Competency Preparation, Self-Efficacy, Confidence, and Employability among Graphic Communication Photography Students

Cheng-Yun, Tsai[1]*

[1]*Department of Graphic Communication Arts, National Taiwan University of Arts, Taiwan; arthur149520@gmail.com

*Corresponding Author: arthur149520@gmail.com

DOI: https://doi.org/10.30209/IJMO.202503.012

Submitted: Jun. 14, 2025 Accepted: Aug. 04, 2025

ABSTRACT

This study explores the interrelationships among competency preparation, employment self-efficacy, employment confidence, and employability for photography students in graphic communication departments in Taiwan. Drawing on Bandura's self-efficacy theory and the employability framework, the study employs a self-developed questionnaire and analyzes data from 92 valid respondents using Partial Least Squares Structural Equation Modeling (PLS-SEM). The results demonstrate that competency preparation significantly enhances employment self-efficacy, and that both employment self-efficacy and employment confidence serve as full mediators in the pathway from competency preparation to employability. Notably, the findings highlight the distinct psychological constructs of employment confidence and employment self-efficacy, clarifying their unique and complementary roles in students' career development. The study further addresses the challenges faced by creative industry students in Taiwan, including credentialism, rapidly changing industry demands, and the need for personal branding. Practical recommendations are proposed for curriculum design, career counseling, and talent recruitment to bridge the gap between academic training and labor market expectations. While the sample is limited to photography students in Taiwan and data were self-reported, the research provides a theoretical and empirical foundation for future studies on employability in creative disciplines, and offers actionable strategies for educational institutions and industry stakeholders.

Keywords: Graphic communication, Competency preparation, Employment self-efficacy, Employment confidence, Employability

1. Introduction

1.1 Research Background

In today's competitive job market, employers expect more than basic professional knowledge and technical skills, placing greater emphasis on employability, employment confidence, and employment self-efficacy—collectively known as soft skills. Research indicates that competency preparation alone is insufficient to meet the evolving demands of the workplace; students' confidence

in their abilities and perceived self-efficacy are also crucial to career success. However, Taiwan's higher education system has yet to adequately address these dimensions within curriculum design and capability development. Photography-related departments, in particular, tend to focus primarily on technical training and equipment operation, leading to graduates often lacking sufficient competency and confidence when entering the workforce.

Therefore, this study investigates photography students and graduates from graphic communication departments in Taiwan, employing a multivariate structural model to analyze the relationships among competency preparation, employment self-efficacy, employment confidence, and employability. Using Partial Least Squares Structural Equation Modeling (PLS-SEM), this research examines the direct, indirect, and mediating effects among these variables. The results aim to offer evidence-based recommendations for educational institutions and industry, bridge the gap between education and practice, and enhance workforce competitiveness.

1.2 Research Motivation

In recent years, an increasing number of university graduates have pursued careers unrelated to their majors, especially in graphic communication departments, where students' knowledge and skills often fall short of industry expectations. Employers now value not only professional competence but also soft skills such as employment confidence and self-efficacy.

However, most domestic studies have focused on single variables, rarely integrating multiple factors or systematically exploring their interactions and mediating effects. This has resulted in a lack of comprehensive, evidence-based guidance for curriculum design and talent selection in both academia and industry.

Furthermore, prior research on employability has mainly addressed general university students or those in science and engineering fields, with limited attention to creative industries or specialized areas such as photography. Students in these disciplines face unique challenges, including rapid industry changes, intense portfolio competition, and increased demands for self-marketing skills. The prevalence of credentialism and Taiwan's distinctive industrial structure further complicate career pathways in creative fields.

Accordingly, this study uses Partial Least Squares Structural Equation Modeling (PLS-SEM) to investigate the relationships and mediating effects among competency preparation, employment self-efficacy, employment confidence, and employability for photography students and graduates from graphic communication departments. The aim is to address existing research gaps and provide comprehensive recommendations for curriculum development and talent recruitment.

1.3 Research Purposes

The primary purpose of this study is to investigate the technical abilities, soft skills, and workplace adaptability of current students and graduates from graphic communication departments, and to provide curriculum design recommendations for educational institutions as well as employment suggestions for enterprises based on these abilities. The specific objectives are as follows:

1. To examine the current status of competency preparation, employment self-efficacy,

employment confidence, and employability among photography students and graduates in graphic communication departments.

2. To assess the interrelationships among these constructs and analyze the mediating effects of employment self-efficacy and employment confidence between competency preparation and employability.
3. Based on the research findings, to propose concrete recommendations for curriculum design and talent recruitment strategies in order to bridge the gap between education and practice and enhance graduates' employability.

1.4 Research Questions

To achieve the above research objectives, this study focuses on the following research questions:

1. What is the current status of competency preparation, employment self-efficacy, employment confidence, and employability among photography students and graduates in graphic communication departments?
2. What significant relationships exist among these constructs? How are the structural relationships among competency preparation, employment self-efficacy, employment confidence, and employability characterized?
3. Do employment self-efficacy and employment confidence serve as mediators between competency preparation and employability?
4. Based on the research findings, how can educational curriculum design and enterprise recruitment criteria be adjusted to enhance the employability of photography students and graduates?

