

Amos-based Analysis of the Factors Influencing Student Participation in Internationalization in Private Universities in Jiangsu Province

Hongyun Cheng¹, Ali Khatibi², Jacqueline Tham²

¹Nanjing University of Finance and Economics Hongshan College, Gaochun Dist., Nanjing, Jiangsu Province, 211300, China

²Post Graduate Centre, Management and Science University, University Drive, Off Persiaran Olahraga, Section 13, 40100, Selangor, Malaysia

Abstract

The internationalization of higher education has become a key strategy for enhancing the global competitiveness of universities, particularly in China. As private universities in Jiangsu Province are increasingly focused on improving their international presence, understanding the factors that influence student participation in international activities is crucial. This study analyzes these factors using the Amos model and structural equation modeling. The research explores the relationships between various institutional, socio-economic, and individual factors that affect students' engagement in internationalization. Key factors examined include institutional support such as international programs and exchange opportunities, student motivation and attitudes towards global exposure, family background and financial resources, perceived benefits of international experiences, and the role of faculty and peer influence. The findings provide valuable insights for university administrators and policymakers to enhance student participation in internationalization initiatives, with the goal of improving the global competitiveness of private higher education institutions in Jiangsu. This study contributes to the growing body of research on the internationalization of higher education, offering practical recommendations for fostering more inclusive and effective international engagement strategies.

Keywords

Private Universities; Internationalization; Influencing factors; Jiangsu.

1. Introduction

In the context of globalization, internationalization has become a crucial strategy for higher education institutions to improve educational quality and cultivate globally-minded talent (Knight, 2020). Private universities face increasingly fierce competition both domestically and internationally. Through internationalization, they can enhance their competitiveness, attract high-quality students, and improve teaching and research standards through international cooperation (De Wit and Altbach, 2021). Internationalization also offers private universities broader resources and platforms, and helps cultivate students with cross-cultural competence (Yang, 2020). In this process, student participation is seen as one of the key drivers of higher education internationalization, with its importance becoming increasingly evident. Given that student participation is not only a core element in the implementation of internationalization strategies but also an important indicator of the effectiveness of these strategies, it is essential to investigate the internal and external factors that influence student engagement in internationalization. Jiangsu Province, as a leading region in China's higher education development, has achieved significant progress in internationalization. However, it still faces

challenges related to insufficient student engagement in international activities. This is often linked to the insufficient dissemination of internationalization concepts, a lack of diversity in international exchange platforms, and uneven distribution of participation opportunities and resources.

Understanding the factors that influence internationalization abilities helps in proposing practical measures for fostering global competence. Therefore, both domestic and international scholars have conducted in-depth studies on the factors influencing student participation in internationalization. International researchers have explored internal factors such as foreign language proficiency, moral sensitivity, and individual personality differences, as well as external factors like cross-cultural exchange programs, international mobility experiences, and parental educational background. For example, Semaan and Yamazaki (2015) studied the influence of second-language learning motivation on university students' international engagement, finding that stronger motivation for second-language learning led to higher levels of internationalization. Meng et al. (2018) also pointed out that Chinese students studying in Belgium had their internationalization significantly influenced by both their English and local language proficiency. Stankovska et al. (2019) discovered that higher moral sensitivity levels correlate strongly with better internationalization abilities. Kang et al. (2018) analyzed the impact of online cross-cultural programs, revealing that American students' cross-cultural communication skills and Korean students' international knowledge and open attitudes were significantly enhanced. Ortiz-Marcos et al. (2020) found that most employees who had international mobility experiences during their educational careers showed higher adaptability, flexibility, and social skills in their work environments.

Domestically, scholars mainly focus on academic backgrounds, institutional factors, and individual characteristics. In terms of academic background, He et al. (2019) examined the factors influencing the internationalization abilities of students at Yangzhou University. The study found that students majoring in the humanities, those in higher academic years, and students with better academic performance demonstrated higher internationalization abilities. Additionally, students from eastern provinces, urban areas, and high-income families were found to have stronger internationalization skills. From the institutional perspective, Li et al. (2018) argued that bilingual teaching and student exchange programs both effectively enhance students' internationalization abilities, with exchange programs having a more significant impact. Wu (2020) examined the relationship between institutional support and students' internationalization abilities, finding that higher levels of institutional support contributed significantly to students' development in internationalization. As for individual factors, employment expectations were found to influence internationalization abilities. Zhang et al. (2018) pointed out that students with expectations to work in public sectors had significantly lower internationalization abilities than those aiming for non-public sector jobs. Xu et al. (2019) conducted a study at a Chinese research university and found that students' participation in internationalization experiences within China was higher than their participation abroad. Moreover, domestic international experiences had a comparable impact on developing internationalization abilities as overseas experiences. Scholars have also examined students' learning strategies, which play a key role in shaping their internationalization abilities. Yang et al. (2020) discussed how learning strategies significantly affect internationalization abilities, particularly among vocational college students.

However, current research rarely focuses on the factors influencing the internationalization of education in China's private universities. Therefore, this study focuses on private universities in Jiangsu Province. The aim is to analyze the internal and external factors affecting student participation in internationalization from a new perspective on educational internationalization. Through systematic research, this study seeks to identify how these factors affect student participation in internationalization, explore effective pathways to

enhance student enthusiasm and international experiences, and contribute to the continued development of private universities in Jiangsu on the path of internationalization. Ultimately, this research aims to transform the identified factors and their mechanisms into universally applicable practical strategies, offering insights for private universities in other regions and the broader higher education system in China, thereby promoting the internationalization of Chinese higher education to a higher and deeper level.

2. Model Construction and Data Analysis

2.1. Research Method

This study proposes hypotheses regarding the factors influencing student participation in the internationalization of private universities in Jiangsu Province. To analyze these hypotheses and process the data, we employ the Amos structural equation modeling (SEM) method to identify the factors and their impact on the internationalization of private universities in Jiangsu. Structural equation modeling, developed by Swiss statistician Karl Jöreskog (1970), is a widely used multivariate statistical technique that integrates factor analysis and path analysis, particularly applied in the social sciences. From a practical perspective, this study uses the Amos software to construct the SEM (Byrne, 2001), addressing the complex multivariate data present in this research.

2.2. Model Construction

Based on a review of existing literature, this study identifies the internal and external factors that influence students' willingness to participate in internationalization and the internationalization level of private universities. Corresponding research hypotheses are proposed, and a model framework for this study is developed, as shown in Figure 1.

