

---

## Pull factors influencing enrollment of Mainland Chinese students in Taiwanese universities: An empirical analysis

---

Joseph Meng-Chun Chin  
*National Chengchi University, Taiwan*  
Hsin-Chih Lin  
*National Academy for Educational Research, Taiwan*  
Wei-Cheng Chien  
*National Academy for Educational Research, Taiwan*  
Cheng-Joo Eng  
*Min-Hwei Junior College of Health Care Management, Taiwan*

### Abstract

A rapidly declining birthrate in Taiwan has placed pressure on universities to bolster waning enrollment. At the same time, Mainland China is becoming an enormous exporter of international students, and the close geographic proximity between Taiwan and China has resulted in many Chinese students enrolling in Taiwanese institutions. Between 2012 and 2013, over 75% of Chinese exchange students studied in the United States, Great Britain, Australia, or Canada. In contrast, Taiwan was unable to attract a meaningful number of these students. Thus, the issue of whether institutions in Taiwan appeal to Mainland Chinese students is worthy of exploration. This study recruited 228 Chinese students that studied at universities in 2012 in order to identify factors that influenced the enrollment of students from Mainland China in Taiwan. Survey results led us to four important findings as follows: 1) sociocultural and school-related factors had the biggest influence on the decision to study in Taiwan; 2) college selection did not influence pull factors, learning satisfaction, or the intention to pursue further education; 3) school-related and personal factors influenced learning satisfaction as well as the intention to pursue further education; and 4) learning satisfaction has a direct and mediating influence on the intention to pursue further education. These findings yield recommendations that can serve as a reference for Taiwanese universities.

Keywords : Mainland Chinese students, pull factors, learning satisfaction, intention to pursue further education, Taiwanese universities



KEDI Journal of Educational Policy - ISSN 1739-4341 -

© Korean Educational Development Institute 2018, Electronic version: <http://eng.kedi.re.kr>

## Introduction

### Research background

Institutions of higher education are taking actions to globalize and increase the international exchange of students (Rizvi & Lingard, 2000). In Taiwan, however, higher education faces unprecedented difficulties. Although in 2012 college admission rates reached 94.4%, the highest rates in three years, 46 departments in 17 universities were unable to fill all admission vacancies (a shortfall of 217 nationally). This was nearly triple the shortfall of the previous year (59 vacancies). Birthrates in Taiwan have been showing a gradual decline, such that in 2012 the schooling population aged 6-21 years old accounted for only 19.2% of the total population. In the next 20 years, this population cohort is expected to decline to 13.3%, and a total enrollment deficit is projected at 233,000 students with enrollment declines in universities accounting for 117,000 of these students (Council for Economic Planning and Development, 2012). According to the statistics announced at the end of 2017, more than 17 universities and colleges' admission rates are below 60% (Ministry of Education, 2017).

Rising tuition and falling birthrates are likely to continue reducing enrollment at a number of colleges and universities prompting many institutions to consider opening their doors to Mainland Chinese students. The Taiwanese government expects the enrollment of Mainland Chinese students will improve the situation of reduced enrollment rates that could result in the closure of institutions (Chou & Yang, 2012; Tai, Mok, & Xie, 2002).

The deregulation of educational policy toward academic exchanges with Mainland China started from November 1987; all outstanding professionals of Mainland China were permitted to visit Taiwan since 1987. In 1993, Chinese professionals and students were allowed to visit Taiwan for cultural and educational exchanges. Even then, the number of individuals involved in cross strait exchange programs exceeded several tens of thousands (Chou & Yang, 2012).

Taiwan and Mainland China are geographic neighbors with similar culture in terms of lifestyle and language. Thus, the exchange of students between these two areas not only can foster cross-strait relations, but also bring positive influence to both the government and academia (Y.-H. Chiang, 2010). On August 19<sup>th</sup>, 2010, the Legislative Yuan passed three acts that enabled Mainland Chinese students to study in Taiwan. Briefly, on September 8<sup>th</sup>, 2010, the Ministry of Education announced the drafting of guidelines for students from Mainland China to live and study in Taiwan. Universities were then expected to submit a recruitment plan for review by the Ministry of Education by the end of that year (Z.-H. Wang, 2013). Following this, the Taiwan's Executive Yuan enacted the *Action Plan for Recruiting Overseas Students* (to run from 2011 to 2014), *Guidelines for Mainland Chinese Students Studying in Taiwan Colleges*, and established the University Entrance Committee for Mainland Chinese Students (W.-T. Huang, 2013). Thus, the recruitment process officially opened up to China in 2011. Nevertheless, the public universities and colleges were opened to recruit Mainland Chinese students until 2014 by setting different rules and restrictions compared to private universities and colleges, for

example, each public school is restricted to an admission quota of only five persons each year. However, a drastic political shift occurred in 2016 when the Democratic Progressive Party became the ruling party in Taiwan again, and the policies on cross-straits issues changed. It affects the Mainland Chinese students' recruitment plan and also has an impact on their willingness to study in Taiwan. Based upon the statistics of the Ministry of Education, the number of non-degree seeking Mainland Chinese students dropped from 32,648 in 2016 to 25,824 in 2017 with a decrease rate of 20.9%; and degree-seeking Mainland Chinese students dropped from 2,935 in 2016 to 2,139 in 2017 with a decrease rate of 24.5% (Ministry of Education, 2018). Indeed, the universities and colleges in Taiwan are facing a more challenging environment now.

## Motivation and purpose of research

Recruiting overseas students has become an important goal for many countries as it is a means to further develop higher education. At the same time, China has gradually become a major source of students studying abroad (Y.-H. Chiang, 2010), increasing to 2,644,700 students in 2012, 90% of whom paid their own expenses. Between 2007 and 2011, the number of Chinese nationals studying abroad increased by 20% every year; in 2012 it reached 399,600, a record high increase of 17.65%, making China the largest exporter of students in the world (China Education Online, 2013).