2. Literature Review

2.1 Competency Preparation

Competency preparation is the cultivation of the skills, knowledge, and attitudes needed to meet workplace demands, and is a key factor influencing employability [1]. The USEM model by Knight and Yorke [2] -comprising Understanding, Skills, Efficacy, and Motivation-emphasizes that competency preparation is an integrative process that provides students with a competitive advantage in the job market. Makki et al. [3]further demonstrate that targeted technical training significantly enhances students' career readiness and employment confidence.

2.2 Employment Confidence

Employment confidence is an individual's belief in their ability to achieve success and gain recognition in the workplace, grounded in trust in one's skills and understanding of occupational and market demands. Unlike self-efficacy, which focuses on performing specific job tasks, employment confidence reflects a broader optimism regarding career development, social acceptance, and adaptability to changing workplace requirements [4]. According to Bandura's social cognitive theory [5], employment confidence is closely linked to self-efficacy; both are crucial in shaping behavioral choices and career outcomes. Van den Hof [6]found that students with higher employment confidence

exhibit greater adaptability and proactive engagement in job searches. Mistry [7] emphasized that integrating professional memberships, industry mentoring, and career counseling into education can enhance students' self-awareness, professional identity, and workplace confidence. These findings suggest that educational institutions combining career resources with experiential learning can help students build the confidence and adaptability needed for future employment.

2.3 Employment Self-Efficacy

Employment self-efficacy refers to an individual's belief in their ability to effectively carry out job-related tasks, adapt to workplace challenges, and persist in achieving professional goals. This construct is theoretically grounded in Bandura's [5] self-efficacy theory, which posits that self-efficacy is a subjective assessment of one's capabilities, influencing goal setting, effort investment, and persistence when encountering difficulties. In contrast to the general orientation of employment confidence, employment self-efficacy is task- and behavior-specific, reflecting the confidence to master concrete job requirements and manage career-related problems.

Wujema et al. [8], discussing the CareerEDGE model, highlight self-efficacy's promotive effect on employability and its significant mediating role in multivariate models. Ahmed et al. [9] further confirm that self-efficacy not only positively predicts perceived employability, but also directly contributes to career success, making it a critical psychological resource linking human capital and career achievement. Studies also show that individuals with high self-efficacy are more likely to engage in learning and expand their workplace skills, thereby enhancing adaptability and employability [8][9]. Thus, self-efficacy is a key psychological foundation for students' career development and an essential focus for educational interventions to improve employability.

2.4 Employability

Employability is defined as an individual's ability to obtain, maintain, and continuously develop in a job, encompassing both technical and soft skills [10]. Pool and Qualter [11] identified a positive relationship between emotional self-efficacy and employability, recommending the integration of emotional management skills into educational curricula. Qenani et al. [12] emphasized that students' self-efficacy and market competitiveness directly influence their success rate in securing employment.

2.5 Chapter Summary

According to the aforementioned literature, competency preparation, employment self-efficacy, employment confidence, and employability are fundamental dimensions for the career development of photography students in graphic communication departments. However, empirical research on creative industry students in Taiwan is limited. Most prior studies have focused on science, engineering, and business students, with little attention to the distinct career challenges and industry changes faced by students in specialized fields such as photography.

This study distinguishes between "employment confidence" and "employment self-efficacy" and examines their mediating roles between competency preparation and employability. Employment confidence refers to an overarching belief in achieving career success, adapting to workplace environments, and gaining recognition, encompassing optimism about future development and social

acceptance. In contrast, employment self-efficacy relates to individuals' evaluations of their ability to accomplish specific job tasks and overcome difficulties, representing a more context-driven, action-oriented resource. Clarifying these differences enables a more precise understanding of their effects on students' career development.

This research also considers the educational system and industry context in Taiwan, analyzing the unique circumstances photography students face regarding credentialism, evolving industry demands, and the need for personal branding. Using Partial Least Squares Structural Equation Modeling (PLS-SEM), this study addresses gaps in the literature on career development in the creative industries and provides evidence-based recommendations for educational and industry stakeholders.

3. Research Methods

3.1 Research Design

This study adopts a quantitative research approach, utilizing a questionnaire survey to collect data with the aim of investigating the causal relationships among competency preparation, employment confidence, employment self-efficacy, and employability. The research framework is grounded in Bandura's [5] self-efficacy theory and the employability theory proposed by Hillage and Pollard [1], constructing a multivariate model to analyze both the direct and indirect effects of competency preparation on employment confidence and employability, as well as the mediating role of employment self-efficacy. The ultimate objective of this study is to provide actionable recommendations for educational institutions regarding curriculum improvement and to enhance students' career development.