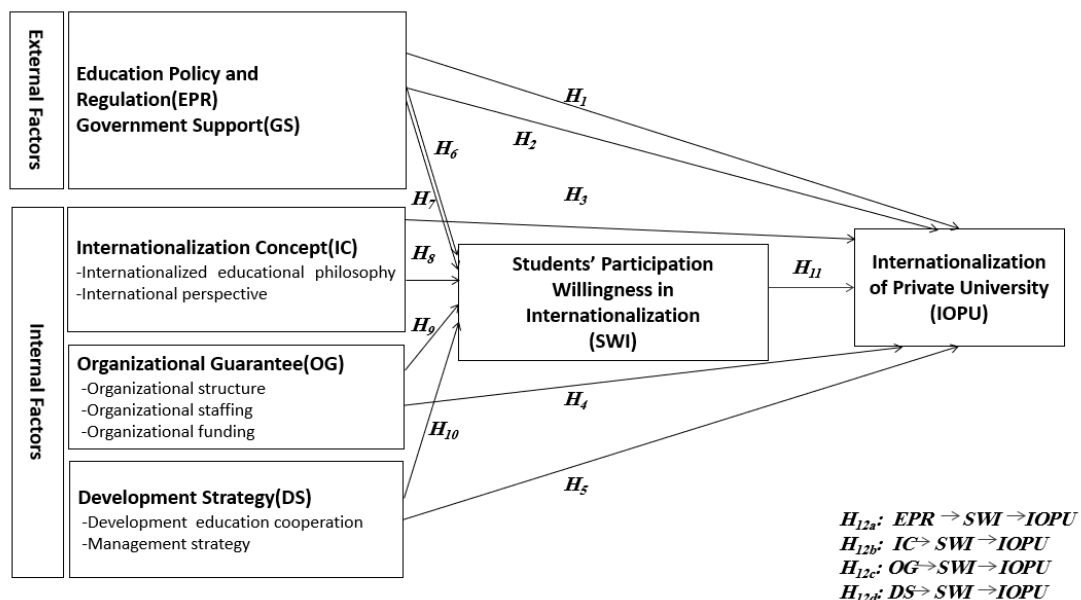


Figure 1. Model Framework

Based on the model framework, the following 12 research hypotheses are proposed:

H1: Educational policies and regulations have a positive impact on the internationalization of private universities.

H2: Government support has a positive impact on the internationalization of private universities.

H3: The concept of internationalization has a positive impact on the internationalization of private universities.

H4: Organizational support has a positive impact on the internationalization of private universities.

H5: Development strategies have a positive impact on the internationalization of private universities.

H6: Educational policies and regulations have a positive impact on students' willingness to participate in the internationalization of private universities.

H7: Government support has a positive impact on students' willingness to participate in internationalization.

H8: The concept of internationalization has a significant impact on students' willingness to participate in internationalization.

H9: Organizational support has a positive impact on students' willingness to participate in internationalization.

H10: Development strategies have a significant impact on students' willingness to participate in internationalization.

H11: Students' willingness to participate in internationalization has a significant impact on the internationalization of private universities.

H12a: Students' willingness to participate in internationalization mediates the relationship between educational policies and regulations and the internationalization of private universities.

H12b: Students' willingness to participate in internationalization mediates the relationship between government support and the internationalization of private universities.

H12c: Students' willingness to participate in internationalization mediates the relationship between organizational support and the internationalization of private universities.

H12e: Students' willingness to participate in internationalization mediates the relationship between development strategies and the internationalization of private universities.

2.3. Survey Design and Data Collection

The survey design process includes several important steps: theoretical conceptualization, operationalization of concepts, preliminary exploration, draft preparation, pilot testing, revisions, and finalization. In the theoretical conceptualization, this study used Wenjuanxing as the survey tool, mainly based on the following resources for development. First, the study utilized the university student internationalization questionnaire tested by Schwietz and Beatty as the base template, and combined feedback from interviews with stakeholders in private universities in Jiangsu. This feedback led to a comprehensive revision, translation, and supplementation of the questionnaire template, adopting a 5-point Likert scale. Second, the survey incorporated questions related to work and career status, personal background, and academic preparation, as well as questions concerning students' experiences.

The questionnaire consists of two parts: Part A: Demographic information, including gender, grade, major, and university. Part B: Measurement of the six key variables in this study. Part B includes seven components: Educational policies and regulations, Government support, Concept of internationalization, Organizational support, Development strategies, Students' willingness to engage in internationalization, and Internationalization of private universities. The Likert scale was used for responses, ranging from 1 to 5, where: 1 = "Strongly Disagree", 2 = "Disagree", 3 = "Neutral", 4 = "Agree", 5 = "Strongly Agree". For the formal survey, a stratified sampling method was employed. Two schools were selected from the northwest, two from the southwest, two from the southeast, and one each from the central and northeastern regions. The universities sampled were: Suzhou University of Science and Technology, Suzhou Campus

(60 participants), Nanjing University of Finance and Economics, Hongshan College (80 participants), Nanjing Normal University, Taizhou College (80 participants), Nanjing Medical University, Kangda College (80 participants), Sanjiang University (160 participants), Suzhou University of Science and Technology, Tianping College (70 participants), and China University of Mining and Technology, Xuhai College (61 participants). These universities provide a representative sample for the study. In total, 850 questionnaires were distributed, and 687 valid responses were collected.

2.4. Reliability and Validity Testing of the Questionnaire

The reliability analysis of the survey data shows that the measurement model exhibits high internal consistency. The Cronbach's alpha values for the individual dimensions, such as government support, internationalization concepts, international education, and organizational support, range from 0.858 to 0.924, indicating strong reliability. Additionally, the items related to organizational structure, development strategies, and student participation also demonstrate satisfactory reliability, with alpha values between 0.862 and 0.904. Overall, the total Cronbach's alpha value of 0.963 signifies excellent reliability, suggesting that the survey is a trustworthy instrument for measuring the factors influencing student participation in the internationalization of private universities in Jiangsu. These findings support the robustness of the data and its suitability for further analysis.

Table 1. Cronbach's Alpha Coefficients for Survey Sample Data

Variable	Dimension	Items	Cronbach's Alpha Coefficient	
Government Support	/	5	0.898	
	/	5	0.883	
	International Education Concept	5	0.873	
Internationalization Concept		5	0.858	0.888
	International Vision			
Organizational Support	Organizational Structure	5	0.869	
	Organizational Personnel Allocation	5	0.897	0.924
	Organizational Funds	5	0.904	
Development Strategy	Educational Cooperation Development	5	0.862	0.894
	Management Strategy	5	0.874	
Student Willingness to Participate in Internationalization	/	7	0.916	
Internationalization of Private Universities	/	7	0.929	
Total	/	59	0.963	

2.5. Validity Test of the Questionnaire

Validity analysis is used to assess the reasonableness of the design of quantitative data, determining whether the research items are meaningful. The test primarily analyzes the KMO (Kaiser-Meyer-Olkin) value, which ranges from 0 to 1. Ideally, the closer the KMO value is to 1, the more variance is shared between the variables, indicating stronger partial correlations between the variables and making the dataset more suitable for factor analysis. In the table below, the KMO value of 0.960 is greater than 0.6, which is generally considered acceptable. Therefore, the questionnaire demonstrates high validity and is suitable for further analysis.

Table 2. KMO and Bartlett's Test for the Survey Sample Data

KMO and Bartlett's Test		
KMO		.960
Bartlett's Test of Sphericity	Approx. Chi-Square	26128.554
	df	1770
	Sig.	.000

3. Results Analysis

3.1. Confirmatory Factor Analysis (CFA)

3.1.1. CFA via Individual Measurement Model

Many variables in fields such as economics, management, sociology, and psychology cannot be accurately or directly measured. These variables are referred to as latent variables. Latent variables are abstract, theoretical, and not directly observable. Since latent variables cannot be observed directly, they are typically reflected indirectly through a set of observed variables in structural equation modeling (SEM). These observed variables are specific items in the questionnaire, and their scores or results are used to estimate the values of the latent variables. Latent variables usually represent highly abstract concepts that do not have a direct correspondence in reality but are constructed through theoretical frameworks and logical reasoning. Their introduction and interpretation must be based on certain theoretical foundations and assumptions, which provide the necessary support for the existence and interpretation of latent variables.

