The International Journal of

Learning in Higher Education

The Effects of Service Quality on English Majors' Satisfaction

A Chinese Empirical Study

TIMOTHY SCOTT AND WENYU GUAN

The Effects of Service Quality on English Majors' Satisfaction: A Chinese Empirical Study

Timothy Scott,[1] Assumption University, Thailand
Wenyu Guan, Guangdong Medical University, China

Abstract: Previous research examining student satisfaction in China has been broad in its demographic profile while utilizing instruments that have questionable reliability. This study has incorporated a newly validated model to assess student satisfaction, specifically Chinese students majoring in English at a domestic Chinese university, an underrepresented element in current research. The purpose of this study was to examine the influence that the administration, campus environment, and course delivery have on Chinese students' satisfaction in studying English in a Chinese higher education institution. The study used a quantitative research design consisting of 615 first to fourth-year English majors currently enrolled in a Chinese university. Participants' responses were examined through factor, correlational, and regression analysis. The examination of these dimensions' influences on student satisfaction indicated correlations ranging from $r = 0.441$ to 0.603. Administration influenced satisfaction significantly with $\beta = 0.443$, while campus environment and course design had $\beta = 0.111$ and 0.383, respectively. Each dimension's statistical significance supported the study's hypotheses, but findings indicate that the campus environment had a negligible effect with $f = 0.01$. The practical implication of this study offers a validated model for examining student satisfaction. The questionnaire's size allows for easy deployment and examination, focusing on three critical dimensions against student satisfaction.

Keywords: China, English Majors, Higher Education, Student Satisfaction

Introduction

The success of any organization depends on providing a product or service that satisfies the customer's needs. By providing exceptional service quality, an organization can retain existing customers while forging opportunities to attract others. Current conditions in the higher education sector demand that educational organizations strategically align institutional policies to improve the quality of services offered to students to ensure long-term viability. Enrollment policies are directly related to students' satisfaction with their educational experience, as they offer a compelling source of service testimonials to further recruits. Higher educational institutions that achieve substantial student satisfaction maintain a competitive advantage (Arambewela and Hall 2009), resulting in considerable research on measuring and defining priority dimensions.

Research identifying satisfaction factors is not education-specific, as numerous generic measurements assist organizations in their policy planning. However, the complexities of the higher education sector hinder the utilization of instruments designed for other industries because engagement, needs, and expectations differ among the students' educational life cycle. Weerasinghe and Fernando (2018) explained that traditional business models focus primarily on service provider qualities; however, student satisfaction is connected to many variables that only connect marginally to the provider itself. Higher education measurements have been developed to rectify discrepancies in instrumentation applicability (e.g., Higher Education Performance [HEdPERF]; Higher Education Service Quality Scale [HESQUAL]) to varying degrees of acceptance.

Education is considerably aligned with national growth, as higher education promotes the necessary skills for the population to be effective in changing economic climates. China is one such nation that has actively supported its domestic education sector through investment and quality assurance policies. Previously, outflows of students to leading education nations were

---

seen as a strategic approach to modernize and grow educational institutions and the economy (Hou 2001). As investments started to mature, the Chinese government enacted the Thousand Talent Plan in 2008, with an expanded scope and incentives in the following years. The policy's principal component was to recruit top academics and researchers in their fields for positions in higher institutions in China; with improved capacity, student outflows will be mitigated (Bekkers 2017). A considerable onus of the policy's success is on the domestic education institution—the need to improve quality standards to compete with international universities in terms of curriculum and value. Science, technology, engineering, and mathematics (STEM) fields have seen significant investment and success with improved international talent and institutional ranking (Kim and Allen 2018); however, other programs, like foreign languages, struggle to draw interest. Chinese institutions are at a significant disadvantage when promoting English as a major; students desiring to learn the language often seek to understand the idiosyncrasies through a specific cultural lens. These nuanced mechanisms are hard to replicate in a non-native classroom (Anderson and Lawton 2011); thus, international institutions' desirability remains high. To offset these perceived shortcomings, Chinese institutions need to be more acutely aware of student needs to offer the best service possible.