Taiwan cannot afford to disregard the flow of Mainland Chinese students. Between 2012 and 2013, over 75% of Chinese exchange students studied in the United States, Great Britain, Australia, or Canada. Additionally, the excellent education system in Hong Kong helped it to attract 7% of Chinese exchange students (China Education Online, 2013). In contrast, Taiwan was unable to attract a meaningful number of these students. Thus, the issue of whether institutions in Taiwan appeal to Mainland Chinese students is worthy of further investigation.

As recruitment efforts by universities have thus far been unsatisfactory, this study sought to identify factors that can help these institutions attract Mainland Chinese students more successfully. We also provide recommendations that can serve as a reference for school administrators.

## Literature review

### Push-pull factors

Several studies have adopted the push-pull theory when analyzing the factors governing the choice of destination by international students (M. M. Li, 2007; Yang, 2007; Zheng, 2012). Influential factors can be divided into pull factors that attract exchange students to specific countries and push factors that encourage students to leave their home countries (Y.-H. Chiang, 2010).

Naidoo (2007) proposed three influential factors: 1) sociocultural factors: including the target countries' ethnicity, academic prestige, opportunities for immigration, cultural similarities, geographic proximity; 2) economic factors: including tuition fees, exchange rates, and cost of living; and finally 3) political factors: including foreign policy and educational aid.

Mazzarol and Soutar (2002) described six factors that influence the student's choice of host country: 1) visibility and availability of information about the host country in the student's home country; 2) recommendations from friends and relatives; 3) tuition fees as well as living and transportation costs, 4) environmental factors (e.g., weather conditions and living environment), 5) geographical proximity; and 6) social network links (i.e., friends or relatives living in the host country). Altbach (2004) further listed the push factors affecting international students, including 1) professional inadequacy of higher education institutions in the home country; 2) a lack of master's or doctoral programs; and 3) sociopolitical factors. He listed the pull factors as 1) institutional prestige; 2) opportunities for admission; 3) a desire to live in a developed country, such as the United States; and 4) the possibility to immigrate to a developed country.

In summary, factors which influence the decision to study overseas can roughly be divided into sociocultural factors, economic factors, recommendations by relatives and friends, as well as the academic expertise and prestige of the institutions. Therefore, we believed the five factors also have the influence on the Mainland Chinese students' decision to study in Taiwan.

## Factors that attract Mainland Chinese students

Previous studies have examined the factors that pull Mainland Chinese students towards universities in Taiwan. In a survey of 698 students, Mazzarol and Soutar (2002) identified the following push factors for Mainland Chinese students: the desire to better understand western countries (91%); better curriculums overseas compared with the home country (62%); difficulties in pursuing higher education locally (39%); the desire to migrate (38%); and the fact that certain courses was unavailable in the home country (33%). In terms of visibility and information, those researchers identified the following factors as tending to pull students towards a specific host country: a reputable education system (88%); good access to information (87%); high quality of education (87%); and academic performance (79%). In terms of costs, Mazzarol and Soutar (2002) listed: job opportunities (85%); the proportion of international students (85%); low racial divide (75%); low cost of living (66%); low tuition fees (65%); good environment and public order (65%); well-known public colleges or universities (65%); low transportation costs (63%); and eligibility for admission (57%). According to Liu, Hung, and Chung (2009), only four categories significantly impacted students' choice of overseas institution: school information, media information, agency information, and network information.

The economic factor also strongly influences Mainland Chinese students considering studying abroad (M. Wang, 2012). The family economy is not only the main factor affecting Chinese students' enrollment in higher education, but also an influential factor for overseas study (Y. Huang & Shi, 2006; Liu et al., 2009). According to Liu et al. (2009), after controlling for personal characteristics and family background, factors governing the

choice of study destination were as follows: the expected benefits from overseas study, employment prospects, and other economic factors.

Wu (2013) also listed motivations which influenced Mainland Chinese students to study abroad, including: 1) admiration for the national power and prestige of advanced countries; 2) the desire to study advanced theory and cutting-edge technologies at a top university; 3) scholarships to relieve economic pressure; and 4) the ability to receive specific professional training unavailable at home. L. Chen (2011) further pointed out that institution quality, teaching quality, economic concerns, lifestyle, daily life, language, the convenience of application procedures, and a sense of fair treatment by the host country are all important considerations for Chinese students who wish to study abroad.

In research that used the Analytic Hierarchy Process (AHP) method to investigate 22 Mainland Chinese students studying in Taiwan, Y.-H. Chiang (2010) described five important factors: 1) emotional factors (e.g., relatives and friends working or studying in Taiwan, recommendations of others, and personal interest); 2) economic factors (e.g., tuition fees, living expenses, scholarships, and accommodation costs); 3) school-related factors (e.g., reputation, marketing, and quality of faculty and curriculum); 4) cultural factors (including language and food); and 5) factors specific to Taiwan (e.g., experiencing learning in a Taiwanese environment, meeting Taiwanese students, and the desire to come to Taiwan for tourism).

Based on a questionnaire survey of students from six senior high schools in Nanjing, M. Wang (2012) pointed out that 37.93% wished to study in Taiwan; of these, nearly 90% hoped to enter a public university and only 10.2% selected a private university. M. Wang further found that the factors that most strongly influenced Mainland Chinese students to study in Taiwan comprised of: 1) academic factors (e.g., type of school and courses offered); 2) economic background; 3) policies and availability of information; and 4) economic factors.

Lin (2012) listed the factors that pulled Chinese students to study in Taiwan as follows: close proximity to China, shared language, and similar culture. Lin also found that recommendations of classmates who had been exchange students in Taiwan were important, and that Mainland Chinese students often opted to go to Taiwan in order to broaden their horizons.

In summary, factors that influenced Mainland Chinese students to study in Taiwan can be categorized as follows: personal motivations, economic considerations, socioeconomic considerations, recommendations of others, and issues related to specific schools. This study proposed the pull factors that attract students to Taiwan from Mainland China to be as follows: school-related factor, economic factor, sociocultural factor, recommendations of others, and personal factor.