Figure 2 shows the results of the confirmatory factor analysis (CFA) for EPR and GS. For EPR, the factor analysis revealed five observed variables (EPR1 to EPR5) and one latent factor. The path coefficients between each variable and the latent factor (e.g., .85, .90) represent the degree of association between the variables and the factor. Higher path coefficients indicate a stronger relationship between the variables and the latent factor. The model fit indices show that the Normed Chi Square/DF value is 1.612, CFI (Comparative Fit Index) is 0.998, and RMSEA (Root Mean Square Error of Approximation) is 0.030, all indicating a very good fit between the model and the data. A CFI value close to 1 and an RMSEA value less than 0.05 are typically considered good model fit. For GS, the factor analysis revealed five observed variables (GS1 to GS5) and one latent factor. The path coefficients between each variable and the latent factor (e.g., .92, .74) also indicate the degree of association. Higher path coefficients signify a stronger relationship. The model fit indices show that the Normed Chi Square/DF value is 5.524, CFI is 0.988, and RMSEA is 0.008, indicating strong associations between the variables. After model modification, the Normed Chi Square/DF value improved to 1.198, CFI to 1.000, and RMSEA to 0.017. The modified data are considered to represent a good model fit.

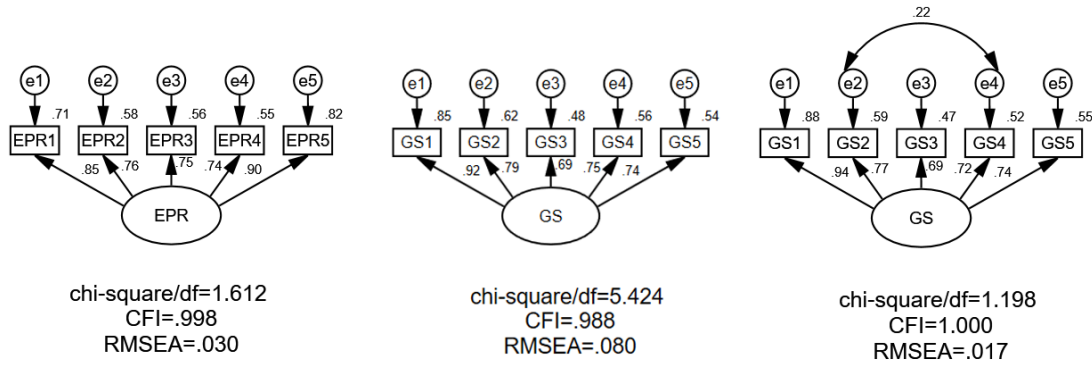


Figure 2. Confirmatory Factor Analysis for EPR and GS

Figure 3 shows confirmatory factor analysis for IEP, IP, and IC. In the factor analysis of IP, five observed variables (IP1 to IP5) are explained by a latent factor (IP). The factor loadings (e.g., .82 for IP1 and .74 for IP2) indicate the degree of correlation between each observed variable and the latent factor. These loadings are relatively high, suggesting a strong association between the variables and the latent factor. The model fit indices show that the Normed Chi Square/DF value is 0.672, CFI is 1.000, and RMSEA is 0.000, indicating an excellent fit between the model and the data. A CFI value of 1.000 signifies a perfect fit. In the IC factor analysis, two latent factors, IEP and IP, were identified. The IEP factor consists of five observed variables (IEP1 to IEP5), while the IP factor consists of five observed variables (IP1 to IP5). The factor loadings (e.g., .85 for IEP1 and .81 for IP1) show strong correlations between the observed variables and their respective latent factors. These high loadings further indicate a strong relationship. The fit indices for the IC model show a Normed Chi Square/DF value of 1.024, CFI of 1.000, and RMSEA of 0.006, indicating a very good model fit, though slightly less optimal than the IP model.

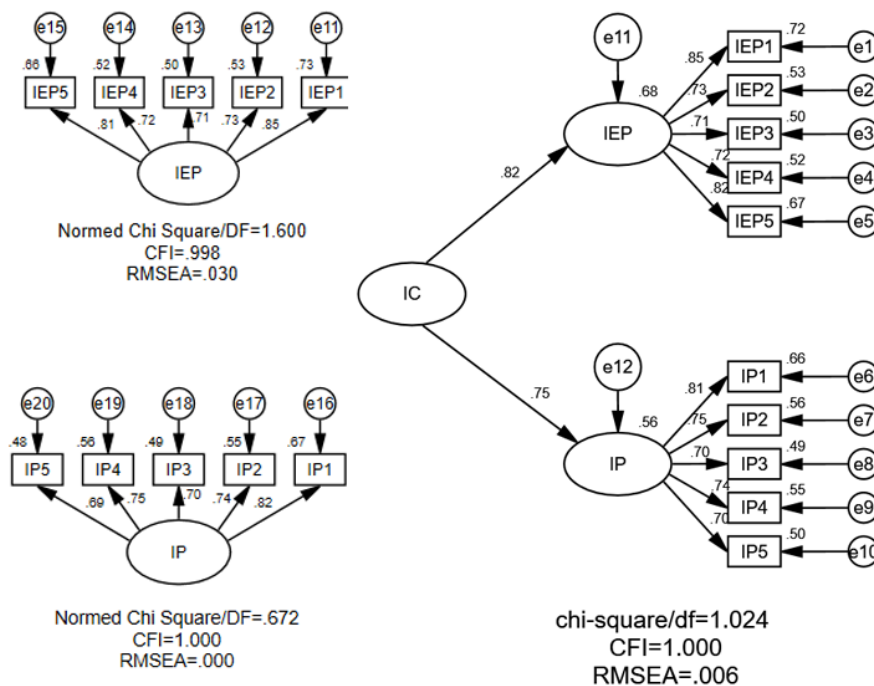


Figure 3. Confirmatory Factor Analysis for IP and IC

Figure 4 shows confirmatory factor analysis for O and OS. In the factor analysis for O, five observed variables (O1 to O5) are explained by a latent factor (O). The factor loadings (e.g., .81

for O1 and .72 for O2) indicate a strong relationship between the variables and the latent factor. The model fit indices show that the Normed Chi Square/DF value is 1.761, CFI is 0.998, and RMSEA is 0.033, suggesting a very good fit, with CFI close to 1.000, indicating almost perfect fit between the model and data. In the OS factor analysis, five observed variables (OS1 to OS5) are explained by a latent factor (OS). The factor loadings (e.g., .93 for OS1 and .83 for OS2) indicate a strong association between the observed variables and the latent factor. The fit indices show that the Normed Chi Square/DF value is 6.918, CFI is 0.986, and RMSEA is 0.093. Although slightly less optimal than the O model, these results still demonstrate a very good model fit.

