Constructing a Sustainable Model of International Student Mobility Based on the Relationship of College Student's Concept and Behavioral Intention by SEM

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Abstract

The purpose of this study was to build a sustainable model to detect the relationship of the concept of international student mobility and the behavioral intention in higher education. Data from a total of 1,038 college students were collected in China, and exploratory factor analysis, SEM, logistic regression, t tests, and ANOVA were used for data analysis. The fitness of the items for each scale of the international student mobility survey and behavioral intention survey indicated a sufficient fit and also confirmed the questionnaire's structure by SEM. The logistic regression model show that college students with overseas experience agreed with "Social capital" 1.9642 times more often than those without this experience, and "Global acculturation" is the essential indicator of international student mobility. The findings also reveal that gender, prior achievement, grade, and family economic status are critical factors for international student mobility. This study suggests that the period during the post-COVID-19 pandemic be classified to "Wave IV international student mobility" for sustainable higher education research.

Keywords: Higher education; International student mobility; Post-COVID-19 pandemic; Sustainable development; Structural equation modeling (SEM)

1. Introduction

Education is the main investment of the country in building human capital. For most countries, international student recruitment, scholarships or mobility programs are the main forms of internationalization (British Council, 2022). In OECD countries, international students account for 7% of total enrolment in tertiary programmes in 2020. In OECD partner countries, China and India, who together are responsible for more than 30% of the pool of mobile students, are also net exporters of students (OECD, 2022). Although the supply and demand of international students changed significantly during the COVID-19 pandemic, the basic trend remained increase. Some research are used to explain why international students choose to study abroad such as Human Capital (e.g., Becker, 1962,1993; Paulsen, 2001), Intergroup Contact (e.g., Allport, 2012; Pettigrew et al., 2011), Diffusion Theory (e.g., Rogers, 1995), Expectancy Theory (e.g., Hackney et al., 2012; Vroom, 1982), and Student Choice (e.g., Kumar & Kumar, 2013; Perna, 2006). Previous studies have shown that studying abroad can provide students with a variety of advantages, including access to high-quality education, access to skills that may not be taught in their home country, closer to the requirements of the labor market and improving their cross-cultural sensitivity (Garcia Aracil et al., 2004; King & Sondhi, 2018; Partlo & Ampaw, 2018; Rexeisen, 2008). As a result, the policy of encouraging students to study abroad has been an important educational measure in most countries.

In the global higher education settings, China has been providing a large number of outbound students in the past decades. Generally, China has suffered negative net flow mobility and this trend will continue into the next few decades (Xia & Chang, 2021). While the ongoing COVID-19 pandemic has stopped or derailed international travel in much of 2020-2021, the term "international student mobility" has once again aroused concerns in these challenging times. Researchers assume that challenge as moving 'Wave IV international student mobility.' Based on the concept of international student mobility, this study proposed a theoretical framework for measuring the international student mobility and the behavioral intention to validate the relationship of these constructs.

2. Literature Review

2.1. Development of international student mobility in higher education

Choudaha proposed that there were three waves of international student mobility spread over seven years between 1999 and 2020. Wave I was shaped by the terrorist attacks of 2001 and enrolment of international students at institutions seeking to build research excellence. Wave II was shaped by the global financial recession which triggered financial motivations for recruiting international students. Wave III was shaped by the new political order and intensified competition from English-taught programs in Europe and Asia which slowed down the pace of projected growth in international enrollment to 18% between 2013 and 2020, as shown in Figure 1.