This study examines the impact of a domestic Chinese higher education institution's service quality on the satisfaction of currently enrolled students studying English as a major. This research proposes a model examining the influences of the administration, campus environment, and course design on Chinese student satisfaction. The objectives of this study are:

- to develop an instrument to accurately determine the influence of the administration, campus environment, and course design on student satisfaction,
- to validate the developed instrument through extensive statistical testing, and
- to explore the influence of the developed dimensions on student satisfaction.

In validating the originally designed model's dimensions, this article hopes to provide other educational institutions with a simple assessment tool to assist education reforms and policy generation. This research's specific empirical findings should clarify the importance of each dimension in improving current operations to serve existing and future students better.

Literature Review

Service Quality

Service quality is considered an essential element in the operational success of any enterprise. Market competitiveness drives organizations to examine their market position and reflect on policies that will best satisfy customer requirements to create a strategic advantage. Although industry and researchers have investigated service quality for decades, little consensus exists regarding a universal definition of service quality or the dimensions it reflects. Initial conceptualizations of service quality identified customer needs and translated those needs into products or services (Hovell and Walters 1972). Coye (2004) noted that service quality is related to customer expectations and how those expectations compare to actual services received. The nuanced individualistic nature of service quality confounds the attempt to create a singular definition; as service quality is consumer-driven, standardized conceptions may be unobtainable (Sharif and Kassim 2012). With service quality continuing to change, depending on market conditions and evolving consumer demands, assessment models continuously adjust, leaving no definitive framework for precise comparability. Service quality is not a distinct construct or variable but an overarching terminology specifying the qualities that are necessary to remain competitive and relevant in the marketplace.

Numerous assessment models have been developed to examine and define the dimensions that best capture service quality. The two most used instruments differ immensely in defining service quality; thus, their designs are in theoretical opposition. The SERVQUAL model (Parasuraman, Zeithaml, and Berry 1985) employs a gap assessment strategy, where organizational service quality is derived from the difference between customer perceptions and initial expectations. Cronin and Taylor (1992) criticized the inclusion of expectations in quality assessment, as customers do not always make purchases based on expected quality but value. Expectations are user-generated, resulting in a lack of conformity in definition and a general vagueness in its respondents' interpretations. Cronin and Taylor's (1992) criticisms of the SERVQUAL model resulted in the SERVPERF model. The SERVPERF model disregards the expectation element of the SERVQUAL model, creating a more methodologically structured instrument. SERVPERF essentially reduces response time by half, reducing the potential of respondent fatigue. Although the SERVPERF model performance is arguably stronger than SERVQUAL, it requires considerable adjustments to apply to various industries. The consistent altering of the designed frameworks reduces cross applicability and increases potential reliability and validity issues (Seth, Deshmukh, and Vrat 2005).

Service Quality and Satisfaction in Higher Education

Higher education has undergone systematic changes; external factors have required a paradigm shift from public to private. Market deregulations, reduced funding, increased competition, and dramatic student demographic shifts have forced higher education institutions to become entrepreneurial (Slaughter and Cantwell 2012). Students are perceived as customers, empowered to influence institutional design and conditions to accommodate their perceived needs; however, constructing standardized assessment tools remain inconsistent. Abdullah (2005) argued that all instruments should focus on the determinants of service quality from the students' point of view, as students are the intended target of educational organizations when given by market conditions. Policies are created to improve identified determinants to increase student satisfaction, as satisfaction is considered a key determinant to improved institutional reputation (Moslehpour et al. 2020), student loyalty (Latip, Newaz, and Ramasamy 2020), and retention (Rose, Said, and Anbalagan 2018). Although numerous genetic service quality assessment tools (SERVQUAL, SERVPERF) have been utilized in educational research, the education sector's uniqueness requires a more customized measurement to identify determinants and provide tools for educational reforms.