3.2 Research Instrument

3.2.1 Questionnaire design

This study primarily utilized a self-developed structured questionnaire as the data collection instrument. The questionnaire encompassed four constructs: competency preparation, employment confidence, employment self-efficacy, and employability. All items were rated on a five-point Likert scale (1 = strongly disagree, 5 = strongly agree). The scale was designed with reference to relevant literature and standards, integrating both industry and academic perspectives to ensure the validity of the measurement tool. The main sources for questionnaire development included:

1. Lee et al. [13], "Revision of the Chinese Version of the Work Self-Efficacy Scale and Its Reliability and Validity among Individuals with Mental Disorders," which served as the theoretical basis for the self-efficacy construct;
2. National Occupational Competency Standards for Bridal Photography Personnel [14] and State Skill Standards for Photography[15], which provided international benchmarks for professional photography competencies and informed the competency preparation items;
3. Liu [16], "A Study on the Importance of Prepress Staff Competencies in Different Printing Industries," which supplemented competency-related indicators and questionnaire items;

4. Senan and Sulphey [17], "Construction and Validation of the Employability Questionnaire for Accounting Graduates," which served as a reference for the structured employability questionnaire design;
5. Myburgh, Watson, and Foxcroft [18], "Development and Validation of a Managerial Decision-Making Self-Efficacy Questionnaire," which informed the design and reliability validation of the self-efficacy scale.

3.2.2 Statistical analysis tools and methods

This study employed SmartPLS software to implement Partial Least Squares Structural Equation Modeling (PLS-SEM) as the primary analytical method. The analysis comprised reliability and validity assessments of the measurement model—including internal consistency, convergent validity, and discriminant validity—followed by path analysis of the structural model and significance testing of hypothesized paths using the bootstrap method.

PLS-SEM was chosen for several reasons directly relevant to the research objectives. First, the study aims to explore and predict the complex relationships among competency preparation, employment self-efficacy, employment confidence, and employability in the context of photography students in graphic communication. PLS-SEM is particularly appropriate for theory development and exploratory research [19], aligning well with the research goal of understanding these multidimensional constructs and their interconnections. Second, due to the relatively small sample size (n = 92), PLS-SEM offers advantages over covariance-based SEM by accommodating limited sample sizes and non-normal data while providing stable parameter estimates [19][20]. The adequacy of the sample size for PLS-SEM analysis was further assessed by referring to established guidelines and conducting a statistical power analysis. According to Hair et al. [19], a minimum sample size of 10 times the maximum number of structural paths pointing at a particular latent variable is generally recommended. In this study, the most complex endogenous construct had three predictors, indicating a minimum sample size of 30. With 92 valid cases, the sample size exceeds this threshold. Furthermore, a post hoc power analysis conducted using G*Power 3.1 [21] for detecting medium effect sizes ($f^2 = 0.15$) with $\alpha = 0.05$ and power $(1-\beta) = 0.80$ suggests that a sample of at least 77 is sufficient for a model with three predictors. Therefore, the current sample size is adequate for the complexity of the proposed model and supports the reliability of the structural relationship estimates. Third, the method's emphasis on maximizing the explained variance of endogenous variables supports the predictive focus of this study, which seeks to clarify how competency preparation and psychological factors jointly influence employability outcomes.

Given these considerations and the characteristics of the research topic, PLS-SEM is considered the most appropriate and rigorous analytical approach for achieving the study's objectives.

3.3 Research Framework

This study focuses on examining the relationships among competency preparation, employment self-efficacy, employment confidence, and employability, and establishes a systematic structural

equation model to elucidate how these variables collectively influence the career development of photography majors. The conceptual framework is illustrated in Figure 1.

Grounded in Bandura's [5] self-efficacy theory and the employability theory, this study proposes six research hypotheses to test whether competency preparation can influence students' employability and employment confidence directly or indirectly, as well as to assess the mediating role of employment self-efficacy in this process.

Self-efficacy theory emphasizes the individual's belief in their capability to accomplish target behaviors, which is a critical source of behavioral choice and motivation. Employability theory, on the other hand, posits that skills, attitudes, and adaptability are essential factors in enhancing workplace competitiveness. Integrating these theoretical perspectives, this study positions competency preparation as the core variable influencing subsequent career development and systematically examines the structural pathways among all constructs.

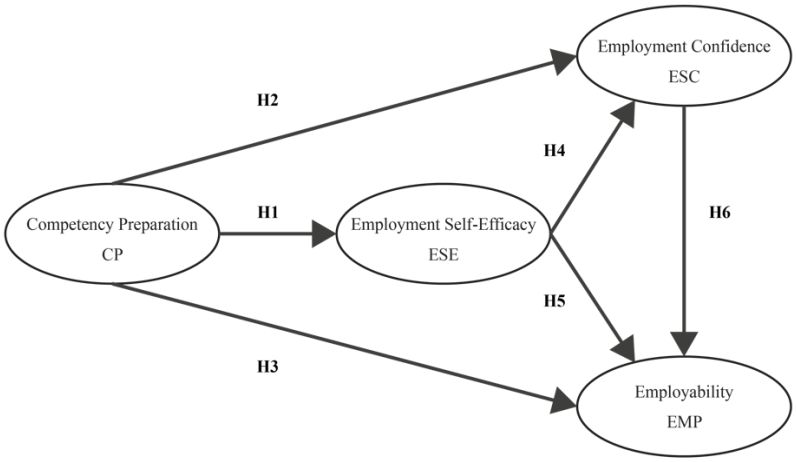

Figure 1. Conceptual Framework

The primary hypotheses proposed in this study are as follows:

H1: Competency preparation has a positive effect on employment self-efficacy.