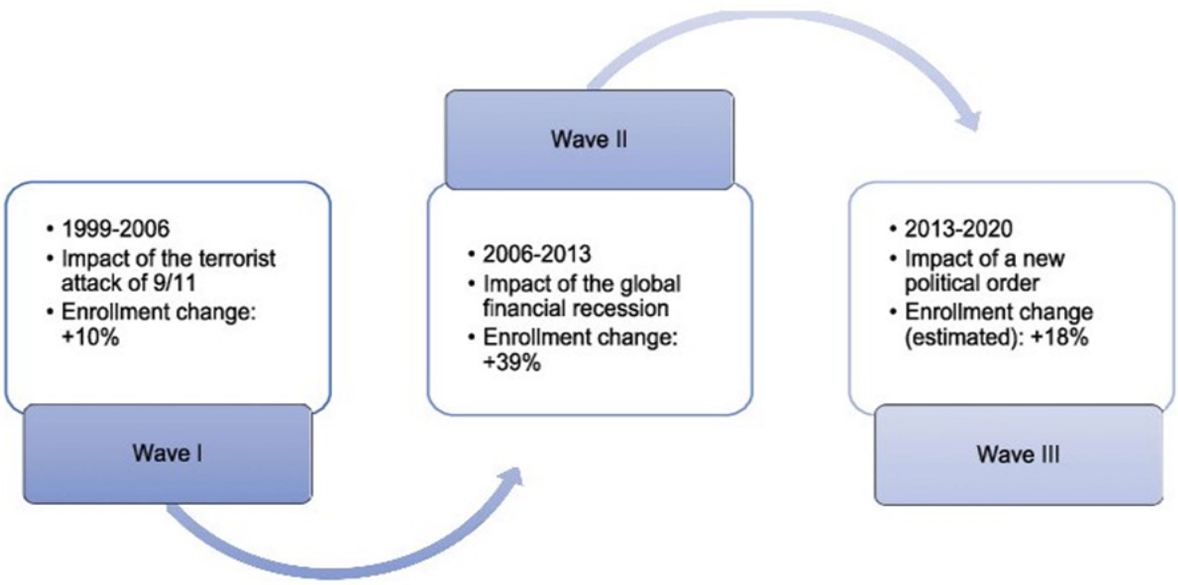


Figure 1. Three waves of international student mobility (1999-2000)
Source: (Choudaha, 2017)

According to the Blue Book of Global Talent, the Annual Report on the Development of Chinese Students Studying Abroad (2020-2021) announced 11 trends of Chinese students studying abroad (Wang & Miao, 2021). From the report, it can be seen that studying abroad is still an important channel for China to train high-level talents. These 11 trends also showed that the choice of international students will be increasingly diverse in the future.

2.2. Related concept of international student mobility

The term "studennt mobility" refers to a border-crossing program of study for temporary purposes (Teichler, 2015). Although international student mobility is emerging as a subject in research on highly skilled migration, few studies attempt to reveal distinct national strategies for managing student mobility. This study begins by reviewing relevant literature on international student mobility to examine the concept of international student mobility, including global citizenship, global acculturation, global service-learning, and social capital, etc. Some introduction of the concept of international student mobility is described as follows.

2.2.1. Global citizenship

Global citizenship refers to the global awareness of the social, political, environmental and economic actions of individuals in the world. It has been proposed that individuals are members of multiple, diverse, local and non-local networks, rather than single persons affecting isolated societies. Promoting global citizenship in

sustainable development will enable individuals to assume social responsibility and work for the benefit of all societies, not just their own (United Nations, 2021).

Global citizenship education (GCED) is UNESCO's response to the challenges of violations of human rights, inequality and poverty. It empowers learners of all ages to understand that these are global issues, not local issues, and to become active promoters of a more peaceful, tolerant, inclusive, safe and sustainable society (UNESCO, 2021a). GCED is based on three domains of learning: cognitive, social emotional, and behavioral (UNESCO, 2021b): cognitive domain refers to knowledge and thinking skills necessary to better understand the world and its complexities; socio-emotional domain refers to values, attitudes, and social skills that enable learners to develop affectively, psychosocially, and physically and to live together with others respectfully and peacefully; behavioral domain refers to conduct, performance, practical application, and engagement. The awareness of Global citizenship in education will arouse more attention and responsibility of the diversity of the world.

2.2.2. Global acculturation

Acculturation is a process of cultural and psychological changes that occurs after contacts between cultural groups and their individual members (Berry, 2004). Acculturation can be considered from the degree of seeking relationship between members of different cultural groups. In the process of acculturation, some can be changed in a rather superficial way, such as dressing, speaking or eating in a specific way. Others can be more deeply-rooted change in values, beliefs and worldviews (Lansford, 2011). High levels of acculturation are associated with high levels of competence in understanding and using majority culture beliefs and practices, and engaging successfully in majority cultural functions (Arthur, 2013). The concept of global acculturation affects students' self-identification and their ability to find a balance between their native culture and the culture of their destination.

2.2.3. Global service-learning

Service-learning rooted in the educational philosophies of John Dewey's writings on the nature of understanding and the benefits of participation is an experiential approach to learning based on the principle of reciprocal learning (Giles & Eyler, 1994; Sigmon, 1979). Service learning combine learning goals and community service with the motivation of achieving educational outcomes for students as well as benefits for communities through exchange programs, field volunteer opportunities or short-term visit oversees (Bamber, 2017; Crabtree, 2008; Gardinier, 2017; Sigmon, 1994). As Bamber and Hankin (2011) indicated, student engagement through service-learning with local communities has a clear transformative potential for students, challenging their own stereotypes and personal values. Global service-learning therefore develops an opportunity for both study and work abroad in higher education.