## Learning satisfaction and the intention to pursue further education

This study sought to identify learning satisfaction and the intention to continue studying at the same institution among Mainland Chinese students. Satisfaction refers to the feeling that desires or needs have been achieved (Chang, 2011). It can comprise personal attitudes, beliefs, and emotions towards an entity. Thus, campus satisfaction can

be defined as the subjective evaluation of school life by university students based on cognitive and emotional reactions, so a more positive evaluation of a school indicates greater satisfaction (M.-Y. Chiang, 2007). Students' learning satisfaction refers to the gap of how much they could accept between expectations and outcomes associated with learning, so it is important for fostering learning to meet the learning needs of students and supply them with a good learning environment (Cai, Lin, Chen, & Cheng, 2012). Obviously, the learning satisfaction felt by Mainland Chinese students is determined by how well their expectations compare with actual or perceived outcomes (Liao, 2011).

Binner (1993) summarized the factors that influence learning satisfaction into seven categories: quality of teachers, teaching materials, teaching techniques, curriculum, staff, support services, and extracurricular activities. Cai et al. (2012) also listed factors that influenced the learning satisfaction of Mainland Chinese students studying in Taiwan: quality of teaching, quality of administration, learning effectiveness, peer bonding, and life counseling.

In a survey of students from Peking University, Bao and Zhang (2009) listed various factors as influential in the decision to pursue further education upon graduating, for example: personal characteristics, social and economic background, teaching environment, academic participation of students, academic performance, and other economic considerations. Obviously, the factors of Mainland Chinese students to continue studying in Taiwan are various; however, very little research on this topic is available. We propose that the pull factors that attracted students to Taiwan from Mainland China may ultimately influence the learning satisfaction they experience as well as the intention to pursue further education at the same institution.

C.-C. Chen (2008) studied university policies and strategies for recruiting foreign students to Taiwan and conducted questionnaire surveys among foreign students. Results from that study indicated a high degree of satisfaction, high degree of loyalty, a positive educational experience, and a willingness to recommend Taiwan to relatives and friends. Cai et al. (2012) came to similar conclusions in their study, which investigated learning satisfaction in Mainland Chinese students and the intention of these students to return to Taiwan for further education. The various dimensions of learning satisfaction showed significant positive correlations with the continuation of studies in Taiwan with a correlation coefficient of .418 ( $p < .001$ ) and explained variance of 16.7%. Clearly, learning satisfaction has an important influence on the intention to pursue further education.

In summary, this study proposed pull factors that draw Mainland Chinese students to study in universities in Taiwan likely impact their learning satisfaction, attitudes towards learning, and the desire to pursue further education.

## Research design

### Research framework

According to the literature review, we proposed school-related factor (SRF),

economic factor (EF), sociocultural factor (SF), recommendations of others (RO), personal factor (PF) as relevant pull factors which could affect learning satisfaction (LS) of Mainland Chinese students as well as the intention to pursue further education (IPFE) of these students. Learning satisfaction can influence whether students continue to study in Taiwan and may also mediate the pull factors that affect the decision to pursue further education. The college which students attended might lead to differences in pull factors, learning satisfaction, and intention to pursue further education; therefore, we included these as background variables. The research framework is presented in Figure 1.

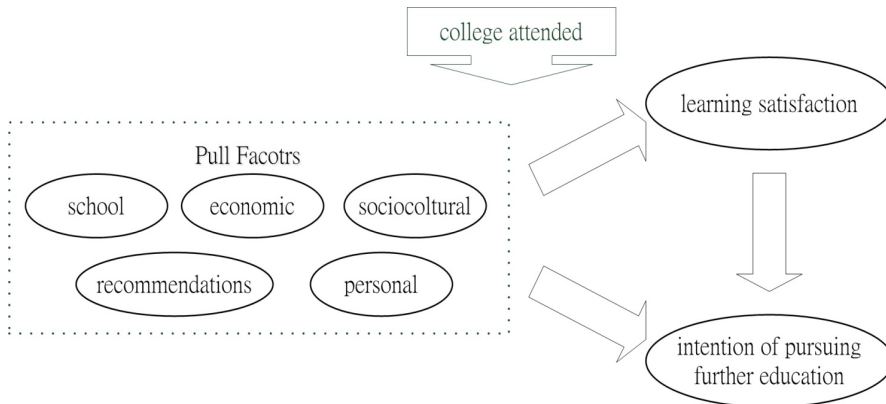


Figure 1. Research framework.

## Research sampling

We invited the staff of the admission offices of 18 universities (randomly selected 30% from 60 universities with more than 10 degree-seeking Mainland Chinese students) to assist in distribution and collection of questionnaires in March of 2013. Each university was responsible for five to 20 questionnaires, respectively, based on the number of the degree-seeking Mainland Chinese students. Totally we distributed 264 questionnaires, all of which were returned (a retrieval rate of 100%). Of these, 11 questionnaires were invalid (all the answers were identical). The 253 valid questionnaires accounted for 84.33% of the total population. Samples with one or more omissions were also eliminated, leaving 228 samples for analysis. Most participants were from the northeast and southeast coastal provinces of China, and they were enrolled in various colleges, including: literature (13.7%), law and business administration (37.4%), polytechnic studies (18.3%), arts and communication (22.8%), and other (7.8%). All of the samples are from private universities because public universities did not recruit degree-seeking Mainland Chinese students until 2014.

## Research instruments

Based on the literature review, three scales were designed to measure pull factors, learning satisfaction, and the intention to pursue further education, respectively. A 4-point Likert scale was adopted for all items, where: 1 = strongly disagree; 2 = disagree; 3 = agree; and 4 = strongly agree. We conducted reliability and validity tests to confirm the appropriateness of survey questions. Cronbach's  $\alpha$  coefficient was adopted for reliability. We used exploratory factor analysis to establish the construct validity of the scales. We also used principal axis factoring coupled with Promax oblique rotation in analysis. Factors with eigenvalues greater than 1 were selected as explanatory variables. Analytical methods are explained in more detail below.

