaped not only by education, but also by career adaptability and institutional support (Ferns et al., 2025). Career services help students navigate complex career pathways through counseling, mentoring, networking, and digital platforms.

Finally, employability strongly predicted employer satisfaction (SAT) ($\beta = .672, p < .001; R^2 = .451$), confirming its mediating role between institutional practices and labor market outcomes. Overall, the findings showed that employability is a multidimensional construct requiring integrated strategies combining industry engagement, skills development, experiential learning, and career services.

Conclusion

This study contributes to the graduate employability literature by examining the influence of curriculum relevance, work-based education, industry partnerships, career services, and skills and competencies on employability outcomes, as well as the influence of employability outcomes on employer satisfaction within the Thai higher education context.

The findings indicated that industry partnerships, skills and competencies, work-based education, and career services significantly influence employability outcomes, whereas curriculum relevance did not demonstrate a significant effect. Furthermore, employability outcomes exerted a strong positive influence on employer satisfaction, highlighting their role as a key mechanism linking institutional practices and labor market expectations.

Building on these findings, the study proposes a Graduate Employability Ecosystem Framework, which conceptualizes employability as the outcome of an interconnected system involving higher education institutions, employers, experiential learning opportunities, and career development mechanisms. This framework highlights how multiple institutional factors collectively contribute to graduate employability and subsequently influence employer satisfaction.

This study offers important implications for universities, employers, and policymakers seeking to address skills mismatches and workforce development challenges. Strengthening university–industry collaboration, expanding work-integrated learning opportunities, investing in competency development, and enhancing career services can contribute to more sustainable employability outcomes and higher levels of employer satisfaction.

In an increasingly dynamic labor market shaped by technological transformation and global competition, employability should be viewed as a shared responsibility among educational institutions, employers, governments, and learners. Strengthening these interconnected relationships is essential to develop future-ready workforces and enhance long-term economic competitiveness.

Policy Recommendations

To enhance employability outcomes and employer satisfaction, several targeted strategies are proposed.

1. **Strengthen Industry Partnerships (IND):** Expand opportunities for internships, cooperative education, and industry-led projects to ensure closer alignment between curricula and labor market needs.
2. **Enhance Skills Development (SKILL):** Integrate both technical and transversal skills—including digital literacy, critical thinking, communication, and adaptability—into teaching and learning processes.
3. **Expand Work-Based Education (WBE):** Embed experiential learning more systematically into curricula, offering students sustained opportunities for professional exposure, practical experience, and industry networking.
4. **Modernize Career Services (CAR):** Invest in AI-enabled platforms, virtual mentoring systems, and personalized guidance services that facilitate career exploration, job-search strategies, and lifelong employability.
5. **Incorporate Employer Feedback:** Establish systematic mechanisms for gathering and integrating employer feedback into curriculum design, teaching practices, and career support services, ensuring continuous improvement and responsiveness to labor market demands.

By implementing these recommendations, higher education institutions, employers, and policymakers can collaboratively foster a more resilient and responsive system. Ultimately, bridging the gap between education and employment requires sustained commitment, innovation, and shared responsibility among all stakeholders to prepare graduates for meaningful participation in dynamic labor markets.

Research Limitations

This study had several limitations. First, the data were collected from a limited number of higher education institutions and industries in Thailand, which may restrict the generalizability of its findings to other contexts or countries. Future research could expand the sampling frame to include a broader range of institutions and sectors to enhance external validity.

Second, the study relied on self-reported survey data from employers, which may be subject to common method bias, social desirability bias, and perceptual bias. Future studies may consider incorporating multi-source data or objective performance indicators to reduce these limitations.

Third, the study focused on a defined set of constructs, including industry partnerships, skills and competencies, curriculum design, work-based education, and career services. However, the model did not include other potentially important contextual factors—such as organizational culture, institutional governance, labor market conditions, and national policy environments. Future research may integrate these variables to provide a more comprehensive understanding of employability.

Finally, the cross-sectional research design limited the ability to capture changes in employability outcomes and employer satisfaction over time. Longitudinal or mixed method approaches are recommended for future studies to examine dynamic relationships and causal development of employability.

Author Contributions

Sunida Piriapada: Conceptualization, methodology, literature review, statistical analysis, data interpretation, project administration, supervision, writing original draft, and editing; **Thanaphat Kasemwattanasuk:** Data collection, investigation, research instrument development, project coordination, and editing; **Pisesporn Wasawong:** Research instrument development, investigation, drafting discussion section.

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