H2: Competency preparation has a positive effect on employment confidence.

H3: Competency preparation has a positive effect on employability.

H4: Employment self-efficacy has a positive effect on employment confidence.

H5: Employment self-efficacy has a positive effect on employability.

H6: Employment confidence has a positive effect on employability.

H7: Employment self-efficacy mediates the relationship between competency preparation and employment confidence.

H8: Employment confidence mediates the relationship between competency preparation and employability.

4. Results and Discussion

4.1 Reliability Assessment

This study employed Partial Least Squares (PLS) to evaluate the reflective measurement model, thereby assessing the suitability of the data for subsequent path analysis[22][23]. Reliability and validity were rigorously examined using Cronbach's α coefficient[24][25], composite reliability (ρc) [26][27], and average variance extracted (AVE)[28], as summarized in Table 1.

According to the reliability analysis presented in Table 1, the Cronbach's α coefficients for the primary constructs in this study ranged from 0.809 to 0.885, which is well above the recommended threshold of 0.70 [24][25], indicating good internal consistency for each dimension. Furthermore, the composite reliability (including ρa and ρc) for each construct ranged from 0.819 to 0.910, also significantly exceeding the recommended cutoff of 0.70 [29][27]. Additionally, the AVE values ranged from 0.535 to 0.693, surpassing the standard criterion of 0.50 [28][30]. Collectively, these findings demonstrate that the questionnaire employed in this study exhibits high reliability across all constructs, confirming that the measurement instrument is stable and consistent, and is therefore appropriate for subsequent structural equation modeling and related statistical analyses.

4.2 Construct Validity Assessment

This study adopted a reflective measurement model to evaluate the construct validity of the research instrument, specifically examining convergent validity and discriminant validity.

4.2.1 Convergent validity

According to the convergent validity analysis presented in Table 1, all item factor loadings across constructs exceeded the recommended threshold of 0.70 (ranging from .700 to .877), consistent with the standards proposed by Arifin and Yusoff [31], thereby demonstrating that each item effectively reflects its corresponding latent variable. In line with the recommendation by Awang et al. [32], newly developed measurement scales should ensure that the factor loadings for all items related to their respective latent constructs reach at least 0.70 to guarantee that items robustly represent the targeted construct. Items with loadings below this threshold should be considered for removal in order to enhance the unidimensionality and overall reliability of the measurement tool. Therefore, this study followed the criteria established by Awang et al. [32], excluding any items with factor loadings below 0.70 to ensure the questionnaire possessed strong construct validity and measurement quality. All constructs in this study met both theoretical and practical standards for factor loadings, providing evidence that the scale possesses sound convergent validity and can serve as a solid foundation for subsequent research analysis.

Table 1. Summary of Convergent Validity and Reliability Coefficients of the Formal Questionnaire (n = 92)

Variable	Item	Factor Loading	Cronbach's α	Composite Reliability (ρa)	Composite Reliability (ρc)	Average Variance Extracted (AVE)
Competency Preparation (CP)	CP07	.742	.885	.889	.910	.591
	CP10	.789				
	CP11	.741				
	CP13	.763				

Variable	Item	Factor Loading	Cronbach's α	Composite Reliability (ρa)	Composite Reliability (ρc)	Average Variance Extracted (AVE)
	CP14	.748				
	CP16	.758				
	CP17	.838				
Employment Self-Efficacy (ESE)	ESE02	.877	.855	.855	.903	.699
	ESE03	.769				
	ESE04	.863				
	ESE05	.831				
Employment Confidence (ESC)	ESC01	.809	.822	.826	.826	.584
	ESC02	.804				
	ESC03	.714				
	ESC04	.789				
	ESC05	.700				
Employability (EMP)	EMP01	.731	.809	0.819	.819	.564
	EMP02	.752				
	EMP03	.787				
	EMP04	.747				
	EMP05	.737				

Source: Compiled by this study.

4.2.2 Discriminant validity

This study assessed discriminant validity using both the Fornell-Larcker criterion and the Heterotrait-Monotrait Ratio (HTMT), as presented in Tables 2 and 3.

According to the Fornell-Larcker criterion, the square root of the average variance extracted (AVE) for each latent construct exceeded the correlations between that construct and all other constructs. For example, the square root of the AVE for Competency Preparation (CP) was 0.769, which is greater than its correlations with Employability (EMP, 0.477), Employment Confidence (ESC, 0.523), and Employment Self-Efficacy (ESE, 0.625). This pattern was consistent for all constructs, indicating that each construct was clearly distinct from the others, thus supporting good discriminant validity.

A further examination of the HTMT (heterotrait-monotrait ratio of correlations) results revealed that the HTMT values among all constructs were below the commonly accepted threshold of 0.90 [33]. For example, the highest HTMT value between CP and other constructs was 0.705, while that between EMP and ESC was 0.766—both well below 0.90. This indicates that the latent constructs in the study are clearly distinguishable from one another, with no significant overlap.