The pull factor survey had 21 items, and EFA identified the five types of factors mentioned above as having influences on the decision of Mainland Chinese students to study in Taiwan. Combined, these variables explained 60.75% of variance. All survey items fell under the original latent variable construct, thereby indicating good construct validity. The overall  $\alpha$  coefficient of the scale was .92, and the  $\alpha$  coefficients for the five factor types were .92, .84, .81, .79, and .77, respectively, thereby indicating good internal consistency. The learning satisfaction scale included five items and learning satisfaction was the only factor identified, with an explained variance of 56.94%, indicating moderate construct validity. An  $\alpha$  coefficient of .87 indicates the good internal consistency of the scale. The intention to continue studying scale included three items and it was the only factor identified, with an explained variance of 65.32%, indicating moderate construct validity. An  $\alpha$  coefficient of .85 indicates the good internal consistency of the scale. The questionnaire items are listed in Table 1.

Table 1  
*Dimensions of Latent Variables and Questionnaire Items*

Latent variables	Indicators	Questionnaire items
		I chose to study at a university in Taiwan because:
SRF	X1	Universities in Taiwan are international institutions.
	X2	Universities in Taiwan offer high quality education.
	X3	Universities in Taiwan promote a high degree of innovation.
	X4	Universities in Taiwan offer a wide range of departments.
	X5	Universities in Taiwan offer well-designed curricula.
	X6	Universities in Taiwan boast a team of high-quality instructors.
	X7	Universities in Taiwan have excellent technical capabilities.
	X8	Universities in Taiwan provide a variety of learning resources.
	X9	Universities in Taiwan feature a rich campus life.
	X10	Universities in Taiwan have a wonderful learning environment.



Latent variables	Indicators	Questionnaire items
EF	X11	It is more affordable to study in universities in Taiwan, compared with other countries.
	X12	Compared to other countries, the cost of living in Taiwan is lower.
SF	X13	Taiwan and China share similar cultural backgrounds.
	X14	There is no language barrier for Mainland Chinese students studying in Taiwan.
	X15	Taiwan has a safe environment.
RO	X16	Recommendations of my family.
	X17	Recommendations of my classmates or friends.
	X18	Recommendations of my teachers.
PF	X19	I have relatives or friends living in Taiwan.
	X20	I was aware of the universities in Taiwan.
	X21	Marketing efforts by universities in Taiwan appealed to me.
LS	Y1	I am satisfied with the course content.
	Y2	I am satisfied with the instructors.
	Y3	I am satisfied with the learning environment.
	Y4	I am satisfied with the learning resources.
	Y5	I am satisfied with administrative services.
IPFE	Y6	I find universities in Taiwan much more appealing.
	Y7	I am likely to enroll in another program or apply for graduate school in Taiwan.
	Y8	If I were able to choose again, I would still study at a university in Taiwan.

*Note.* SRF = school-related factor; EF = economic factor; SF = sociocultural factor; RO = recommendations of others; PF = personal factor; LS = learning satisfaction; IPFE = intention to pursue further education.

## Research model

The independent variables in the research model included five categories of pull factors that influenced Mainland Chinese students to study at a university in Taiwan: SRF, EF, SF, RO, and PF. LS was a mediating variable, and the dependent variable was IPFE. LS and the five pull factors all had a direct impact on intention to pursue further education. Pull factors also indirectly impacted IPFE through LS. The overall research model is presented in Figure 2.

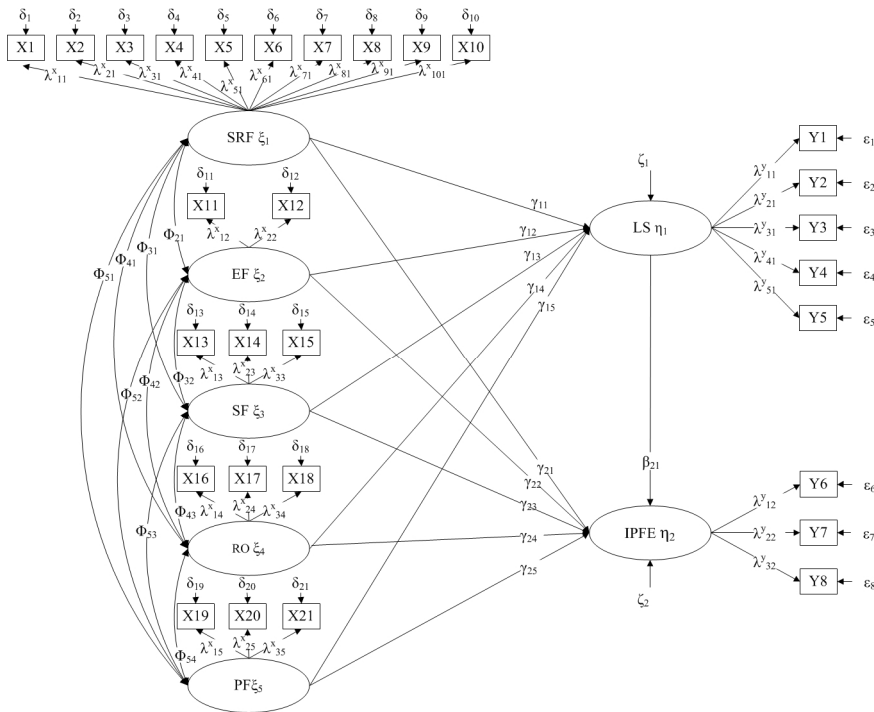


Figure 2. The research model of pull factors, LS, and IPFE.

Note. Indicators corresponding to questionnaire items are presented in Table 1. SRF = school-related factor; EF = economic factor; SF = sociocultural factor; RO = recommendations of others; PF = personal factor; LS = learning satisfaction; IPFE = intention to pursue further education.