Researchers have developed and tested instruments with various successes and acceptance to formulate an industry-specific model. The HESQUAL model developed by Teeroovengadum, Kamalanabhan, and Seebaluck (2016) is a sizeable hierarchical instrument that consists of five constructs that contain nine variables and forty-eight items. The model was created through a mixed-method approach, attempting to incorporate all potential factors into its design. Two hundred seven students responded in the initial study; statistical analysis was limited and did not explore model fit, and construct influence on the outcome variable (service quality) was not examined. The relatively large scale of variables makes the HESQUAL model enticing; however, acceptance has been muted with little statistical support to show its suitability in large-scale studies. The satisfaction evaluation model by Xie and Guo (2010) identified five constructs—perceived value, perceived overall value, student expectations, student complaints, and student loyalty—to determine influences on student satisfaction. The initial study of 307 students showed strong correlations between satisfaction and perceived overall quality, expectations, and perceived value. However, exploratory factor analysis indicated that only three factors obtain eigenvalues greater than 1. The cross-loading of items demonstrates that items may predict student satisfaction, but the construct's framing is ill-designed. The most accepted and employed higher education-specific model is HEdPERF, developed by Abdullah (2006). Initial construction and testing of

Abdullah's HEdPERF model only determined 'access' as a determinant influencing service quality. Abdullah (2005) re-deployed the HEdPERF scale to compare its measuring efficacy against SERVPERF in the higher education sector; his findings indicated that HEdPERF explained variance better than SERVPERF, suggesting that HEdPERF is an appropriate education sector model. As HEdPERF (HESQUAL and SERVPERF) do not specifically examine satisfaction, the instrument would need to be modified to incorporate the student satisfaction variable. While this is commonly performed by researchers (Ali et al. 2016), model reliability may deteriorate depending on the studies' items.

Student Satisfaction and Chinese Higher Education

Chinese students participate in international studies more than any other nationality, accounting for 17.8 percent of international students worldwide (United Nations, n.d.). The outbound students reflected on the Chinese society's belief that international education can be leveraged in the Chinese domestic market once they return. Foreign-educated Chinese students have been vital in modernizing the domestic education, science, and technology fields (Tang 2016; Guan 2021). Students from affluent families targeted overseas education institutions because of most domestic institutions' perceived deficiencies and questionable reputations (Scott and Mhunpiew 2021). Recently, the Chinese government has sought to hedge outflow through increased standardization, investment, and support for institutions to compete and attract students considering overseas studies. Although no formal education policy is in place to limit international studies, the government's engagement has signaled that it wants to be a destination in the future through 2008's Thousand Talent Plan (Guan 2021). The conceptual belief is that the recruitment of top talent to work in Chinese institutions will improve the intellectual capacity of the entire nation. Student satisfaction is paramount in domestic institutions' targeted campaigns in promoting their educational model over international competition. An area at a strategic disadvantage compared to other fields of study would be foreign language programs. Studying English in China, instead of studying English in a native-English country, lacks the lived experience of understanding linguistic subtleties (Anderson and Lawton 2011). Chinese institutions need to engage students, adapting programs and instruction to satisfy student goals in their English learning to offset strategic disadvantages. Although examination into English majors' satisfaction is limited, studies into Chinese student satisfaction have increased over the past few years.

Studies examining Chinese institutions' ability to serve students and improve satisfaction have been the focus of Fu, Zhang, and Li (2019), Li et al. (2017), Liu and Zhao (2018), Moslehpour et al. (2020) [Taiwan], Wong, Tong, and Wong (2016) [Hong Kong], and Zhuang, Cheung, and Tam (2020). Although all studies maintained different measures and objectives, similarities in the constructs examined do exist. Except for Wong, Tong, and Wong (2016), all measures evaluated the administration's influence on student satisfaction. Teaching quality or course delivery was additionally examined in all studies, except Fu, Zhang, and Li (2019). Constructs directly or indirectly assessed campus environment and student satisfaction were examined in Li et al.'s (2017) and Zhuang, Cheung, and Tam's (2020) studies. To offer reasonable comparisons to multiple studies incorporating varying measures, the inclusion of administration, campus environment, and course delivery determinants against student satisfaction would be ideal in a new measure's construction.