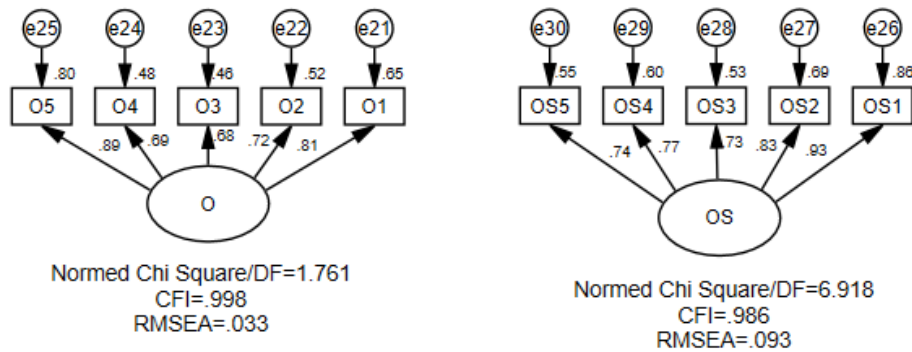


Figure 4. Confirmatory Factor Analysis for O and OS

In the analysis of OS, the initial model was adjusted to achieve a good fit. The revised model has a Normed Chi Square/DF value of 2.105, CFI of 0.998, and RMSEA of 0.040, which indicate a very high model fit. OS consists of five observed variables (OS1 to OS5), all of which show high loadings, indicating a strong correlation with the latent factor. In the OF analysis, the initial model also showed good fit indices, with a Normed Chi Square/DF value of 2.947, CFI of 0.995, and RMSEA of 0.053. OF consists of five observed variables (OF1 to OF5), which also demonstrate high factor loadings, reflecting strong associations with the latent factor.

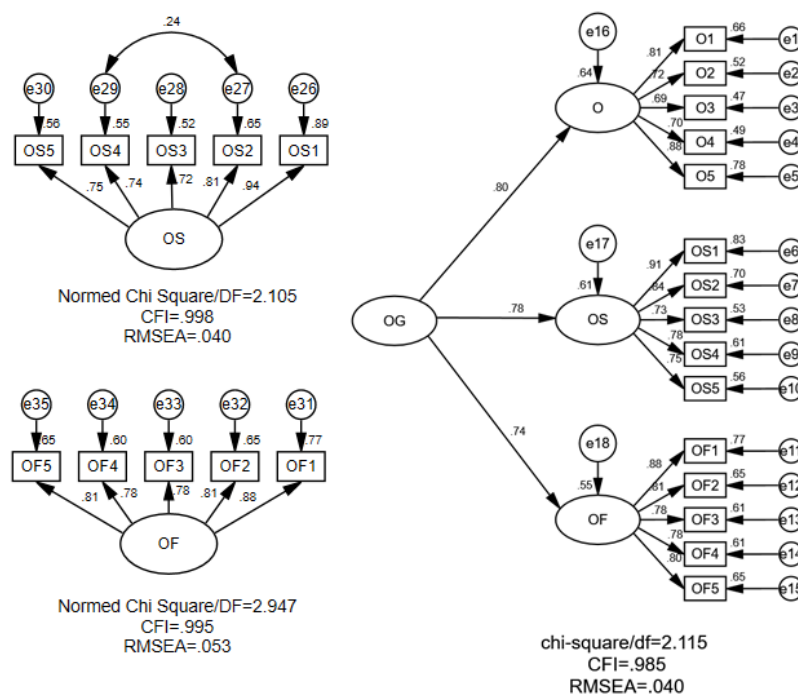


Figure 5. Confirmatory factor analysis for adjusted OS, OF, and OG

Figure 5 also shows the factor analysis results for the entire set of variables, including the two latent factors: O and OS. The path coefficients between each observed variable (e21 to e35) and the latent factors reflect the strength of their relationships. O is strongly associated with variables e21 to e25, OS is strongly linked to variables e26 to e30, and OF is strongly correlated with variables e31 to e35. The overall model fit indices show a Normed Chi Square/DF value of 2.115, CFI of 0.985, and RMSEA of 0.040, indicating very good fit. The CFI close to 1 and RMSEA below 0.05 further support the excellent fit between the model and the data. These results suggest that the proposed factor structure effectively explains the correlations between the observed variables, providing a solid statistical foundation for further research. Through this factor analysis, the data structure has been simplified, revealing latent factors that are critical for understanding the relationships between variables and conducting subsequent statistical analyses.

Figure 6 shows Confirmatory Factor Analysis for DEC. The DEC model shows excellent fit indices, with CFI reaching 0.999, which is very close to 1, indicating an excellent fit between the model and the data. The RMSEA of 0.015 is well below the acceptable threshold of 0.05, further confirming the superior fit of the model. The Normed Chi Square/DF value is 1.163, which is considered good as values less than 3 generally indicate good model fit. Similarly, the MS model shows good model fit, with a CFI of 0.994, RMSEA of 0.052 (slightly higher than DEC but still within an acceptable range), and a Normed Chi Square/DF value of 2.877, indicating a reasonable fit with the data.

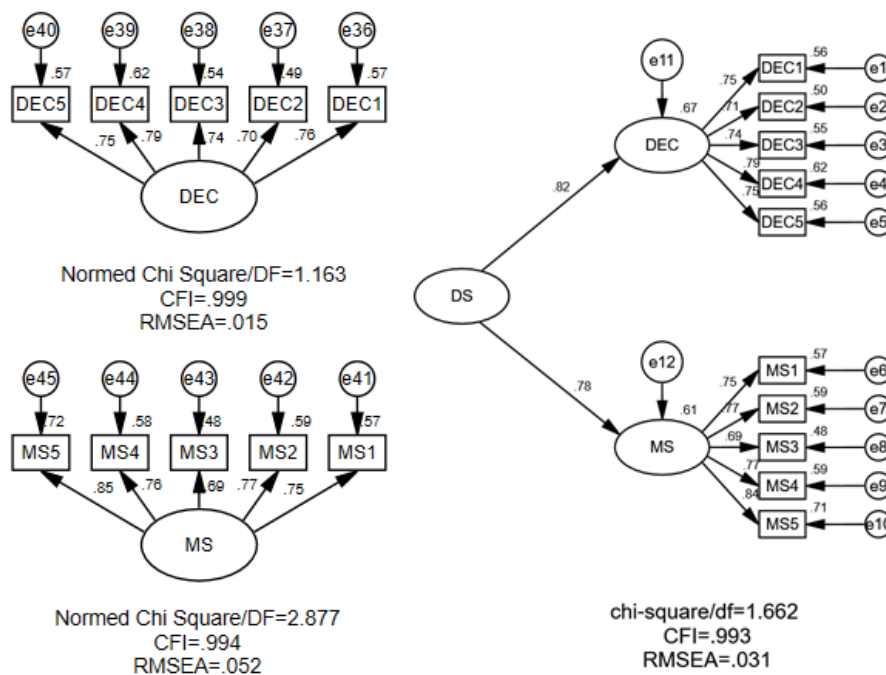


Figure 6. Confirmatory Factor Analysis for DEC, MS and DS

Figure 6 also presents the factor structure models for two latent variables, DEC and MS. DEC is composed of five indicators (DEC1 to DEC5), while MS consists of five sub-factors (MS1 to MS5). The path coefficients between each indicator or sub-factor and the latent variables represent the strength of their relationships. For example, the path coefficient between DEC1 and DEC is 0.75, indicating a strong correlation between them. The model fit is assessed using three indices: Normed Chi Square/DF, CFI, and RMSEA. The Normed Chi Square/DF value is 1.662, which is close to the ideal value, indicating a good fit between the model and the data. The CFI value is 0.993, close to 1, demonstrating high model fit. The RMSEA value is 0.031, well below the

acceptable threshold of 0.05, further confirming the superior fit of the model. These results suggest that the factor structure models for DEC and MS effectively explain the variation in the data, providing a solid foundation for further research and application.