## Data analysis

This study used SPSS software to gain insight into the differences in learning satisfaction, the intention to pursue further education, or the pull factors according to the college that students attended. Pull factors were analyzed using multivariate analysis of variance (MANOVA); learning satisfaction and the intention to pursue further education were analyzed using analysis of variance (ANOVA).

Structural equation modeling (SEM) was performed using AMOS software to identify correlations among variables. Bagozzi and Yi (1988) claimed that preliminary fit criteria, overall model fit, and fit of internal structural model must all be considered in SEM. For estimation and testing of the overall model, we adopted a strictly confirmatory strategy rather than modifying the statistical model to verify the theoretical model. Finally, we used bootstrapping methods to test the influence of individual variables. Bootstrapping is not restricted by sample distribution pattern, making it appropriate for small sample sizes and giving it the ability to verify direct results, indirect effects, and total effects (M.-N. Li, 2009).

## Analysis and discussion

### General information

This study used descriptive statistical analysis to investigate pull factors, LS, and IPFE. As shown in Table 2, the average value of the pull factors is between 2.59~3.30, with a standard deviation between 0.51 and 0.79. Because all averages were over 2.5, our results indicated that the decisions of most Mainland Chinese students to study in Taiwan were affected by all the pull factors. SF (M=3.30) had the greatest influence, SRF (M=3.13) had the second greatest influence, and PF (M=2.59) had the lowest influence comparatively. The average score for LS was 3.12 (with a standard deviation of 0.47), indicating that the participants were satisfied studying at universities in Taiwan. The average score for IPFE was 2.84 (with a standard deviation of 0.68), indicating that participants were slightly willing to continue studying at universities in Taiwan.

Table 2  
*Descriptive Statistical Analysis of Latent Variables*

Latent variable	M	SD
Pull factors		
school-related factor (SRF)	3.13	0.51
economic factor (EF)	2.82	0.73
sociocultural factor (SF)	3.30	0.53
recommendation of others (RO)	2.86	0.70
personal factor (PF)	2.59	0.79
Learning satisfaction (LS)	3.12	0.47
Intention to pursue further education (IPFE)	2.84	0.68

Note. N=228.

Table 3 presents summary statistics from MANOVA analysis of pull factors according to college attended. In analyzing the effects of college attended (literature, law/business administration, science and technology, art communication), the homogeneity of variance yielded a Box M value of 77.58 ( $p < .01$ ), and the Bartlett's test of sphericity yielded an  $\chi^2$  value of 368.78 ( $p < .001$ ), indicating that MANOVA analysis was appropriate. However, no significant differences were observed among groups (Wilk's  $\Lambda = .918, p > .05$ ). When individual factors were tested, F values (between 0.89 and 2.71) were not found to be significant.

Results of these analyses indicate little variation in terms of factors that attracted students from various provinces in southeast coastal China to study at a Taiwanese university. The average difference in origin was between 2.42 and 3.37 with a standard

deviation of between 0.41 and 0.78. The average difference among student subpopulations according to college selection was between 2.42 and 3.41 with a standard deviation of between 0.44 and 0.93.

Table 3  
Summary Table of MANOVA for Pull Factors

College attended	SRF	EF	SF	RO	PF	Wilk's $\Lambda$
Literature	3.24 (0.57)	3.02 (0.83)	3.41 (0.47)	3.02 (0.74)	2.76 (0.93)	.918
Law/business administration	3.08 (0.49)	2.85 (0.74)	3.25 (0.56)	2.78 (0.69)	2.42 (0.73)	
Science and technology	3.20 (0.44)	2.78 (0.71)	3.38 (0.52)	2.90 (0.76)	2.78 (0.68)	
Art and communication	3.04 (0.57)	2.72 (0.75)	3.22 (0.59)	2.90 (0.71)	2.52 (0.81)	
F value	1.46	1.08	1.31	0.89	2.71	
R <sup>2</sup>	.022	.016	.019	.013	.039	

\* $p < .05$ .

Table 4 presents ANOVA to compare LS and IPFE among student groups classified by the college they attended. In analyzing student subpopulations according to college selection, the F values did not reach the level of significance; therefore, college selection does not appear to influence learning satisfaction or the intention to pursue further education. Average learning satisfaction was between 3.06 and 3.22, with a standard deviation of 0.34~0.60. The average intention to pursue further education was between 2.71 and 3.04 with a standard deviation of 0.61 and 0.77.

Table 4  
Summary Table of ANOVA for LS and IPFE

College attended	LS			IPFE		
	M	SD	F	M	SD	F
Literature	3.15	0.60	1.18	2.93	0.77	2.42
Law/business administration	3.06	0.34		2.71	0.70	
Science and technology	3.22	0.54		3.04	0.61	
Art & communication	3.09	0.53		2.83	0.63	

## Test for the model

### *Data validation*

Before conducting a fitness test on the research model, we had to determine whether the data of each observed variable was normally distributed. Kline (2011) reported that when the absolute value of skewness is less than 3.0 and the absolute value of kurtosis is less than 10.0, distribution can be viewed as normal. In this study, the skewness and kurtosis of the 29 observed variables complied with those standards, such that all observed variables in this study were normally distributed. Therefore, we adopted maximum likelihood (ML) for parameter estimation.

To elucidate relationships among the 29 observed indicators, a correlation test was performed. Correlation coefficients ranged between .13 and .76 and reached the level of significance for most of the 29 observed indicators (0.001).

### *Model fitness test*

Figure 3 shows the standard coefficients of estimation parameters in the model using the maximum likelihood method. Note that measurement errors of observed indicators and residual errors of endogenous latent variables were all positive and did not have negative error variance. Additionally, all error variances reached the level of significance (0.01 or 0.001). Factor loadings between latent variables and observed indicators were between .53 and .92, and factor loadings of observed indicators were in line with the 0.50 -0.95 standard. Moreover, the standard error of estimated parameters was between .07 and .24. These results show that preliminary fitness criteria were fully met.