Administration

Educational administration consists of numerous elements that support students in achieving their desired goals throughout their entire academic lifecycle. Staff within the administrative offices offer a bridge between the institution and the student, providing guidance in programs, assistance with academic and non-academic issues, and supporting students' overall mental health. The administration often deals with students vulnerable to attrition; thus, competent and

knowledgeable staff must be easily accessible to students in critical areas. Findings by Li et al. (2017), Liu and Zhao (2018), Moslehpour et al. (2020), and Zhuang, Cheung, and Tam (2020) all indicate that administration is significantly associated with student satisfaction, with correlations ranging from 0.573 to 0.895. Fu, Zhang, and Li's (2019) findings opposed the previous studies, determining that accessibility to a mentor or support was positively correlated to student satisfaction with $r = 0.18$ but had $\beta = -0.104$, meaning there was a negative influence toward satisfaction. Fu, Zhang, and Li (2019) unfortunately did not examine why the discrepancy existed. Based on previous research, this study hypothesizes the following:

H1: Administration will have a significantly positive impact on student satisfaction.

Campus Environment

The campus environment consists of conditions beyond the academic environment, impacting the students' daily lives. As most Chinese students live on campus, their environment can influence their overall satisfaction with their university experience. The environment variable is vague, leaving researchers to examine different elements of perceived influence on satisfaction. Li et al. (2017) provided a detailed examination of the campus environment through multiple constructs, including school life, surrounding area, and urban environment. School life was associated with canteens and entertainment, the surrounding area investigated area convenience, and the urban environment focused on safety and security. All determinants were significantly correlated to satisfaction $r = 0.805$ to 0.945. Zhuang, Cheung, and Tam's (2020) resources and services determinant assessed non-academic campus offerings, such as library resources, medical support, and shopping needs. Findings indicated that this construct was significantly influential on program satisfaction; however, it was not significant in course satisfaction. Based on solid evidence from Li et al. (2017), this study hypothesizes the following:

H2: Campus environment will have a significantly positive impact on student satisfaction.

Course Delivery

Course delivery is directly associated with instruction, curriculum, in-class environment, assessment, and feedback. As the primary function for students is to participate in a learning environment, the delivery of that content is critical. Students with difficulties adapting to in-class demands and instruction are more likely to face increased stress and performance-related anxiety. Li et al. (2017) determined school learning (teaching, curriculum, and facilities) as the most decisive predictor of student satisfaction at $r = 0.953$. Liu and Zhao's (2018) multi-variable instructional construct represented $\beta = 0.412$, showing a persuasive influence on satisfaction. Individual variables within the construct showed significant correlations with satisfaction; course quality $r = 0.711/0.832$, teaching organization $r = 0.719/0.839$, and evaluation $r = 0.624/0.639$ (low/high performing students). Moslehpour et al. (2020) determined that academic conditions significantly influenced satisfaction at $\beta = 0.4$, while Zhuang, Cheung, and Tam (2020) determined that instruction impacts course satisfaction ($\beta = 0.38$). Based on previous research, this study hypothesizes the following:

H3: Course delivery will have a significantly positive impact on student satisfaction.

Methodology

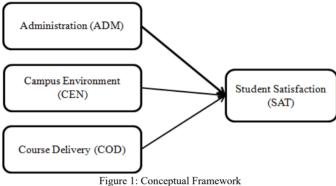### *Research Design and Conceptual Model*

This study utilized an explanatory quantitative design to examine service quality determinants' influence on English majors' satisfaction. As this study seeks to determine the relationship between numerous variables, Borrego, Douglas, and Amelink (2009) suggested that quantitative methods are desirable to ensure precise and transparent findings for complex multi-dimensioned tests. A conceptual framework was developed, based on previous literature, to address the study's objectives and test the associated hypotheses. The conceptual framework indicates that this study's independent variables are administration, campus environment, and course delivery, while the dependent variable is student satisfaction (Figure 1).