Figure 7 illustrates the factor structure model for SWI, which consists of seven indicators (SWI1 to SWI7). The path coefficients between each indicator and the latent variable SWI represent the strength of their relationships. For example, the path coefficient between SWI1 and SWI7 is 0.82, indicating a strong correlation. Model fit is evaluated using the Normed Chi Square/DF, CFI, and RMSEA indices. The Normed Chi Square/DF value is 1.928, close to the ideal value, indicating a good fit between the model and the data. The CFI value is 0.995, close to 1, indicating high model fit. The RMSEA value is 0.037, well below the acceptable threshold of 0.05, further confirming the excellent model fit. These results indicate that the factor structure model for SWI effectively explains the variation in the data, providing a solid foundation for further research and application. By identifying and quantifying these relationships, we can more effectively design and evaluate strategies and interventions to enhance student participation willingness.

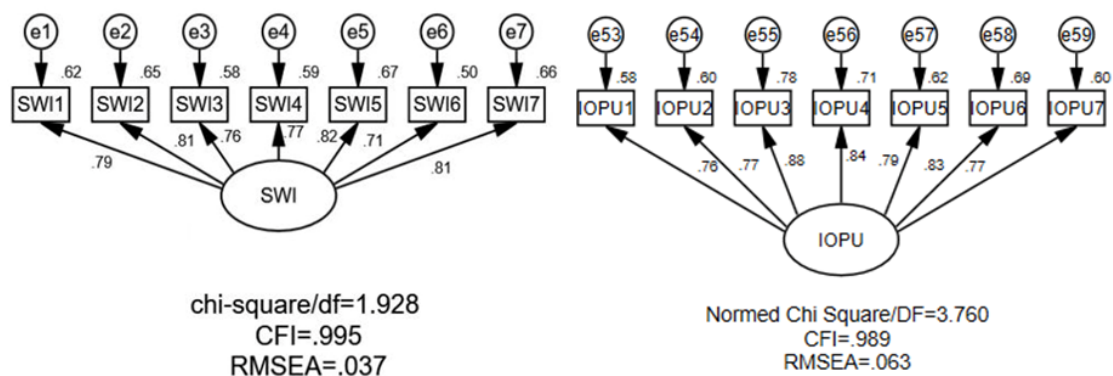


Figure 7. Confirmatory Factor Analysis of SWI and IOPU

Figure 7 also shows the factor structure model for the IOPU latent variable, which consists of seven indicators (IOPU1 to IOPU7). The path coefficients between each indicator and the latent variable IOPU reflect the strength of their relationships. For example, the path coefficient between IOPU1 and IOPU7 is 0.78, indicating a strong relationship. The model fit is evaluated using the Normed Chi Square/DF, CFI, and RMSEA indices. The Normed Chi Square/DF value is 3.760, which is slightly higher than the ideal value but still within an acceptable range, indicating good model fit. The CFI value is 0.989, close to 1, demonstrating high model fit. The RMSEA value is 0.063, slightly above the acceptable threshold of 0.05, but still within an acceptable range, further confirming the model's fit. These results suggest that the factor structure model for IOPU adequately explains the variation in the data, providing a basis for further research and application. By identifying and quantifying these relationships, we can design and evaluate strategies and interventions more effectively to promote the internationalization of private universities.

3.1.2. CFA via Overall Measurement Model

CFA is a statistical method used to examine the degree of fit between the measurement model and the data. Figure 8 presents the results of CFA conducted using the overall measurement model, which shows good model fit indicators. Specifically, the ratio of the standardized chi-square value (Normed Chi Square) to the degrees of freedom (DF) is 1.229, which is close to the ideal value of 1.0, indicating a good fit between the model and the data. Additionally, the Comparative Fit Index (CFI) is 0.985, approaching 1.0, further confirming the model's fit. The Root Mean Square Error of Approximation (RMSEA) is 0.018, which is below the threshold of

0.05, indicating that the model's error is within an acceptable range. These results suggest that the constructed measurement model effectively reflects the data structure, offering high explanatory power and predictive capability. Through CFA, researchers can confirm the validity of the factors in the model, providing a solid foundation for subsequent empirical research. In terms of the measurement relationships: for each factor, the absolute value of the standardized factor loadings is greater than 0.6, and they show statistical significance. This indicates that the measurement relationships are strong and reliable, demonstrating good construct validity.

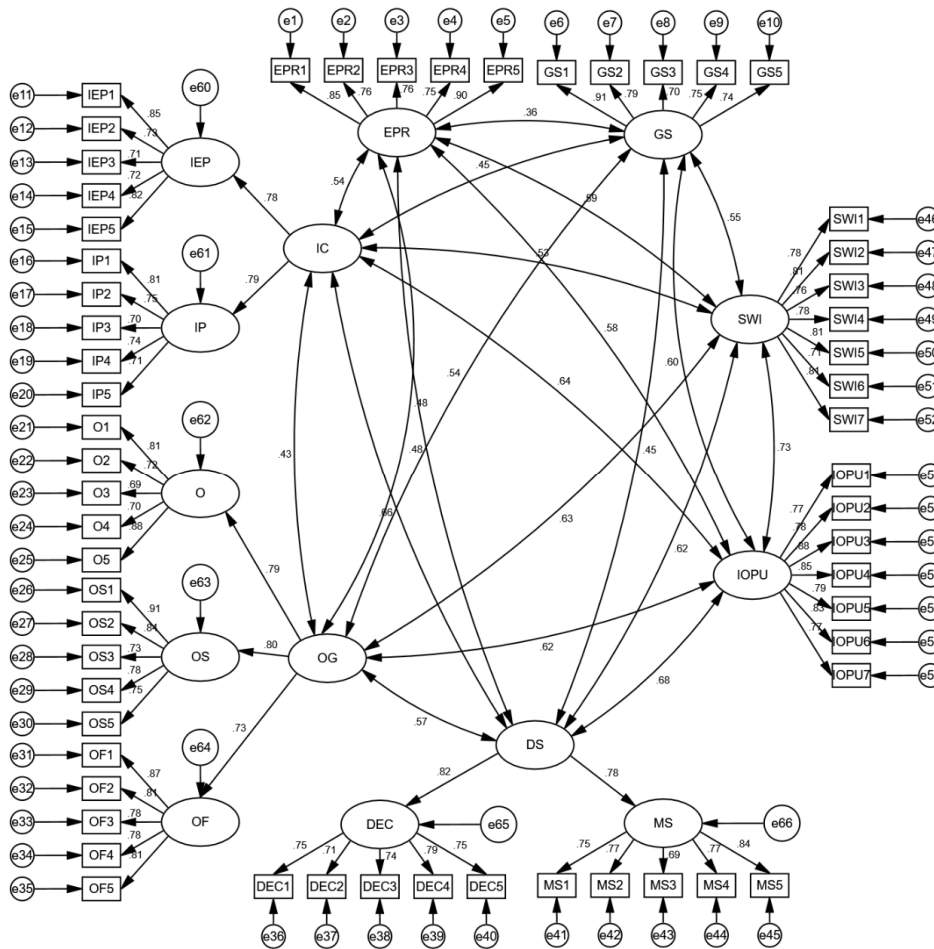


Figure 8. Confirmatory Factor Analysis (CFA) of the Overall Model

3.2. Structural Equation Modeling Analysis

The estimation results in Figure 9 show that the model has a good fit. The Normed Chi Square/DF value is 1.229, indicating that the model's fit with the data is within an acceptable range. Typically, a value below 2 suggests a good model fit. The CFI (Comparative Fit Index) is 0.985, which is close to 1, indicating a very high degree of fit between the model and the data. The closer the CFI is to 1, the better the model fit. The RMSEA (Root Mean Square Error of Approximation) value is 0.018, which is less than 0.05, indicating a small model error and a good fit. These indicators collectively suggest that the model effectively reflects the data structure and has high explanatory and predictive power. Overall, this structural equation model not only fits well statistically but also demonstrates high explanatory power theoretically, offering valuable insights for research in related fields. The establishment and validation of this model provide a solid foundation for further exploring the relationships between latent variables and contribute to a deeper understanding of the research topic.