Based on these results, all constructs included in this questionnaire demonstrate discriminant validity that meets theoretical recommendations, confirming that the variables can be effectively distinguished and that the instrument possesses robust discriminant validity.

Table 2. Summary of Fornell-Larcker Criterion Coefficients (n = 92)

Variable	CP	EMP	ESC	ESE
CP	.769			

EMP	.477	.751		
ESC	.523	.648	.764	
ESE	.625	.547	.621	.836

Source: Compiled by this study.

Table 3. Summary of HTMT Analysis Results (n = 92)

Variable	CP	EMP	ESC	ESE
CP	**.350**			
EMP	**.551**	**.318**		
ESC	**.594**	**.766**	**.342**	
ESE	**.705**	**.643**	**.734**	**.489**

Source: Compiled by this study.

4.3 Structural Model Analysis

This study employed Partial Least Squares Structural Equation Modeling (PLS-SEM) to examine the relationships among competency preparation, employment self-efficacy, employment confidence, and employability, and further explored the mediating effects among these variables. The standardized path coefficients, significance levels, and mediation effects for each pathway are summarized and discussed as follows:

4.3.1 Direct effects analysis

The analysis revealed that competency preparation (CP) had a significant direct effect on employment self-efficacy (ESE) (β = 0.625, t = 8.354, p < 0.001), indicating that higher levels of competency preparation are associated with higher employment self-efficacy among students. However, the direct effects of competency preparation (CP) on employment confidence (ESC) (β = 0.221, t = 1.589, p = 0.113) and employability (EMP) (β = 0.117, t = 1.102, p = 0.271) were not statistically significant, suggesting that competency preparation does not directly influence these two variables.

Regarding the mediating variables, employment self-efficacy (ESE) had a significant positive effect on employment confidence (ESC) (β = 0.483, t = 4.381, p < 0.001), and employment confidence (ESC) also had a significant positive effect on employability (EMP) (β = 0.476, t = 4.278, p < 0.001). In contrast, the direct effect of employment self-efficacy (ESE) on employability (EMP) did not reach statistical significance (β = 0.178, t = 1.667, p = 0.096).

4.3.2 Mediation effects analysis

To further explore the mediating effects among variables, this study employed PLS-SEM to analyze the indirect pathway effects, as summarized in Table 5. The table presents several potential mediation pathways, including "CP→ESC→EMP", "ESE→ESC→EMP" and "CP→ESE→ESC→EMP" to examine the respective roles of competency preparation, employment self-efficacy, and employment confidence in enhancing employability.

The results reveal that the pathways "ESE→ ESC→EMP" (β= 0.230, p = 0.005) and "CP→ESE→ESC→EMP" (β= 0.144, p = 0.009) are statistically significant. This indicates that both employment self-efficacy and employment confidence serve as critical mediators in the relationship between competency preparation and employability. By contrast, the "CP→ESC→EMP"and"CP→ESE→EMP" pathways were not statistically significant, suggesting that mediation through a single variable is comparatively weaker.

Overall, these findings support the theoretical assumptions regarding multiple mediation pathways and further confirm that the impact of competency preparation on employability is primarily realized through the interactive effects of employment self-efficacy and employment confidence. This highlights the essential bridging role of psychological resources in promoting students' employability.

Furthermore, the research model confirms that employment self-efficacy and employment confidence are key mediators in the pathway from competency preparation to employability. All mediation effects were rigorously validated using 500 bootstrap resamples, providing strong theoretical and empirical support for these conclusions.

Table 4. Summary of Formative Measurement Model Analysis Coefficients (n = 92)

	Original Sample	Sample Mean	Standard Deviation	T Statistics	P Values	Test Result
CP→EMP	0.117	0.111	0.106	1.102	0.271	Not supported
CP→ESC	0.221	0.230	0.139	1.589	0.113	Not supported
CP→ESE	0.625	0.629	0.075	8.354	0.000	supported
ESC→EMP	0.476	0.488	0.111	4.278	0.000	supported
ESE→EMP	0.178	0.177	0.107	1.667	0.096	Not supported
ESE→ESC	0.483	0.483	0.110	4.381	0.000	supported

Source: Compiled by this study.

Table 5. Summary Table of Mediation Effects Analysis (n = 92)

	Original Sample	Sample Mean	Standard Deviation	T Statistics	P Values	Test Result
CP→ESC →EMP	0.105	0.112	0.075	1.403	0.161	Not supported
ESE→ESC →EMP	0.230	0.238	0.082	2.792	0.005	supported
CP→ESE→ESC→EMP	0.144	0.149	0.055	2.615	0.009	supported
CP→ESE →EMP	0.111	0.111	0.071	1.581	0.114	Not supported
CP→ESE →ESC	0.302	0.303	0.079	3.803	0.000	supported

Source: Compiled by this study.