Figure 1: Conceptual Framework
Source: Scott and Guan

Sample

The study invited all current undergraduate students enrolled in the English program at a southern Chinese university during the 2020/2021 academic year. Based on the formula outlined by Latip, Newaz, and Ramasamy (2020), the minimum sample size required is determined as follows:

$$SS = \frac{Z^2 * p * (1-p)}{c^2}$$

Where:
SS = Sample size
Z^2 = Normal distribution level for 95% confidence
p = Probability of questionnaire response (minimum threshold of 50%)
c^2 = Significance level
SS = (1.96^2)*0.5*(0.5)/(0.05^2) = 384

Three hundred eighty-four respondents would be required to maintain a confidence level of 95 percent. A total of 898 questionnaires were distributed utilizing a non-probability convenience sampling approach. A total of 644 responses were received, after excluding 29 responses; 615 questionnaires were accepted as valid for a 68.5 percent accepted response rate. This study's response rate corresponds with previous studies of similar structure (Ali et al. 2016; Osman and Saputra 2019; Osman et al. 2020; Wong, Tong, and Wong 2016) and exceeds minimum response thresholds proposed by Schutt (2018) of 60 percent and Babbie (1990) of 50 percent to ensure results are not influenced by nonresponse bias.

Instrument

A structured questionnaire initially comprising of twenty-nine items was constructed utilizing several studies. The preliminary questionnaire consisted of two demographic questions: the respondents' gender and year of study and twenty-seven items examining three dependent variables and one independent variable. Administration comprised eight items based on Abdullah's (2005) and Nasser, Khoury, and Abouchedid's (2008) studies. Campus environment incorporated six items from Abdullah (2005) and Wilkins and Balakrishnan (2013). Course delivery contained a total of eight items from Abdullah (2006), Wilkins and Balakrishnan (2013), and Yusoff, McLeay, and Woodruffe-Burton (2015). The independent variable of student satisfaction is comprised of five items based on elements of Wilkins and Balakrishnan (2013). Items originating from previous studies were slightly modified to better reflect the environment being examined, namely English majors based in a Chinese university. A five-point Likert scale was used to measure all items related to the dependent and independent variables, ranging from 1 (strongly disagree) to 5 (strongly agree), while the two demographic questions were designed as multiple choice. All questionnaire items were translated from English to the target language of Chinese to ensure respondent understanding, using the back-translation method. Brislin (1970) and Liu (2002) maintain that back-translation is vital in verifying that intended translations maintain the researcher's originally designed meaning, ensuring response reliability.

Instrument Distribution and Collection

All questionnaires were distributed electronically to potential respondents via the WeChat messaging application. Students were provided a link to the translated questionnaire that limited responses to one per student. No personal information was collected, and students were provided an option not to take part in the study. Potential respondents were also informed that the study was not funded or sponsored by their university, and the researcher will use the information for academic purposes. To agree to participate in the study, students must click an accept button before proceeding to the questionnaire items. Collected data was uploaded and analyzed using the SPSS version 26 software.

Pretesting and Feasibility Studies

The initial questionnaire, including the twenty-nine constructed items, was presented to both experts and identified respondents (students) to ensure items were relevant, comprehensive, and appropriately translated to the target language. To ensure study objectives and questions are interpreted similarly between researchers' intent and respondent understanding, Converse and Presser (1986) strongly recommend an emphasis on pre-testing the developed instrument to reduce problematic areas. Four academics and ten identified respondents were asked for their feedback regarding clarity, appropriateness, design, and language. Feedback was provided through written notes and the personal debriefing method outlined by Hunt, Sparkman, and Wilcox (1982). Expert feedback identified two items in the administrative construct and one item in course delivery that a homogeneous interpretation could be made with another item. Items "administrative staff maintained my privacy when I disclosed personal information to them" and "student support services are available to help me with personal issues" are similar to the item "administrative staff deal with issues and complaints professionally." Experts identified "instructors use language that I understand" as vague and similarly focused on other items within the course delivery variable. Half of the pre-test group questioned the appropriateness of an item within the campus environment section, "public transportation is readily accessible," stating that the importance of public transportation within that area has greatly diminished and is not directly related to campus environment in current terms due to the

preference of students to use car-sharing services. Feedback from both groups recommended some slight alterations to translation to eliminate ambiguousness in word choice. The study's instrument was adjusted based on feedback, eliminating four total items—two from administration, one from both course delivery, and the campus environment.