Table 3. Factor Loadings Table

	Items		Estimate	S.E.	C.R.	P	STD Estimate
IEP	<---	IC	1				0.78
IP	<---	IC	1.114	0.088	12.639	***	0.791
O	<---	OG	1				0.792
OS	<---	OG	1.184	0.077	15.33	***	0.798
OF	<---	OG	0.915	0.064	14.324	***	0.735
DEC	<---	DS	1				0.817
MS	<---	DS	1.001	0.081	12.42	***	0.782
EPR1	<---	EPR	1				0.845
EPR2	<---	EPR	0.91	0.04	23.034	***	0.757
EPR3	<---	EPR	0.965	0.042	22.974	***	0.756
EPR4	<---	EPR	0.867	0.038	22.597	***	0.747
EPR5	<---	EPR	1.172	0.039	29.801	***	0.898
GS1	<---	GS	1				0.909
GS2	<---	GS	0.88	0.033	26.354	***	0.791
GS3	<---	GS	0.773	0.036	21.631	***	0.699
GS4	<---	GS	0.823	0.034	24.214	***	0.751
GS5	<---	GS	0.802	0.034	23.814	***	0.744
IEP1	<---	IEP	1				0.846
IEP2	<---	IEP	0.916	0.043	21.091	***	0.727
IEP3	<---	IEP	0.929	0.045	20.439	***	0.71
IEP4	<---	IEP	0.911	0.043	20.956	***	0.723
IEP5	<---	IEP	0.936	0.038	24.735	***	0.817
IP1	<---	IP	1				0.81
IP2	<---	IP	1.034	0.05	20.535	***	0.751
IP3	<---	IP	0.864	0.046	18.89	***	0.7
IP4	<---	IP	0.91	0.045	20.229	***	0.741
IP5	<---	IP	0.906	0.047	19.114	***	0.707
O1	<---	O	1				0.81
O2	<---	O	0.935	0.046	20.32	***	0.723
O3	<---	O	0.953	0.05	19.124	***	0.688
O4	<---	O	0.882	0.045	19.43	***	0.697
O5	<---	O	1.231	0.047	26.121	***	0.883
OS1	<---	OS	1				0.911
OS2	<---	OS	0.966	0.032	30.19	***	0.838
OS3	<---	OS	0.864	0.036	23.74	***	0.732
OS4	<---	OS	0.924	0.035	26.455	***	0.78
OS5	<---	OS	0.861	0.035	24.5	***	0.746
OF1	<---	OF	1				0.872
OF2	<---	OF	0.898	0.034	26.27	***	0.807
OF3	<---	OF	0.859	0.035	24.877	***	0.78
OF4	<---	OF	0.897	0.036	24.825	***	0.779
OF5	<---	OF	0.881	0.034	26.251	***	0.807
DEC1	<---	DEC	1				0.75
DEC2	<---	DEC	0.97	0.054	17.979	***	0.709
DEC3	<---	DEC	1.123	0.059	18.886	***	0.743
DEC4	<---	DEC	1.153	0.058	19.993	***	0.786
DEC5	<---	DEC	1.052	0.055	19.04	***	0.749
MS1	<---	MS	1				0.751
MS2	<---	MS	0.938	0.047	19.859	***	0.766
MS3	<---	MS	0.864	0.048	17.898	***	0.695
MS4	<---	MS	1.044	0.052	20.078	***	0.774
MS5	<---	MS	1.036	0.047	21.88	***	0.841
SWI1	<---	SWI	1				0.783
SWI2	<---	SWI	1.058	0.046	23.087	***	0.808
SWI3	<---	SWI	0.953	0.044	21.482	***	0.763
SWI4	<---	SWI	0.976	0.044	21.925	***	0.775
SWI5	<---	SWI	0.972	0.042	23.138	***	0.809
SWI6	<---	SWI	0.846	0.043	19.849	***	0.715
SWI7	<---	SWI	1.059	0.046	23.27	***	0.813
IOPU1	<---	IOPU	1				0.766
IOPU2	<---	IOPU	0.947	0.044	21.627	***	0.776
IOPU3	<---	IOPU	1.205	0.048	25.164	***	0.878
IOPU4	<---	IOPU	1.075	0.045	24	***	0.846
IOPU5	<---	IOPU	0.999	0.045	22.03	***	0.788
IOPU6	<---	IOPU	1.011	0.043	23.442	***	0.83
IOPU7	<---	IOPU	1.086	0.05	21.556	***	0.774