2.2.4. Social capital

It is believed that the soft skills, such as networks, language skills and intercultural communication skills, are equally important for future employers. Indeed, when the social capital enter the employment market, they are also considered to play a key role in obtaining jobs (King 2011). In international student mobility, making friends (doing friendship) could promote learning, and could especially enhance the effectiveness of adaptation to a new environment. This is responded to through social support or social resources, where interpersonal power (social) may be a key factor for socialization (Oshio, 2017). Larsen (2016) defined social capital in college as including admission permits, economic support, interpersonal relationships, and transportation, which is also called network capital. In one's career, social capital is a kind of social skill, or an international connection skill.

3. Methodology

3.1. Participants

This study conducted a self-designed questionnaire by random sampling, and data were collected using an online questionnaire system. A total of 1,038 valid samples were collected from college students (195 males (18.8%) and 843 females (81.2%); 278 (26.8%) 1st grade, 402 (38.7%) 2nd grade, 321 (30.9%) 3rd grade, and 37 (3.6%) 4th grade), who were located in an area representing the average economic level in China. The target population included college students recruited from public colleges. Due to the use of anonymous questionnaires, ethical approval clearance and informed consent clearance were granted.

3.2. Measures of the Constructs

A survey consisting of two domains, the concept of international student mobility and the behavioral intention, was adopted to measure the relationship of the concept and the behavioral intention as shown in Figure 2. Within this framework, we assumed that the concept of international student mobility and the behavioral intention would determine their mobile decisions. The six indicators selected consisted of 30 items: the independent variable, the concept of international student mobility, was explained by Global citizenship (GC, 6 items), Global acculturation (GA, 5 items), Global service-learning (GS, 5 items), and Social capital (SC, 4 items). The dependent variable, the behavioral intention, included Motivation (MOT, 5 items) and Action (ACT, 5 items). All of the items in the questionnaire were presented using a 7-point Likert scale, ranging from 1 - strongly disagree to 7 - strongly agree. The details of the six indicators are listed in Table 1.

Table 1. Measures of the constructs

Domains\ indicators	Definitions
Concept of international student mobility	
Global citizenship (GC)	Macro thinking with global citizenship and caring for the world
Global acculturation (GA)	Understanding of international issues, cultural diversity and inclusiveness
Global service-learning (GS)	Participation in global service-learning
Social capital (SC)	Adapting to different environments, and good social skills with foreigners
Behavioral intention	
Motivation (MOT)	An international interest in caring and working intention
Action (ACT)	Action of international caring and working intention

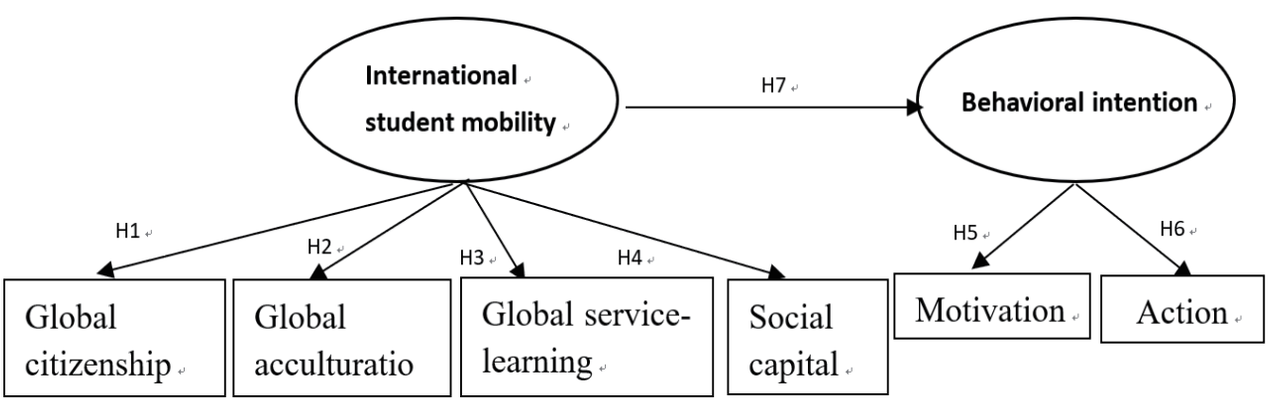


Figure 2. Theoretical framework for measuring the international student mobility and the behavioral intention

3.3. Hypotheses Development

This study developed seven hypotheses regarding the concept of international student mobility and the behavioral intention. The hypotheses are listed below:

H1. Global citizenship significantly affects international student mobility.

H2. Global acculturation significantly affects international student mobility.

H3. Global service-learning significantly affects international student mobility.

H4. Social capital significantly affects international student mobility.

H5. Motivation significantly affects the behavioral intention.

H6. Action significantly affects the behavioral intention.

H7. The international student mobility significantly affects the behavioral intention.