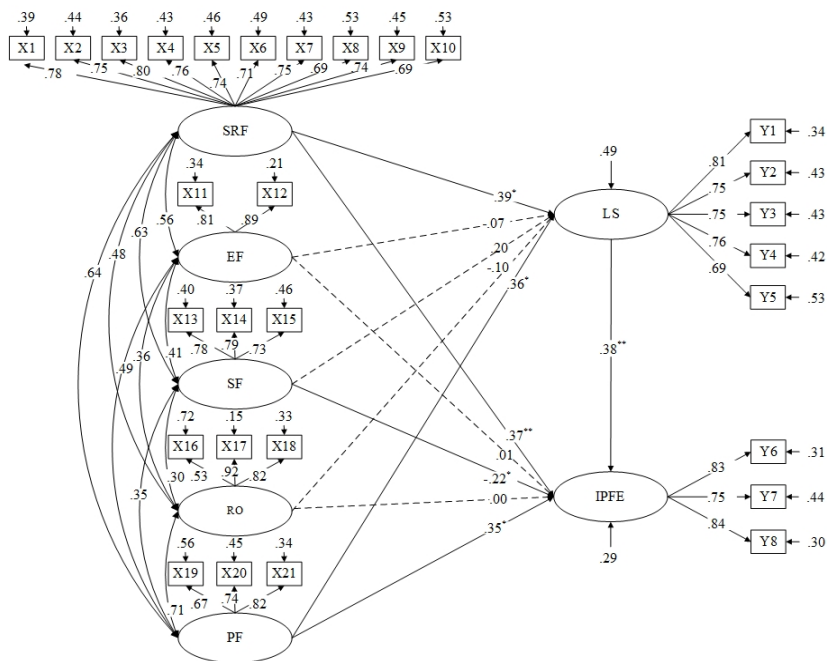


Figure 3. Standard coefficients of estimation parameters.

Note. SRF = school-related factor; EF = economic factor; SF = sociocultural factor; RO = recommendations of others; PF = personal factor; LS = learning satisfaction; IPFE = intention to pursue further education.  
\*  $p < .05$ . \*\*  $p < .01$ .

Overall model fitness was assessed using three tests: absolute fit, incremental fit, and parsimonious fit. In terms of absolute fit,  $\chi^2_{(356)} = 611.16$  ( $p < .05$ ), RMR=.03, RMSEA=.05, SRMR=.05, GFI=.85, and AGFI=.82. In terms of incremental fit, NFI=.85, RFI=.83, IFI=.93, TLI=.92, and CFI=.93. In terms of parsimonious fit, PGFI=.70, PNFI=.75, PCFI=.82, and  $\chi^2/df = 1.72$ . The above indicators were integrated and most model fitness indicators were in line with established standards, indicating that the theoretical model used by this study possesses good fitness with the actual data.

Table 5 shows the internal structure fit of the model collated in this study. Individual item reliabilities of the 29 observed indicators were between .28 and .85, and almost all indicators were higher than the standard .50. Values for the combined reliability of latent variables were .92, .84, .81, .81, .79, .87, and .85, respectively, with all values exceeding the standard of .60 (Bagozzi & Yi, 1988). Average extracted variances in latent variables were .55, .72, .59, .60, .56, .57, and .65, respectively, all higher than the standard of .50 (Bagozzi & Yi, 1988). These results demonstrate that the model has good internal structural fit.

Table 5  
Internal Structural Fit of the Model

Observation indicators	Factor load	Reliability coefficient	Measured error	Composite reliability	Average variance extracted
SRF				.92	.55
$\lambda_{11}^x$	.78	.61	.39		
$\lambda_{21}^x$	.75	.56	.44		
$\lambda_{31}^x$	.80	.64	.36		
$\lambda_{41}^x$	.76	.58	.42		
$\lambda_{51}^x$	.74	.55	.45		
$\lambda_{61}^x$	.71	.50	.50		
$\lambda_{71}^x$	.75	.56	.44		
$\lambda_{81}^x$	.69	.48	.52		
$\lambda_{91}^x$	.74	.55	.45		
$\lambda_{101}^x$	.69	.48	.52		
EF				.84	.72
$\lambda_{12}^x$	.81	.66	.34		
$\lambda_{22}^x$	.89	.79	.21		
SF				.81	.59
$\lambda_{13}^x$	.78	.61	.39		
$\lambda_{23}^x$	.79	.62	.38		
$\lambda_{33}^x$	.73	.53	.47		
RO				.81	.60
$\lambda_{14}^x$	.53	.28	.72		
$\lambda_{24}^x$	.92	.85	.15		
$\lambda_{34}^x$	.82	.67	.33		
PF				.79	.56
$\lambda_{15}^x$	.67	.45	.55		
$\lambda_{25}^x$	.74	.55	.45		
$\lambda_{35}^x$	.82	.67	.33		
LS				.87	.57
$\lambda_{11}^y$	.81	.66	.34		
$\lambda_{21}^y$	.75	.56	.44		
$\lambda_{31}^y$	.75	.56	.44		
$\lambda_{41}^y$	.76	.58	.42		
$\lambda_{51}^y$	.69	.48	.52		
IPFE				.85	.65
$\lambda_{12}^y$	.83	.69	.31		
$\lambda_{22}^y$	.75	.56	.44		
$\lambda_{32}^y$	.84	.71	.29		

### *Effects among individual variables*

According to the analytic results of the research model by bootstrapping, there are significant effects among latent variables (Table 6). SRF and PF had a significant direct effect on LS and IPFE; moreover, they generate a significant indirect effect on IPFE through LS, so LS is proved a mediator. The total effects of SRF and PF on IPFE were .52 and .49, respectively. Although the others did not have a significant direct effect on learning satisfaction, SF may have had a small indirect effect on IPFE through LS; however, the final total effect on IPFE was -.14, which does not reach the level of significance (0.05).