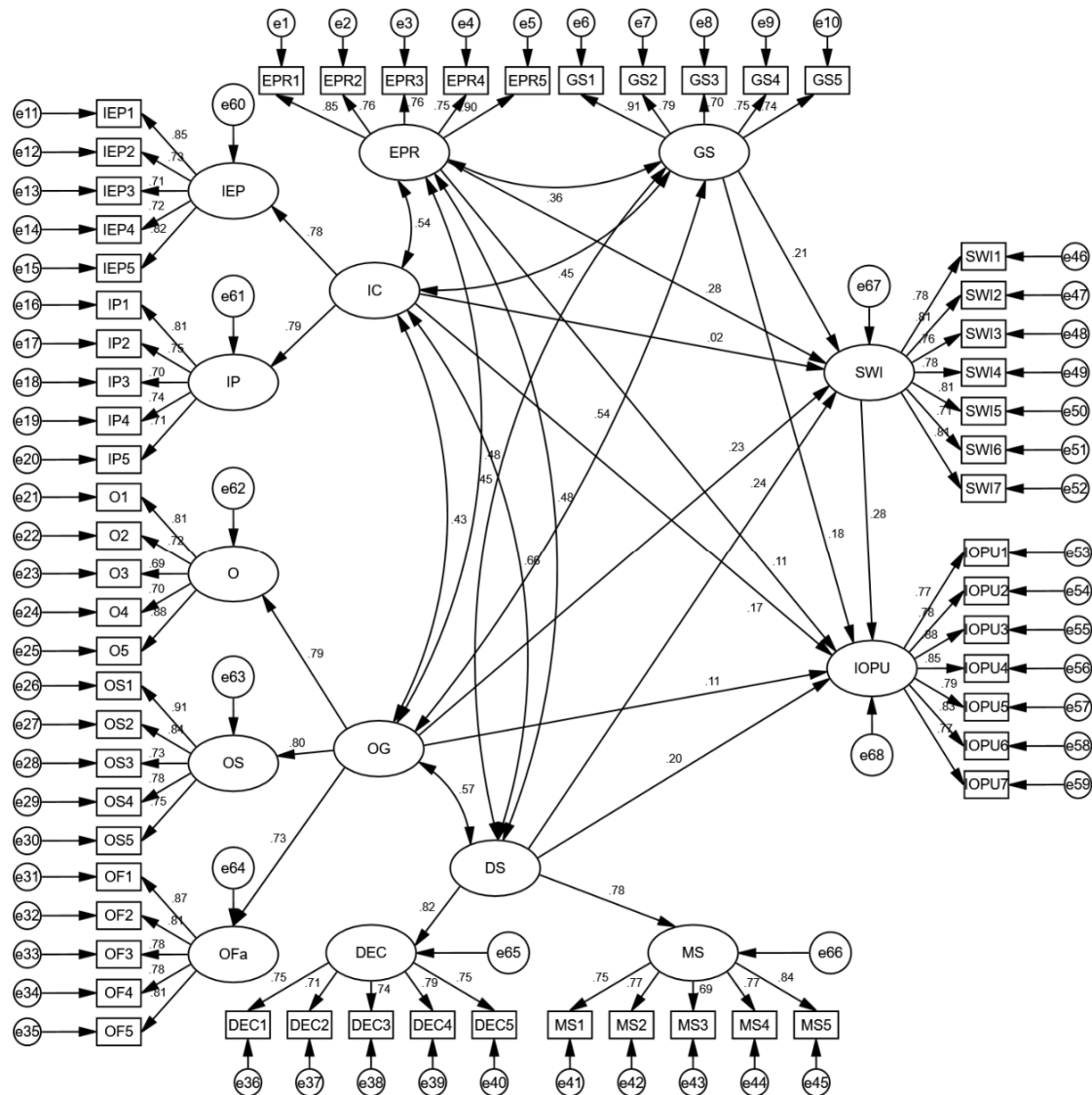


Figure 9. Structural Equation Model Pathways

Table 4. Path Results

Pathway	Estimate	S.E.	C.R.	P	STD Estimate	R2
SWI <--- GS	0.193	0.037	5.256	***	0.21	
SWI <--- EPR	0.279	0.042	6.618	***	0.275	
SWI <--- IC	0.033	0.086	0.384	0.701	0.023	0.587
SWI <--- OG	0.353	0.077	4.593	***	0.234	
SWI <--- DS	0.337	0.089	3.797	***	0.241	
IOPU <--- GS	0.166	0.034	4.868	***	0.176	
IOPU <--- EPR	0.114	0.039	2.919	0.004	0.11	
IOPU <--- IC	0.257	0.079	3.237	0.001	0.173	0.69
IOPU <--- OG	0.168	0.07	2.413	0.016	0.109	
IOPU <--- DS	0.284	0.082	3.458	***	0.199	
IOPU <--- SWI	0.292	0.048	6.13	***	0.285	

From the perspective of the model structure, the path coefficients between the latent variables such as EPR, GS, IC, OG, DS, SWI, and IOPU generally show significant relationships, indicating strong associations between them. For instance, the path coefficient between GS and SWI is 0.193, which indicates a positive relationship, and the p-value is less than 0.001, suggesting a significant effect. Similarly, the path coefficient between EPR and SWI is 0.279, also positive, with a p-value less than 0.05, further confirming the significant impact. However, the relationship between IC and SWI has a lower path coefficient of 0.033 and a p-value of 0.701, indicating that this relationship is not statistically significant. On the other hand, the path coefficients for OG and DS to SWI are 0.353 and 0.337, respectively, both positive with p-values less than 0.05, indicating strong and significant positive effects on student willingness to engage in internationalization. Among these variables, EPR shows the highest standardized path coefficient of 0.275, highlighting its strongest influence on SWI. The R^2 value of 0.587 indicates that the factors GS, EPR, IC, OG, and DS collectively explain 58.7% of the variance in SWI, suggesting a substantial contribution of these factors to students' willingness to engage in internationalization.

Similarly, when considering the path coefficients from GS, EPR, IC, OG, DS, and SWI to IOPU, all the relationships demonstrate positive effects. The path coefficient between GS and IOPU is 0.166, with a p-value less than 0.05, indicating a positive and significant impact. EPR has a path coefficient of 0.114 and a p-value of 0.004, which is also significant. For IC and IOPU, the path coefficient is 0.257 with a p-value of 0.001, further confirming the positive relationship. The relationship between OG and IOPU has a path coefficient of 0.168, and DS has a coefficient of 0.284, both with p-values less than 0.05, indicating significant positive influences. Lastly, SWI shows the strongest impact on IOPU, with a path coefficient of 0.292, and a p-value less than 0.05, signaling a strong positive relationship. The highest standardized path coefficient is from SWI to IOPU, at 0.285, indicating that SWI has the greatest influence on IOPU. The R^2 value of 0.69 reveals that the combined factors GS, EPR, IC, OG, DS, and SWI explain 69% of the variance in IOPU, indicating a significant explanatory power of these factors in the internationalization process of private universities. These results suggest that GS, EPR, IC, OG, DS, and SWI play significant roles in influencing both SWI and IOPU, with SWI being the strongest predictor of IOPU. The model provides a comprehensive understanding of these relationships, offering valuable insights into the factors that drive the internationalization of private universities.

In structural equation modeling (SEM), evaluating the importance and relevance of relationships between variables is a crucial step in ensuring the model's effectiveness and explanatory power. Importance is typically measured through path coefficients, which reflect the strength and direction of causal relationships between variables. The larger the path coefficient, the more significant the variable is in explaining the model. Relevance, on the other hand, is assessed by calculating the correlation coefficients between variables, revealing the strength and direction of the linear relationships between them. Additionally, the P-value (probability value) plays an important role in assessing model parameters and hypothesis testing, indicating the significance of the observed data relative to the null hypothesis. In SEM, when the P-value is less than the chosen significance level (such as 0.05), it is typically considered that the corresponding parameter or hypothesis is statistically significant, thus validating its importance to the model. In summary, structural equation modeling evaluates the importance of variables through path coefficients and correlation coefficients, while using the P-value to test the statistical significance of these evaluations and hypotheses, ensuring the robustness and validity of the model.

Table 5. Hypothesis Testing Results

Research Objective	Hypothesis	Variable	S.E	St.Reg. Weight	C.R	P-value	Finding
RO1	H1	IOPU<---EPR	.039	.114	2.905	.004	Supported
	H2	IOPU<---GS	.034	.166	4.830	***	Supported
RO2	H3	IOPU<---IC	.080	.257	3.216	.001	Supported
	H4	IOPU<---OG	.070	.168	2.410	.016	Supported
	H5	IOPU<---DS	.082	.284	3.467	***	Supported
RO3	H6	SWI<---EPR	.042	.279	6.600	***	Supported
	H7	SWI<---GS	.037	.193	5.240	***	Supported
RO4	H8	SWI<---IC	.087	.033	0.383	.702	Unsupported
	H9	SWI<---OG	.078	.353	4.545	***	Supported
	H10	SWI<---DS	.088	.336	3.816	***	Supported
RO5	H11	IOPU<---SWI	.048	.292	6.116	***	Supported
RO6	H12a	EPR-SWI-IOPU				***	Supported
	H12b	GS-SWI-IOPU				***	Supported
	H12c	IC-SWI-IOPU				.682	Unsupported
	H12d	OG-SWI-IOPU				***	Supported
	H12e	DS-SWI-IOPU				.001	Supported

In the hypothesis testing of the structural equation model, we proposed several hypotheses regarding the relationships between IOPU, SWI, and other variables. For H1 to H5, these hypotheses primarily focused on the direct relationships between IOPU and other variables. The results indicate that EPR, GS, IC, OG, and DS all have a significant positive impact on IOPU, with path coefficients being positive and P-values less than 0.05 (or smaller), strongly supporting these hypotheses. In particular, GS and DS have a notably significant effect on IOPU, with very small P-values and path coefficients, suggesting their strong predictive and explanatory power regarding IOPU. For H6 to H10, these hypotheses explore SWI as a mediating variable in the relationships with other variables. The results show that EPR, GS, OG, and DS all have a significant positive impact on SWI, with positive path coefficients and very small P-values, supporting these hypotheses. However, the impact of IC on SWI was not significant, with a small path coefficient and a P-value far greater than 0.05, leading to the rejection of H8. This suggests that IC may not be an important predictor of SWI, or their relationship may be influenced by other unconsidered variables.