4.4 Chapter Summary

This chapter integrated quantitative statistical analyses and structural model diagrams to comprehensively evaluate the reliability and validity of the research instrument as well as the fit of the proposed theoretical model. The results of the reliability analysis indicated that Cronbach's α coefficients and composite reliability (CR) for all constructs were well above the recommended threshold of 0.70, demonstrating high internal consistency and confirming the instrument's stability and reliability. Both convergent and discriminant validity were also achieved, as all factor loadings exceeded 0.70, AVE values were above 0.50, and both the Fornell-Larcker criterion and HTMT indices confirmed good discriminant validity among latent constructs.

With respect to structural model analysis, the findings—illustrated in the figure above—depict the path relationships and standardized coefficients among the latent variables. Competency preparation (CP) had a significant positive effect on employment self-efficacy (ESE) (path coefficient = 0.625), but its direct effects on employment confidence (ESC) and employability (EMP) were not statistically significant. Further analysis revealed that employment self-efficacy (ESE) significantly enhanced employment confidence (ESC) (path coefficient = 0.483), and employment confidence (ESC) had a significant positive effect on employability (EMP) (path coefficient = 0.476). Conversely, the direct path from ESE to EMP was not significant.

Regarding mediation effects, bootstrap testing confirmed that both the"competency preparation →employment self-efficacy→employment confidence"and"employment self-efficacy→ employment confidence→employability"pathways exhibited full mediation. This indicates that employment self-efficacy and employment confidence serve as key mediating variables linking competency preparation to ultimate employability. Overall, the structural model diagram and analytical results are mutually reinforcing, providing empirical support for the proposed theoretical framework and offering clear guidance for both practical applications and future research aimed at enhancing university students' employability.

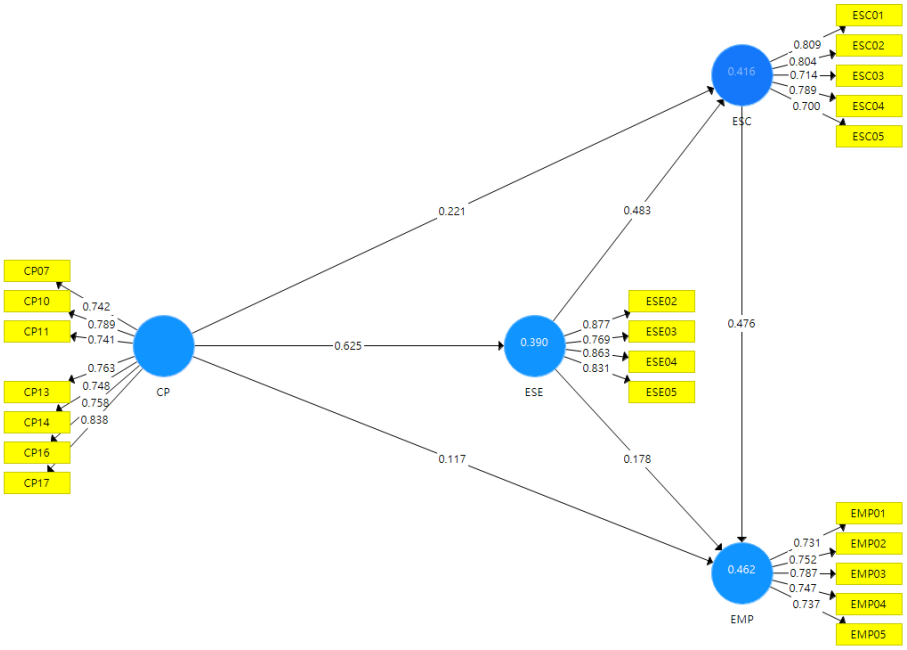

Figure 2. Tested Structural Model

5. Discussion and Conclusion

5.1 Summary of Key Findings

This study targeted photography students in graphic communication departments and, through PLS-SEM structural equation modeling, examined the relationships among competency preparation, employment self-efficacy, employment confidence, and employability. The results indicate that competency preparation has a significant positive effect on employment self-efficacy, and that both employment self-efficacy and employment confidence fully mediate the relationship between competency preparation and employability.

5.2 Theoretical Contributions and Implications

This research extends self-efficacy theory [5] by emphasizing the critical mediating roles of employment self-efficacy and employment confidence in the development of university students' employability. The findings not only support the theoretical predictions regarding the influence of self-efficacy on academic and behavioral outcomes, but also confirm that these psychological resources are essential for bridging the gap between academic learning and workplace demands in higher education. Additionally, the study enriches employability theory [1] by demonstrating that soft skills, such as self-efficacy and confidence, are as vital as professional competencies. Based on the findings, future research should consider incorporating additional psychological variables to more comprehensively explore the diverse factors influencing university students' employability.

5.3 Practical Implications and Recommendations

For educational institutions, curriculum design should move beyond traditional skill-based approaches and prioritize the cultivation of self-efficacy and confidence. This can be achieved

through strategies such as project-based learning (PBL) and mentorship from industry professionals, enabling students to develop both professional skills and essential soft skills. For employers, psychological traits should be incorporated into recruitment criteria to enhance new employees' adaptability and workplace performance. This study provides theoretical and empirical support for curriculum development, recruitment, and employee development, contributing to narrowing the gap between academic training and workplace requirements.