3.4. Data analysis

Exploratory factor analysis and confirmatory factor analysis were utilized to identify the structures of the two surveys with the statistical software of SPSS and AMOS. Structural Equation Modeling (SEM) was implemented to determine the relationship of the concept of international student mobility. The overall model fit was assessed using common goodness-of-fit indices.

Logistic regression is the appropriate regression analysis to conduct when the dependent variable is dichotomous (binary). Logistic regression was conducted by using the Minitab statistical package. Whether students with or without overseas experience linked to future mobile concept and behavioral intention was examined. A logit is a log of odds, and odds are a function of P, logit(P) = a+ß1X1+…+ ßnXn. The odds ratio (OR) was calculated to reflect the impact of students' responses. It was calculated according to the following formula (Aljandali, 2017; Chandrayan, 2020):

$$Odds = e^{\beta_0+\beta_1\chi_1+\cdots+\beta_n\chi_n} \rightarrow \log(Odds) = \beta_0 + \beta_1\chi_1 + \cdots + \beta_n\chi_n$$

$$Odds = \frac{P(y=1)}{P(y=0)}$$

$$\frac{\text{The Odds will be>1 when there is a higher probability of predicting } y=1}{\text{The Odds will be<1 when there is a higher probability of predicting } y=0}$$

Finally, the stepwise method used in logistic regression models was employed. Adding independent variables to a logistic regression model will typically increase the amount of variance explained in the log odds. The variance is expressed as R^2.

4. Results

4.1. Exploratory factor analysis of the concept of international student mobility and the behavioral intention

Exploratory factor analysis (EFA) with principal component analysis was performed to clarify the structure. Hair et al. (2006) suggested that item's factor loading greater than 0.50 is remarkable. The factor loadings of item GC_1 (0.201), GC_6 (0.082), GS_5 (-0.027), SC_1 (0.181), and SC_2 (0.325) were less than 0.50, so these five items were omitted. The other items in the measure ranged from 0.679 to 0.919, meeting the threshold (0.50), and demonstrating convergent validity at the item level. The Cronbach's alpha coefficients for the factors were 0.76, 0.86, 0.80, and 0.82, with 59.06%, 64.81%, 62.92%, and 84.48% of variance explained, respectively. The overall alpha was .70, and the total variance explained was 57.31%. The KMO value was 0.709, and the Bartlett χ2-value was 1065.373 ($p<0.000$), as shown in Table 2, suggesting that these factors had highly acceptable reliability for

assessing the concept of international student mobility.

Table 2. Rotated factor loadings, Cronbach's alpha values, item means, and standard deviations for the four factors of international student mobility

Items	Factor 1	Factor 2	Factor 3	Factor 4
Factor 1: Global citizenship (GC), α = .76, mean = 5.37, *SD* = 0.83				
GC_2	0.679			
GC_3	0.757			
GC_4	0.848			
GC_5	0.780			
Factor 2: Global acculturation (GA), α = .86, mean = 4.88, *SD* = 1.03				
GA_1		0.776		
GA_2		0.841		
GA_3		0.756		
GA_4		0.816		
GA_5		0.833		
Factor 3: Global service-learning (GS), α = .80, mean = 5.34, *SD* = 0.91				
GS_1			0.737	
GS_2			0.830	
GS_3			0.810	
GS_4			0.793	
Factor 4: Social capital (SC), α = .82, mean = 3.58, *SD* =1.54				
SC_3				0.919
SC_4				0.919
% of variance	59.06%	64.81%	62.92%	84.48%

Notes: loading less than 0.50 omitted, N = 1038, overall α = .70, total variance explained is 57.31%.

According to the EFA results of the behavioral intention, the participants' responses were grouped into two factors: Motivation (MOT) and Action (ACT). According to Hair's suggestion (Hair et al., 2006), the factor loadings of all the items in the measure ranged from 0.637 to 0.871, meeting the threshold (0.50), and demonstrating convergent validity at the item level as well. The Cronbach's alpha coefficients for the factors were 0.83 and 0.84, with 60.64% and 61.11% of variance explained, respectively. The overall alpha was 0.47, and the total variance explained was 65.83%. The KMO value was 0.500, and the Bartlett $\chi 2$-value was 109.348 ($p<0.000$), as shown in Table 3, suggesting that these factors had highly acceptable reliability for assessing the behavioral intention.

Table 3. Rotated factor loadings, Cronbach's alpha values, item means, and standard deviations for the two factors of the behavioral intention

Items	Factor 1	Factor 2
Factor 1: Motivation (MOT), α = .83, mean = 5.37, *SD* = 0.83		
MOT _1	0.818	
MOT _2	0.871	
MOT _3	0.751	

MOT _4	0.797	
MOT _5	0.637	
Factor 2: Action (ACT), α = .84, mean = 5.37, *SD* = 0.83		
ACT _1		0.759
ACT _2		0.825
ACT _3		0.797
ACT _4		0.817
ACT _5		0.704
% of variance	60.64%	61.11%

Notes: loading less than 0.50 omitted, N = 1038, overall α = .47, total variance explained is 65.83%.