Hypothesis H11 posits that SWI has a significant positive impact on IOPU. The results show a positive path coefficient with a P-value less than 0.001, strongly supporting H11. This indicates that SWI, as a mediating variable in the model, has significant predictive and explanatory power for IOPU. In Hypothesis H12, the relationships between various variables through SWI as a mediator are explored. For H12a, which examines the path $DS \rightarrow SWI \rightarrow IOPU$, the results show a positive path coefficient with a P-value less than 0.001, suggesting that SWI mediates the relationship between DS and IOPU. In H12b, $GS \rightarrow SWI \rightarrow IOPU$ also shows a positive effect with a path coefficient that is positive and a P-value less than 0.001, indicating that SWI mediates the relationship between GS and IOPU. In H12c, $IC \rightarrow SWI \rightarrow IOPU$ shows a positive path coefficient, but the P-value is 0.682, greater than 0.05, meaning that SWI does not significantly mediate the relationship between IC and IOPU. H12d examines $OG \rightarrow SWI \rightarrow IOPU$, and the results reveal a positive path coefficient with a P-value less than 0.001, which is less than 0.05, confirming that SWI significantly mediates the relationship between OG and IOPU. Lastly, H12e explores $DS \rightarrow SWI \rightarrow IOPU$, showing a positive path coefficient with a P-value of 0.001, less than 0.05,

indicating a significant mediating effect of SWI between DS and IOPU. In summary, these results provide valuable insights into the importance and correlations among the variables, contributing to a deeper understanding of the model's structure and predictive capability.

4. Conclusion and Recommendations

Based on the findings, this study suggests several recommendations for school administrators, policymakers, and relevant businesses and non-governmental organizations to enhance the internationalization of private universities in Jiangsu Province.

For school administrators, it is essential to strengthen the internationalization of education by organizing activities and lectures that broaden students' global perspectives, while also encouraging participation in international exchange programs. Establishing dedicated international offices with sufficient staff and international faculty can help ensure the effective design and implementation of programs. Additionally, providing scholarships and funding for faculty and students to engage in international exchange is crucial. Schools should also seek to build partnerships with foreign universities through initiatives such as dual-degree programs and joint research opportunities. Furthermore, introducing international courses and adopting advanced teaching methods will help develop a more globally relevant curriculum, thus improving the overall educational quality.

Policymakers should play a pivotal role in facilitating the internationalization of private universities by optimizing policy support. This can be achieved by creating special funds that encourage student overseas study and introducing policies that focus on enhancing students' international competencies. It is also important to provide financial support to private universities, enabling them to collaborate with foreign institutions and further internationalize their programs. Additionally, policymakers should offer training on internationalization capabilities and resource coordination, supporting universities in their efforts to access international educational resources.

Relevant businesses and NGOs can also contribute significantly to the internationalization process. The government can offer tax incentives and subsidies to encourage businesses and NGOs to participate in university internationalization efforts. By fostering resource-sharing and win-win cooperation models, businesses can contribute funds and internship opportunities, while NGOs can offer platforms for international exchanges. Private universities, in turn, should work to strengthen cultural development, creating an open and inclusive atmosphere that promotes cross-cultural communication and international collaboration.

In conclusion, the internationalization of private universities in Jiangsu Province requires the concerted efforts of school administrators, policymakers, businesses, and non-governmental organizations. Through collective action, universities can enhance their global presence and offer a more internationally relevant education.

5. Funding

This study is supported by the 2022 Jiangsu Provincial Higher Education Philosophy and Social Sciences Research Project (General): "Research on the Development Path of Characteristic Education Internationalization in Private Universities in Jiangsu Province" (Project No. 2022SJYB2266).

References

- [1] Byrne, B. M. (2001). Structural equation modeling with AMOS, EQS, and LISREL: Comparative approaches to testing for the factorial validity of a measuring instrument. *International journal of testing*, 1(1), 55-86.

- [2] De Wit, H., & Altbach, P. G. (2021). Internationalization in higher education: Global trends and recommendations for its future. *Policy Reviews in Higher Education*, 5(1), 28-46.
- [3] He, Z., Li, Y., Yang, T., et al. (2019). Structural differences in the internationalization competence of college students in local universities—A statistical analysis based on survey data from Yangzhou University. *Teaching and Educating (Higher Education Forum)*, (06), 28-29.
- [4] Jöreskog, K. G. (1970). A general method for estimating a linear structural equation system. *ETS Research Bulletin Series*, 1970(2), i-41.
- [5] Kang, J. H., Kim, S. Y., Jang, S., & Koh, A. R. (2018). Can college students' global competence be enhanced in the classroom? The impact of cross-and inter-cultural online projects. *Innovations in Education and Teaching International*, 55(6), 683-693.
- [6] Knight, J. (2020). The internationalization of higher education scrutinized: International program and provider mobility. *Sociologias*, 22(54), 176-199.
- [7] Li, Y., He, Z., Yang, T., et al. (2018). Bilingual teaching, exchange visits, and college students' internationalization competence—An empirical analysis based on survey data from Yangzhou University. *Jiangsu Science and Technology Information*, 35(23), 63-66.
- [8] Meng, Q., Zhu, C., & Cao, C. (2018). Chinese international students' social connectedness, social and academic adaptation: The mediating role of global competence. *Higher Education*, 75(1), 131-147.
- [9] Ortiz-Marcos, I., Breuker, V., Rodríguez-Rivero, R., Kjellgren, B., Dorel, F., Toffolon, M., ... & Eccli, V. (2020). A framework of global competence for engineers: The need for a sustainable world. *Sustainability*, 12(22), 9568.
- [10] Semaan, G., & Yamazaki, K. (2015). The relationship between global competence and language learning motivation: An empirical study in critical language classrooms. *Foreign Language Annals*, 48(3), 511-520.
- [11] Stankovska, G., Dimitrovski, D., Memedi, I., & Ibraimi, Z. (2019). Ethical sensitivity and global competence among university students. *Bulgarian Comparative Education Society*.
- [12] Wu, W. (2020). A study on the internationalization literacy of undergraduates in Zhejiang Province and its influencing factors. Master's thesis, Zhejiang Normal University.
- [13] Xu, D., Jiang, T., & Liu, S. (2019). A study on the relationship between undergraduate students' international experience and global and cross-cultural competence at research universities. *University Education Science*, (05), 48-57+124.
- [14] Yang, R. (2020). Internationalization of Higher Education, China. *The International Encyclopedia of Higher Education Systems and Institutions*, 1901-1904.
- [15] Yang, L., & Wang, P. (2020). The construction of international competence for vocational college students under the 'Double-High' construction background. *Ship Vocational Education*, 8(06), 77-80.
- [16] Zhang, L., & Wen, W. (2018). A study on the influencing factors of international literacy in adolescents—An example from an entrance survey at a research university. *Journal of East China Normal University (Educational Science Edition)*, 36(04), 44-52+162-163.