5.4 Policy Recommendations

Educational institutions are encouraged to:

Implement Career Counseling: Make career planning courses compulsory, organize regular industry visits, and provide career advisory services to students.

Develop Internship Programs: Assist students in securing internship opportunities and provide targeted professional training related to internships.

Assess Students' Psychological Readiness: Use self-efficacy and other psychological scales to understand students' psychological states and competency needs, thereby bridging the gap between academic learning and industry demands in a rapidly changing environment.

5.5 Research Scope and Limitations

5.5.1 Research scope

This study focuses on current students and recent graduates (within five years) of photography programs in graphic communication departments in Taiwan. It examines the status and interrelationships among competency preparation, employment self-efficacy, employment confidence, and employability, based on 92 valid questionnaire responses collected between November and December 2024. Analysis was conducted using Partial Least Squares Structural Equation Modeling (PLS-SEM).

5.5.2 Research limitations

1. Sample Limitation:

   The sample size of 92 may not adequately represent the entire target population, which could limit the generalizability and statistical reliability of the findings. Furthermore, since all participants were from Taiwan, the results may not be directly applicable to other countries or cultural settings. While the sample size is consistent with previous PLS-SEM research, it may still constrain the external validity of the study. Future research should aim to include larger and more diverse samples to enhance the robustness and generalizability of the results.

2. Methodological Limitation:

   Data were collected via self-administered questionnaires, which may be affected by respondent bias and may not capture all influencing factors, such as family support or internship experience.

3. Scope Limitation:

   The study specifically examines competency preparation, employment self-efficacy,

employment confidence, and employability, without addressing additional psychological or social variables (e.g., workplace adaptability, creativity) that may also play a role.

5.6 Conclusion

This study confirmed the multiple pathway relationships and mediating effects among competency preparation, employment self-efficacy, employment confidence, and employability. The findings offer practical recommendations for educational institutions and employers and provide a foundation for future theoretical development. It is hoped that this research will help bridge the gap between academic learning and practical application, enhance graduates' competitiveness in the workforce, and promote ongoing progress in higher education.

Acknowledgements

This article received no financial or funding support.

Conflicts of Interest

The author confirms that there are no conflicts of interest.

References

[1] Hillage, J. and Pollard, E. Employability: Developing a framework for policy analysis. Labour Market Trends, 1988, 107, 83–84.

[2] Knight, P. and Yorke, M. Employability and good learning in higher education. Teaching in Higher Education, 2003, 8(1), 3–16. DOI: 10.1080/1356251032000052294.

[3] Makki, Bilal Iftikhar, Salleh, Rohani, Memon, Mumtaz Ali and Harun, Haryanni. The relationship between work readiness skills, career self-efficacy and career exploration among engineering graduates: A proposed framework. Research Journal of Applied Sciences, Engineering and Technology, 2015, 10(9), 1007–1011. DOI: 10.19026/rjaset.10.1867. Google 學術搜尋+9ResearchGate+9ResearchGate+9

[4] Stajkovic, Alex and Luthans, Fred. Self-efficacy and work-related performance: A meta-analysis. Psychological Bulletin, 1998, 124, 240–261. DOI: 10.1037/0033-2909.124.2.240.

[5] Bandura, A. and National Institute of Mental Health. Social foundations of thought and action: A social cognitive theory. Prentice-Hall, Inc., 1986.

[6] Van den Hof, R.A. Self-esteem, self-efficacy and employability among disadvantaged youth [Master's Thesis]. Utrecht University, 2015. Available online: https://studenttheses.uu.nl/bitstream/handle/20.500.12932/21378/Final%20Master%20Thesis%20Renske%20van%20den%20Hof%20UU.pdf?sequence=2.

[7] Mistry, Usha. Enhancing students' employability skills awareness through the accounting professional body on an undergraduate accounting degree. Accounting Education, 2021, 30, 1–23. DOI: 10.1080/09639284.2021.1950016.

[8] Wujema, B.K., Mohd Rasdi, R. and Zaremohzzabieh, Z. Self-efficacy as a mediating variable in the CareerEDGE employability model. Sustainability, 2022, 14(8), Article 4660. DOI: 10.3390/su14084660.

[9] Ahmed, Hanzla, Nawaz, Shahid and Rasheed, Muhammad Imran. Self-efficacy, self-esteem, and career success: The role of perceived employability. Journal of Management Sciences, 2019, 6(2), 18–32.

[10] Fugate, M., Kinicki, A.J. and Ashforth, B.E. Employability: A psycho-social construct, its dimensions, and applications. Journal of Vocational Behavior, 2004, 65(1), 14–38. DOI: 10.1016/j.jvb.2003.10.005.

[11] Pool, L.D. and Qualter, P. Emotional self-efficacy, graduate employability, and career satisfaction: Testing the associations. Australian Journal of Psychology, 2013, 65(4), 214–223. DOI: 10.1111/ajpy.12023.