4.2. SEM Results

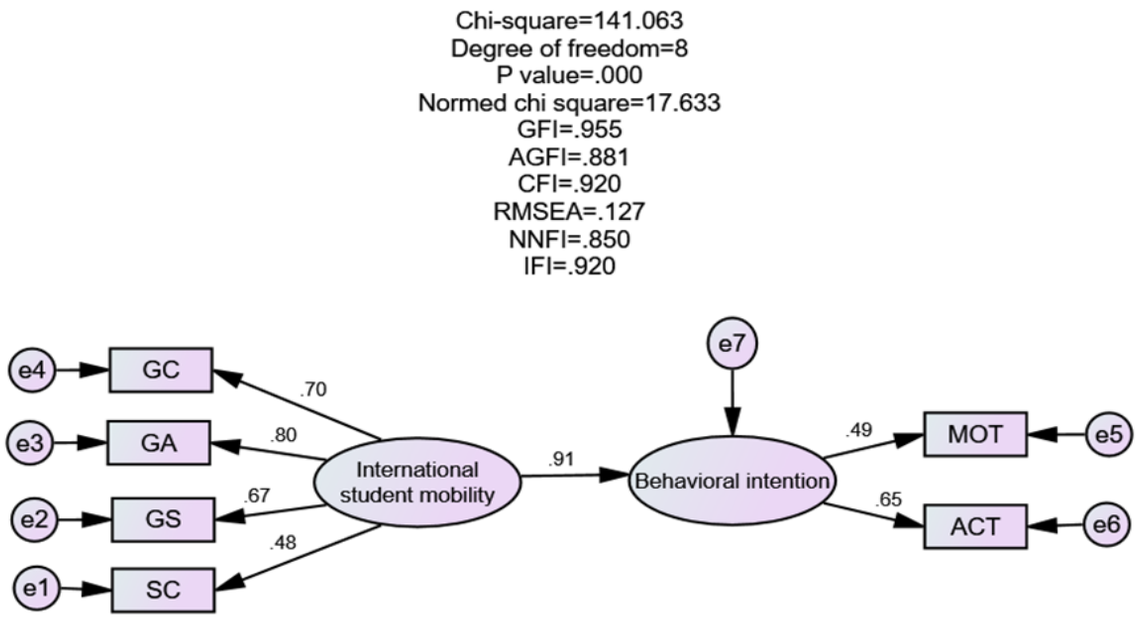
Table 4 shows that the recommended values for the common model fit, the suggested saturated and independence models. Most of the model-fit indices exceeded their respective common acceptance levels suggested by Loehlin (2004) and Schumacker and Lomax (2004), thus demonstrating that the default measurement model exhibited a good fit with the data collected ($\chi 2$ (8) = 141.063, GIF = 0.955, AGFI = 0.881, CFI = 0.920, RMSEA = 0.127, NNFI = 0.850, IFI = 0.920), as shown in Table 3. This model indicated a sufficient fit and also confirmed the questionnaire's structure (Smiley & Anderson, 2011; Wang, 2017).

The paths from international student mobility to the behavioral intention showed a significant difference. As expected, the results supported H1, H2, H3, and H4. The result revealed that Global acculturation (GA) was the most important factor (r2 = 0.796), with 79.6% of variance explained, then Global citizenship (GC) (r2 = 0.704), with 70.4% of variance explained, then Global service-learning (GS) (r2 = 0.669), with 66.9% of variance explained in the model, and then Social capital (SC) (r2 = 0.477), with 47.7% of variance explained in the model. In the meantime, as expected, the results supported H5 and H6. The result revealed that Action (ACT) was the more important factor (r2 = 0.650), with 65.0% of variance explained, and then Motivation (MOT) (r2 = 0.487), with 48.7% of variance explained in the model.

There was also a significant path from international student mobility to the behavioral intention. According to the standardized regression coefficient (r2 = 0.908), and the Criteria Ratio (C.R.) = 10.435 > 3.00, $p < 0.001$, 90.8% of variance was explained, which meant that the correlation between the international student mobility and the behavioral intention was fairly high. As expected, the results supported H7. It was confirmed that the standardized coefficients showed high validity and reliability by SEM. The concept of international student mobility had a significantly direct effect on the behavioral intention in the model, as shown in Figure 3.

Table 4. Fit indices for the default, saturated, and independence models.