A pilot test was conducted, testing the study's feasibility and appropriateness of independent and dependent variable construction. The pilot test examined third-year English majors from a neighboring college, distributing ninety-eight questionnaires and receiving sixty-five back for a response rate of 66 percent. While pilot testing often follows Browne's (1995) benchmarking of thirty respondents for pilot sampling, this study incorporated Sim and Lewis' (2012) argument that feasibility studies should secure the appropriate statistical power to align with the overall study goals, recommending that pilot tests exceed fifty-five respondents to determine efficiency. According to Sim and Lewis' (2012) and Babbie's (1990) guidelines, three classes were selected to ensure that the desired number of responses were received. Responses initially indicated statistical appropriateness through Cronbach's Alpha ($\alpha = 0.932$) and Kaiser-Meyer-Olkin Measure of Sampling (KMO = 0.894). However, principal component analysis (PCA) with varimax rotation indicated that three items, "the institution is located in a great geographical location," "instructors have the knowledge to answer my questions related to the course content," and "I think I did the right thing when I chose to study at this university," failed to reach 0.4-factor loading on their respective construct. Incorporating Steven's (2009) criteria, later collaborated by Maskey, Fei, and Nguyen (2018), factor loadings less than 0.4 should be suppressed to improve validity. With the three items removed, the final instrument designed consisted of twenty-two total items. Demographic information consisted of two items, six items for both administration and course delivery, four items for campus environment, and the dependent variable, student satisfaction. Table 1 presents the study's questionnaire items, corresponding constructs, and origin of the questions.

Data Analysis and Results

Demographic Profile

The study's respondents' demographic profile showed that females represented 86.5 percent, and males equated to 13.5 percent. A breakdown of responses by year of study indicated that 31.1 percent were in their first year of study, 35.8 percent in their second year, 16.3 percent in their third year, with the remaining 16.9 percent in their fourth year (Table 2).

Normality of Variables

Studies often assume that non-probability samples from populations are normally distributed when constructing their statistical analysis (Ghasemi and Zahediasl 2012). Although this assumption is incorrect, Öztuna, Elhan, and Tüccar (2006) concluded that large samples that incorrectly assume normality would not create significant discrepancies within their findings, reducing potential misrepresentation of data and its overall significance with construct variables were tested by skewness and kurtosis. The range of acceptability for skewness and kurtosis differs considerably between researchers; Curran, West, and Finch (1996) state that for normality, skewness should fall between ±2 and kurtosis ±7. George and Mallery (2020) and Gravetter et al. (2020) argue that skewness and kurtosis results between ±2 are acceptable and ±1 are considered excellent. To satisfy all interpretations, the lowest acceptable range of ±2 will be considered normally distributed. The skewness for all constructs ranges from -0.354 to -0.173, equating to a slight left-skewing distribution. The values of kurtosis range from 0.093 to 0.411, presenting a relatively symmetric distribution. The construct skewness and kurtosis values fall between the acceptable ranges of ±2; thus, they have a sufficiently normal distribution (Table 3).