Table 6  
*Values of Standardized Effects of Variables Included in the Hypothetical Model*

Path affected	Direct effects	Indirect effects	Total effects
SRF → LS	.39*		.39*
SRF → IPFE	.37**	.15**	.52**
EF → LS	-.07		-.07
EF → IPFE	.01	-.03	-.02
SF → LS	.20		.20
SF → IPFE	-.22*	.08*	-.14
RO → LS	-.10		-.10
RO → IPFE	.00	-.04	-.04
PF → LS	.36*		.36*
PF → IPFE	.35*	.14*	.49**
LS → IPFE	.38**		.38**

\* $p < .05$ . \*\* $p < .01$ .

### Discussion

This study explored factors that attract Mainland Chinese students to study at Taiwanese universities, including sociocultural factors, school-related factors, recommendations of others, economic factors, and personal factors. Our findings were consistent with most previous studies; however, factors differed somewhat according to the order of importance (see L. Chen, 2011; Y.-H. Chiang, 2010; Mazzarol & Soutar, 2002; Lee, 2010; M. M. Li, 2007; M. Wang, 2012; Yang, 2007). In our study, economic factors were not as important as indicated by other researchers. One possible explanation may be that most of the Mainland Chinese students in Taiwan came from families with relatively high socioeconomic status along the southeast coast. Another possibility is that a big part



of previous studies surveyed exchange students and short-term trainees, while our study was conducted using undergraduates. Pull factors attracting undergraduate students would undoubtedly vary from pull factors attracting exchange students.

The variable of college selection was not found to influence all the pull factors, learning satisfaction and the intention to pursue further education. This result differs from the findings of C.-Y. Chen (2010) and Liao (2011); however, contradictions among studies also can likely be attributed to differences in sample populations (comprehensive versus university students).

SEM analysis revealed that, in our study, only school-related factors and personal factors had a significant impact on learning satisfaction and the intention to pursue further education. This confirms findings from many previous studies, which found that school prestige, curriculum, facilities, etc. play important roles in attracting students from China to Taiwan (C.-Y. Chen, 2010; L. Chen, 2011; Y.-H. Chiang, 2010; Lee, 2010; Mazzarol & Soutar, 2002; M. Wang, 2012; Wu, 2013). These results demonstrate that the status of the school, as perceived by the student, has considerable influence on learning satisfaction and the intention to pursue further education.

## Implication

There are four important findings in this study: 1) sociocultural and school-related factors were shown to have the strongest influence on the decision of Mainland Chinese students to study at Taiwanese universities. After accounting for subsequent effects of learning satisfaction and the intention to pursue further education, school-related factors were found to play the most important role; 2) the college students selected had no impact on the pull factors, learning satisfaction or intention to pursue further education. That is, pull factors for these students had no difference and no distinction on the learning satisfaction and intention to pursue further education; 3) school-related factor and personal factor have an impact on satisfaction and the intention to pursue further education. Although sociocultural factor had significant direct and indirect influences on the intention to pursue further education, the overall effect was not significant; and 4) learning satisfaction had a direct impact as well as a mediating effect on the intention to pursue further education. It means that learning satisfaction largely determines whether a student will continue to study at a Taiwanese university. Learning satisfaction also mediated the effect of school-related factor and individual factors regarding the intention to pursue further education.

In conclusion, based on the major findings, it is strongly suggested that universities must increase learning satisfaction when dealing with Mainland Chinese students. This study found school-related considerations to be important pull factors that strongly influenced student satisfaction and the intention to pursue further education in Taiwan. Therefore, the universities should attempt to become more attractive to Mainland Chinese students by focusing on internationalization, the quality of education, the curriculum, and learning resources. In addition, colleges should seek to employ a team of highly qualified teachers and to promote a good learning environment. The effect of learning satisfaction

on the intention to pursue further education cannot be disregarded. Not only does learning satisfaction directly influence the pursuit of higher education, it also regulates the impact of school and personal factors. According to the qualitative results of Cai et al. (2012), tertiary education institutions in Taiwan should continue to move toward internationalization, introduce good teachers, and establish sound counseling mechanisms for Mainland Chinese students, and only under the situation of a common language and low opportunity cost can Taiwanese schools compete with first-class global universities.

Finally, the study was restricted by a sample of Mainland Chinese students in Taiwanese universities, and unable to obtain personal opinions from a broad range of students. We recommend that subsequent research should collect data for at least two academic years and look for other factors that could affect school selection and the intention to pursue further education. The primary aim of this type of research is to increase the enrollment of students from Mainland China, however, student retention is also important.

## Address for correspondence

Hsin-Chih Lin  
Associate Research Fellow  
National Academy for Educational Research  
No.2, Sanshu Road, Sanxia District, New Taipei City, 23703, Taiwan  
Email: seize610@gmail.com

## References

- Altbach, P. G. (2004). Higher education crosses borders: Can the united states remain the top destination for foreign students? *Change*, 36(2), 18–24. doi:10.1080/00091380409604964
- Bagozzi, R. P., & Yi, Y. (1988). On the evaluation of structural equation models. *Journal of the Academic of Marketing Science*, 16(1), 74–94. doi:10.1007/BF02723327
- Bao, W., & Zhang, Q. (2009). An empirical study on graduate school choice in China since the enrolment expansion. *Fudan Education Forum*, 7(5), 5–11. Retrieved from <http://cnki50.csis.com.tw> [In Chinese]
- Binner, P. M. (1993). The development of an instrument to measure student attitudes toward televised courses. *American Journal of Distance Education*, 7(1), 62–73. doi : 10.1080/08923649309526811
- Cai, C.-S., Lin, C.-R., Chen, Y.-P., & Cheng, Y.-F. (2012). A study of life adjustment and learning satisfaction of Chinese students in Taiwan. *Journal of Chinese Trend and Forward*, 8(2), 15–42. Retrieved from <http://www.airitilibrary.com> [In Chinese]
- Chang, C.-H. (2011). *Chang's psychology dictionary*. Taipei, Taiwan: Tunghua. [In Chinese]