Fit indices	Recommended	Default_m	Saturated_m	Independence_m
		Model fit summary		
$\chi 2$/df	≤ 3.00	17.633	-	111.634
GIF	≥ 0.80	0.955	1.000	0.564
AGFI	≥ 0.80	0.881	-	0.389
CFI	≥ 0.90	0.920	1.000	0.000
RMSEA	≤ 0.1	0.127	-	0.327
NNFI	≥ 0.90	0.850	-	0.000
IFI	≥ 0.90	0.920	1.000	0.000
AIC (relative)	smaller	167.063	42.000	1686.506



Note: The figure shows standardized path coefficients; $p < 0.05$.

Figure 3. Paths of the international student mobility to the behavioral intention

4.3. Results of Logistic Regression

The results of logistic regression revealed that "overseas experience" was significantly related to "Social capital." The deviance test displayed the results of a Chi-square test used to indicate whether each of the individual terms in the regression was statistically significant after adjustment. The result revealed the adjusted R2 = 0.0113, and the AIC = 439.64 with (df = 1036, $\chi 2$ = 435.63, p = 0.017). The results of logistic regression showed Y' = 0.675, Coefficient = 0.675, SE Coef =0.280, VIF = 1.00, Odds ratio = 1.9642, and 95% CI = (1.1356, 3.3973). The calculated odds ratio for the concept of international student mobility among college students with overseas experience was p (1) = exp(Y')/(1 + exp(Y')). This result demonstrated that college students with overseas experience agreed with "Social capital" 1.9642 times more often than those without this experience.

4.4. t-test analysis of the concept of international student mobility and the behavioral intention by gender

To detect the difference in the concept of international student mobility and the behavioral intention by gender, the independent t test was adopted. The t-test result of these two groups showed that a significant difference was found between male and female students with t = 2.358 (p = 0.000<0.001) in SC, showing that the male students (M = 4.04, SD = 1.643) had better "Social capital" than the female students (M = 3.47, SD = 1.501). In addition, there was a significant difference between male and female students with t = -2.322 (p = 0.020<0.05) in MOT, showing that the female students (M = 5.47, SD = 0.901) had more motivation than the male students (M = 5.29, SD = 1.048) of developing greater behavioral intention. A summary is shown in Table 5.

Table 5. Summary of an independent t test on the concept of international student mobility and the behavioral intention by gender

scale	gender	Mean	*S.D.*	*t*-value	*p*-value
Concept of international student mobility					
GC	male	5.37	1.010	0.045	0.964
	female	5.37	0.782		

GA	male	4.94	1.119	0.977	0.329
	female	4.86	1.006		
GS	male	5.26	1.105	-1.233	0.218
	female	5.35	0.862		
SC	male	4.04	1.643	4.647***	0.000
	female	3.47	1.501		
Behavioral intention					
MOT	male	5.29	1.048	-2.322*	0.020
	female	5.47	0.901		
ACT	male	4.35	1.294	0.497	0.619
	female	4.31	1.173		

*$p < 0.05$, ***$p < 0.001$

Note: "male" $n = 195$ and "female" $n = 843$.

4.5. T-test analysis of the concept of international student mobility and the behavioral intention by prior achievement

To detect the difference in the concept of international student mobility and the behavioral intention by students' prior achievement, the independent t test was adopted. The t-test result of these two groups showed that a significant difference was found between the high- and low-achievement groups with t = 3.928 (p = 0.000 < 0.001) in GC, and t = 2.831 (p = 0.005 < 0.01) in GS, showing that the students with high achievement had better "Global citizenship" (M = 5.49, SD = 0.781) and "Global service-learning" (M = 5.43, SD = 0.925) than those with low achievement (M = 5.29, SD = 0.851; M = 5.27, SD = 0.898).

Further, the t-test result of these two groups showed that a significant difference was found between the high- and low-achievement groups with t = 4.918 (p = 0.000 < 0.001) in ACT, showing that the students with high achievement (M = 4.54, SD = 1.137) had better global action than those with low achievement (M = 4.17, SD = 1.213). A summary is shown in Table 6.

Table 6. Summary of an independent t test on the concept of international student mobility and the behavioral intention by students' achievement

scale	achievement	Mean	*S.D.*	*t*-value	*p*-value
Concept of international student mobility					
GC	high	5.49	0.781	3.928***	0.000
	low	5.29	0.851		
GA	high	4.95	1.065	1.855	0.064
	low	4.83	1.000		
GS	high	5.43	0.925	2.831**	0.005
	low	5.27	0.898		
SC	high	3.61	1.567	0.550	0.583
	low	3.56	1.528		
Behavioral intention					
MOT	high	5.50	0.944	1.895	0.058
	low	5.39	0.922		
ACT	high	4.54	1.137	4.918***	0.000
	low	4.17	1.213		

**$p < 0.01$, ***$p < 0.001$

Note: "high achievement" $n = 414$ and "low achievement" $n = 624$.