[12] Qenani, E., MacDougall, N. and Sexton, C. An empirical study of self-perceived employability: Improving the prospects for student employment success in an uncertain environment. Active Learning in Higher Education, 2014, 15(3), 199–213. DOI: 10.1177/1469787414544875.

[13] Lee, S.F., Wu, T.F., Chang, C.C. and Lin, H.T. Revision and validation of the Chinese Work Self-Efficacy Scale and its reliability among individuals with mental disorders. Taiwan Journal of Occupational Therapy Research and Practice, 2014, 10(2), 84–93. (in Chinese)

[14] Workforce Development Agency, Ministry of Labor. National Occupational Competency Standards for Bridal Photography Personnel (AVA3431-001v1). Taiwan: Ministry of Labor, 2021. (in Chinese)

[15] Nevada Department of Education. State Skill Standards for Photography, 2007. Available online: https://doe.nv.gov.

[16] Liu, Y.C. A study on the importance of prepress personnel competencies in different printing industries [Master's Thesis]. National Taiwan University of Arts, 2021. (in Chinese)

[17] Senan, N.A.M. and Sulphey, M.M. Construction and validation of the employability questionnaire for accounting graduates. Education + Training, 2022, 64(1), 141–159. DOI: 10.1108/ET-04-2021-0152.

[18] Myburgh, W., Watson, M.B. and Foxcroft, C.D. Development and validation of a managerial decision-making self-efficacy questionnaire. SA Journal of Industrial Psychology, 2015, 41(1), Article 1218. DOI: 10.4102/sajip.v41i1.1218.

[19] Hair, J.F., Risher, J.J., Sarstedt, Marko and Ringle, Christian M. When to use and how to report the results of PLS-SEM. European Business Review, 2019, 31(1), 2–24. DOI: 10.1108/EBR-11-2018-0203.

[20] Hair, J.F., Hult, G.T.M., Ringle, C.M. and Sarstedt, M. A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM). 2nd ed., Sage Publications Inc., Thousand Oaks, CA, 2017.

[21] Faul, F., Erdfelder, E., Buchner, A. and Lang, A.-G. Statistical power analyses using G*Power 3.1: Tests for correlation and regression analyses. Behavior Research Methods, 2009, 41, 1149–1160. DOI: 10.3758/BRM.41.4.1149.

[22] Becker, J.M., Klein, K. and Wetzels, M. Hierarchical latent variable models in PLS-SEM: Guidelines for using reflective-formative type models. Long Range Planning, 2012, 45(5–6), 359–394. DOI: 10.1016/j.lrp.2012.10.001.

[23] Coltman, T., Devinney, T.M., Midgley, D.F. and Venaik, S. Formative versus reflective measurement models: Two applications of formative measurement. Journal of Business Research, 2008, 61(12), 1250–1262. DOI: 10.1016/j.jbusres.2008.01.013.

[24] Adamson, K.A. and Prion, S. Reliability: Measuring internal consistency using Cronbach's α. Clinical Simulation in Nursing, 2013, 9(5), e179–e180. DOI: 10.1016/j.ecns.2012.12.001.

[25] Schweizer, K. On the changing role of Cronbach's α in the evaluation of the quality of a measure [Editorial]. European Journal of Psychological Assessment, 2011, 27(3), 143–144. DOI: 10.1027/1015-5759/a000069.

[26] Padilla, M.A. and Divers, J.A. A comparison of composite reliability estimators: Coefficient omega confidence intervals in the current literature. Educational and Psychological Measurement, 2016, 76(3), 436–453. DOI:

10.1177/0013164415593776.

[27] Peterson, R.A. and Kim, Y. On the relationship between coefficient alpha and composite reliability. Journal of Applied Psychology, 2013, 98(1), 194–198. DOI: 10.1037/a0030767.

[28] Costea, P.I. et al. Towards standards for human fecal sample processing in metagenomic studies. Nature Biotechnology, 2017, 35(11), 1069–1076. DOI: 10.1038/nbt.3960.

[29] Bagozzi, R.P. and Yi, Y. On the evaluation of structural equation models. Journal of the Academy of Marketing Science, 1988, 16, 74–94. DOI: 10.1007/BF02723327.

[30] Rahim, A. and Cosby, D.M. A model of workplace incivility, job burnout, turnover intentions, and job performance. Journal of Management Development, 2016, 35(10), 1255–1265. DOI: 10.1108/JMD-09-2015-0138.

[31] Arifin, W.N. and Yusoff, M.S.B. Confirmatory factor analysis of the Universiti Sains Malaysia Emotional Quotient Inventory among medical students in Malaysia. SAGE Open, 2016, April–June, 1–9. DOI: 10.1177/2158244016650240.

[32] Awang, Z., Ahmad, J.H. and Zin, N.M. Modelling job satisfaction and work commitment among lecturers: A case of UiTM Kelantan. Journal of Statistical Modeling and Analytics, 2010, 1(2), 45–59.

[33] Henseler, J., Ringle, C.M. and Sarstedt, M. A new criterion for assessing discriminant validity in variance-based structural equation modeling. Journal of the Academy of Marketing Science, 2015, 43, 115–135. DOI: 10.1007/s11747-014-0403-8.