- Chen, C.-C. (2008). *Recruitment policies and strategies of foreign students in higher education of Taiwan via the analysis of educational marketing theories* (Unpublished master's thesis). National Normal University, Taipei, Taiwan. [In Chinese]
- Chen, C.-Y. (2010). *The analysis of the pull factors of Taiwan higher educational institutes of students from Mainland China* (Unpublished master's thesis). National Chengchi University, Taipei, Taiwan. [In Chinese]
- Chen, L. (2011). *A study of Mainland China student to take higher education in Kinmen* (Unpublished master's thesis). National Kinmen University, Kinmen, Taiwan. [In Chinese]
- Chiang, M.-Y. (2007). The discussion on relation model about school satisfaction and its influential factors: Taking the university students in Taiwan as examples. *Educational Policy Forum*, 10(3), 1–31. Retrieved from <http://www.ericdata.com> [In Chinese]
- Chiang, Y.-H. (2010). Using AHP on the determinants of China's students to study in Taiwan. *East-Asia Review*, 470, 75–89. Retrieved from [http://www.airiti.com/TEPS/ec\\_en/Default.aspx](http://www.airiti.com/TEPS/ec_en/Default.aspx) [In Chinese]
- China Education Online. (2013). *The trend of studying abroad report 2013*. Retrieved from <http://www.eol.cn/html/lx/baogao2013/page1.shtml> [In Chinese]
- Chou, C.-P., & Yang, J.-Y. (2012). The issue of cross-strait relations in the international exchange. In Chinese Society of Education (Ed.), *Education vision 2020* (pp. 51–81). Taipei, Taiwan: Proedp. [In Chinese]
- Council for Economic Planning and Development. (2012). *Projections of the population of the Taiwan area, Republic of China*. Retrieved from <http://www.cepd.gov.tw/dn.aspx?uid=11723> [In Chinese]
- Huang, W.-T. (2013). Reflections on recruiting students from Mainland China students. *Taiwan Education Review Monthly*, 2(1), 32–39. Retrieved from <http://www.airitilibrary.com> [In Chinese]
- Huang, Y., & Shi, F. (2006). The influence of background factor on students' universities selection. *Culture and History Vision*, 16, 51–52. Retrieved from <http://cnki50.csis.com.tw> [In Chinese]
- Kline, R. B. (2011). *Principles and practice of structural equation modeling* (3rd ed.). New York, NY: Guilford.
- Lee, I.-Y. (2010). *A research on study motivation, life adjustment, and attitude toward Taiwan government's policy of students from Mainland China* (Unpublished master's thesis). Taipei Municipal University of Education, Taipei, Taiwan. [In Chinese]
- Li, M. M. (2007). Cross-border flows of students for higher education: Push-pull factors and motivations of Mainland Chinese students in Hong Kong and Macau. *Higher Education*, 53(6), 791–818. doi:10.1007/s10734-005-5423-3 [In Chinese]
- Li, M.-N. (2009). *An introduction to graphic Amos and its uses in research*. Taipei, Taiwan: Wunan. [In Chinese]
- Liao, H.-T. (2011). *Studies on satisfaction of Mainland Chinese students in Taiwan's higher education in central Taiwan: Focus on service quality learning environment, and perceived values* (Unpublished master's thesis). National Yunlin University of Science and Technology, Yunlin, Taiwan. [In Chinese]
- Lin, W.-L. (2012). *The study of cognitive effects of the short-term exchange students from Mainland to China* (Unpublished master's thesis). Tamkang University, New Taipei

- City, Taiwan. [In Chinese]
- Liu, Y., Hung, F.-S., Chung, Y.-P. (2009). Major selection of Chinese Mainland high school students for overseas higher education and its affecting factors. *Journal of Higher Education*, 30(4), 42–54. Retrieved from <http://cnki50.csis.com.tw> [In Chinese]
- Mazzarol, T., & Soutar, G. N. (2002). Push-pull factors influencing international student destination choice. *International Journal of Educational Management*, 16(2), 82–90. doi:10.1108/09513540210418403
- Ministry of Education. (2017). *Platform of Taiwan university information*. Retrieved from <http://udb.moe.edu.tw/> [In Chinese]
- Ministry of Education. (2018). *The statistics of non-degree seeking and degree seeking Mainland China students*. Retrieved from <https://www.mac.gov.tw/cp.aspx?n=A3C17A7A26BAB048> [In Chinese]
- Naidoo, V. (2007). Research on the flow of international students to UK universities: Determinants and implications. *Journal of Research in International Education*, 6(3), 287–307. doi:10.1177/1475240907083197
- Rizvi, F., & Lingard, B. (2000). Globalization and education: Complexities and contingencies. *Educational Theory*, 50(4), 419–426. doi:10.1111/j.1741-5446.2000.00419
- Tai, H.-H., Mok, K.-H., & Xie, A.-B. (Eds.). (2002). *The marketization of higher education: A comparative study of Taiwan, Hong Kong and China*. Taipei, Taiwan: Higher Education. [In Chinese]
- Wang, M. (2012). *The intention and influencing factors of Mainland high school students going to Taiwan to study* (Unpublished master's thesis). Nanjing University, Nanjing, China. [In Chinese]
- Wang, Z.-H. (2013). Criticism on recruiting Mainland Chinese students and its controversy. *Taiwan Education Review Monthly*, 2(1), 29–31. Retrieved from <http://www.airtilibrary.com> [In Chinese]
- Wu, S.-W. (2013). University globalization and recruitment on international students and Mainland Chinese students. *Taiwan Education Review Monthly*, 2(1), 23–26. Retrieved from <http://www.airtilibrary.com> [In Chinese]
- Yang, M. J. (2007). What attracts Mainland Chinese students to Australian higher education. *Studies in Learning, Evaluation, Innovation and Development*, 4(2), 1–12. Retrieved from file:///D:/Downloads/View%20published%20version%20online.pdf [In Chinese]
- Zheng, P. (2012). Antecedents to international student inflows to UK higher education: A comparative analysis. *Journal of Business Research*, 67(2), 136–143. doi:10.1016/j.jbusres.2012.11.003

Reproduced with permission of copyright owner. Further reproduction prohibited without permission.