4.6. ANOVA analysis of the concept of international student mobility and the behavioral intention by grade

An ANOVA test was conducted to explore the difference of concept of international student mobility and the behavioral intention by grade. The grades were classified into four groups for comparison, namely "1st grade," "2nd grade," "3rd grade," and "4th grade." The result revealed that there was a significant difference in GA (F-value = 3.868, p = 0.009 < 0.01). Post hoc comparisons using the Scheffé test indicated that the mean score for the 1st grade group (M = 5.05, SD = 1.074) was significantly different from that of the 3rd grade group (M = 4.78, SD = 1.042). The results showed that 3rd grade students had more "Global acculturation" than 1st grade students of developing a greater concept of international student mobility.

Moreover, there was a significant difference in MOT (F-value = 5.608, p = 0.001 < 0.01). Post hoc comparisons using the Scheffé test indicated that the mean score for the 1st grade group (M = 5.56, SD = 0.966) was significantly different from that of the 2nd grade group (M = 5.47, SD = 0.897) and of the 3rd grade group (M = 5.27, SD = 0.946). The results showed that 1st grade students had more motivation than 2nd grade students, and the 2nd grade students had more motivation than 3rd grade students of developing greater behavioral intention. A summary is shown in Table 7.

Table 7. Summary of ANOVA of the concept of international student mobility and the behavioral intention by grade

scale	grade	mean	S.D.	F-value	p-value	Post Hoc test: Scheffé
Concept of international student mobility						
GC	1st grade	5.43	0.896	1.227	0.299	
	2nd grade	5.32	0.827			
	3rd grade	5.37	0.776			
	4th grade	5.47	0.783			
GA	1st grade	5.05	1.074	3.868**	0.009	1st grade > 3rd grade
	2nd grade	4.85	0.977			
	3rd grade	4.78	1.042			
	4th grade	4.76	0.971			
GS	1st grade	5.44	0.982	2.101	0.098	
	2nd grade	5.29	0.905			
	3rd grade	5.29	0.873			
	4th grade	5.48	0.720			
SC	1st grade	3.73	1.592	3.277*	0.020	
	2nd grade	3.65	1.540			
	3rd grade	3.38	1.517			
	4th grade	3.34	1.270			
Behavioral intention						
MOT	1st grade	5.56	0.966	5.608**	0.001	1st grade > 2nd grade > 3rd grade
	2nd grade	5.47	0.897			
	3rd grade	5.27	0.946			
	4th grade	5.51	0.731			
ACT	1st grade	4.45	1.287	1.607	0.186	
	2nd grade	4.27	1.175			
	3rd grade	4.27	1.156			
	4th grade	4.22	1.034			

*p < 0.05, **p < 0.01

Note: "1st grade" n = 278, "2nd grade" n = 402, "3rd grade" n = 321 and "4th grade" n = 37.

4.7. ANOVA analysis of the concept of international student mobility and the behavioral intention by family economic status

An ANOVA test was conducted to explore the difference in the concept of international student mobility and the behavioral intention by family economic status. Family economic status was classified into five groups for comparison, namely "low," "medium-low," "medium," "medium-high," and "high" levels of family income. The result revealed that there was a significant difference in GC (F-value = 5.244, p = 0.000 < 0.001). Post hoc comparisons using the Scheffé test indicated that the mean score for the medium-high group (M = 5.57, SD = 0.813) was significantly different from that of the medium group (M = 5.35, SD = 0.812) and of the medium-low group (M = 5.27, SD = 0.752). The results showed that students with a medium-high family economic status had better "Global citizenship" than those with medium family economic status, and the students with medium family economic status had better "Global citizenship" than those with medium-low family economic status. In addition, there was a significant difference in SC (F-value = 5.592, p = 0.000 < 0.001). Post hoc comparisons using the Scheffé test indicated that the mean score for the medium group (M = 3.51, SD = 1.471) was significantly different from that of the medium-low group (M = 3.38, SD = 1.505) and of the low group (M = 4.37, SD = 1.825). The results showed that students with low family economic status had better "Social capital" than those with medium family economic status, and the students with medium family economic status had better "Social capital" than those with medium-low family economic status. A summary is shown in Table 8.

Table 8. Summary of ANOVA of the concept of international student mobility and the behavioral intention by family economic status

scale	level	mean	*S.D.*	F-value	*p*-value	Post Hoc test: Scheffé
Concept of international student mobility						
GC	low	5.23	1.115	5.244***	0.000	
	medium-low	5.27	0.752			medium-high > medium > medium-low
	medium	5.35	0.812			
	medium-high	5.57	0.813			
	high	6.44	0.657			
GA	low	5.02	1.350	2.675*	0.031	
	medium-low	4.73	0.945			
	medium	4.86	1.002			
	medium-high	4.97	1.053			
	high	6.05	1.170			
GS	low	5.36	1.082	1.625	0.166	
	medium-low	5.23	0.862			
	medium	5.32	0.878			
	medium-high	5.46	1.007			
	high	5.81	1.463			
SC	low	4.37	1.825	5.952***	0.000	low > medium > medium-low
	medium-low	3.38	1.505			
	medium	3.51	1.471			
	medium-high	3.73	1.645			
	high	5.00	2.449			
Behavioral intention						
MOT	low	5.50	1.225	1.133	0.339	
	medium-low	5.44	0.890			
	medium	5.41	0.899			
	medium-high	5.50	0.958			
	high	4.60	1.911			
ACT	low	4.42	1.529	3.593**	0.006	

medium-low	4.15	1.078
medium	4.28	1.178
medium-high	4.53	1.200
high	5.65	1.399

*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$

Note: “low” $n = 56$, “medium-low” $n = 144$, “medium” $n = 670$, “medium-high” $n = 164$ and “high” $n = 4$.

5. Discussion and Conclusions

5.1. Educational implications

This study proposed a research framework to measure the relationship of college students’ concept and behavioral intention based on an evidence-based methodology. The results explored deeper understandings for college students’ perspectives to international student mobility.

First, it was confirmed that the standardized coefficients showed high validity and reliability by SEM in this study. The fitness of the items for each scale indicated a sufficient fit and also confirmed the questionnaire’s structure. The SEM analysis showed that the concept of international student mobility had a significantly direct effect on the behavioral intention in the model. The SEM results provided a valuable reference that international student mobility is critical to determining how college students perceive globalization based on their perspectives.

Secondly, the logistic regression result demonstrated that college students with overseas experience agreed with “Social capital” 1.9642 times more often than those without this experience. The finding implies that increasing the opportunity of students’ inbound and outbound learning can illuminate the prediction with respect to student mobility issues.

Thirdly, the independent-sample t test by gender showed that the male students had better “Social capital” than the female students. However, the female students had more motivation than the male students to develop greater behavioral intention. Also, the independent-sample t test on prior achievement showed that the students with high achievement had better “Global citizenship” and “Global service-learning” than those with low achievement of developing the concept of international student mobility. That is to say, the students with high achievement had better global action than those with low achievement.

Finally, based on the ANOVA results, 3rd grade students had more "Global acculturation” than 1st grade students. However, 1st grade students had more motivation than 2nd grade students, and the 2nd grade students had more motivation than 3rd grade students to develop greater behavioral intention. In addition, students with medium-high family economic status had better “Global citizenship” than those with medium family economic status, and the students with medium family economic status had better “Global citizenship” than those with medium-low family economic status. Besides, students with low family economic status had better “Social capital” than those with medium family economic status, and the students with medium family economic status had better “Social capital” than those with medium-low family economic status. Similarly, the impact factors of college student’s grade and family economic status were significantly proved.

As Xia and Chang (2021) concluded that the changing trend of Chinese outbound student mobility conveys more and more students pursuing overseas study progressively, it seems that the wave IV international student mobility has been developing in China. Also, the concept of international student mobility should be applied to the programs of globalization or the policy for encouraging study abroad in higher education to help students immerse themselves into overseas learning environments in advance.

5.2. Implications for research and practice

The blockade of COVID-19 has seriously affected the education system around the world, especially the exchange of international students. Whether the competitiveness of human resources has been affected is worth further study. Besides, there has been a state of cross-border mobility of competition and cooperation among countries, as the movement of talent has promoted the growth of knowledge in importing countries and has created economic benefits, as well as the technological accumulation and international influence of countries of exporting talent. As Choudaha (2018) stated that the demand for studying abroad among students remains robust, increasing competition and expectations of value will require proactive and concerted efforts to maintain the global competitiveness of higher education. There is an emerging trend of higher education institutes setting up a target framework for students' international student mobility development in the future.

5.3. Limitations and suggestions for future research

First, the sample of this study is only selected from a special group of college students in China, so we must carefully consider extending the results to other population. Second, this study was an exploratory study on how the concept of international student mobility affects students' behavioral intentions. Further controlled experiments on these causal relationships are encouraged. In addition, although the methods of measuring students' concept through questionnaires have several advantages, they also have limitations, including the difficulty to explain without additional contextual information. Future research should consider more indicators to establish a more comprehensive model to explain the relationship among different types of international students. In conclusion, international student mobility is an important issue and it is imperative to address the recruitment and retention strategies to international students for sustainable development of higher education.

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