Table 1: Questionnaire Items

Construct	Identifier	Item	Item's Origin
Administration	ADM1	Administrative staff are interested in my academic process.	Nasser, Khoury, and Abouchedid (2008)
	ADM2	When the administrative staff promises to do something, they do it.	Abdullah (2006)
	ADM3	Administrative staff are knowledgeable of program needs.	Nasser, Khoury, and Abouchedid (2008)
	ADM4	Administrative staff deal with issues and complaints professionally.	Original Design
	ADM5	Administrative staff are never too busy to respond to a request for help.	Abdullah (2006)
	ADM6	Administrative staff ensure that they are easily contacted by telephone or messenger.	Abdullah (2006)
Campus Environment	CEN1	The institutions have a lot of clubs and groups for students.	Wilkins and Balakrishnan (2013)
	CEN2	The food and drinks available in the canteen are adequate.	Original Design
	CEN3	The institution has an adequate amount of quiet space available for studies.	Nasser, Khoury, and Abouchedid (2008)
	CEN4	I feel safe and secure on campus.	Abdullah (2006)
Course Delivery	COD1	Instructors are prepared for each lesson.	Original Design
	COD2	Instructors use software effectively in their teachings.	Wilkins and Balakrishnan (2013)
	COD3	Instructors are approachable	Yusoff, McLeary, and Woodruffe-Burton (2015)
	COD4	Instructors are always willing to provide feedback.	Original Design
	COD5	Instructors provide opportunities for me to speak.	Original Design
	COD6	Instructors make the lessons interesting.	Wilkins and Balakrishnan (2013)
Satisfaction	SAT1	I would recommend my institution to a friend or family.	Wilkins and Balakrishnan (2013)
	SAT2	I have enjoyed my experiences at my institution.	Original Design
	SAT3	I am satisfied with my major.	Original Design
	SAT4	Overall, I am satisfied with my institution.	Original Design

Source: Scott and Guan

Table 2: Demographic Information of Respondents

Variable	Categories	Frequency	Percent
Gender	Female	532	86.5
	Male	83	13.5
Year of Study	First-Year	191	31.1
	Second-Year	220	35.8
	Third-Year	100	16.3
	Fourth-Year	104	16.9

Source: Scott and Guan

Table 3: Construct Distribution

Construct	N	Mean±SD[a]	Mean±SEM[a]	Skewness	$SE_{skewness}$	Kurtosis	$SE_{kurtosis}$
Administration	615	3.72±0.56	3.72±0.02	-0.354	0.099	0.229	0.197
Campus Environment	615	3.82±0.60	3.82±0.02	-0.249	0.099	0.108	0.197
Course Delivery	615	3.91±0.56	3.91±0.02	-0.197	0.099	0.093	0.197
Satisfaction	615	3.48±0.65	3.48±0.03	-0.173	0.099	0.411	0.197

[a]Abbreviations: SD = standard deviation; SEM = standard error of mean
Source: Scott and Guan

Reliability and Validity Testing

Cronbach's Alpha was utilized for each construct and the overall study to determine the instrument's internal consistency and ensure the question quality. Acceptability for Cronbach's Alpha is benchmarked at 0.7 for consistency. The construct variables ranged from α = 0.82 to

0.905, with the overall instrument having a Cronbach Alpha equaling 0.936. The KMO test measures the suitability of the obtained response data for factor analysis. Kaiser (1974) indicated that KMO > 0.7 is considered moderately acceptable, 0.8 to 0.9 is considered great, while KMO > 0.9 is considered marvelous. However, Hair et al. (2019) determined that KMO > 0.5 would be sufficient for factor analysis. The construct variables' KMOs ranged from 0.732 to 0.849, indicating moderate to great suitability under Kaiser's criteria, while the entire instrument produced KMO = 0.926 or classification of marvelous suitability. Bartlett's Test of Sphericity is a null hypothesis test examining the orthogonality of the construct variables. Results indicate that all constructs and overall study are significant at $p < 0.001$, thus rejecting Bartlett's null hypothesis and indicating suitability for factor analysis (Table 4).

Table 4: Instrument Suitability Measurements

	Mean	SD[a]	Eigen Value	% Variance	Cronbach Alpha	KMO[a]	Bartlett's Test
Administration	3.72	0.56					
ADM1	3.89	0.76					
ADM2	3.66	0.83					
ADM3	3.67	0.85	9.239	46.196	0.82	0.805	0.001
ADM4	3.95	0.71					
ADM5	3.43	0.73					
ADM6	3.74	0.71					
Campus Environment	3.82	0.60					
CEN1	3.78	0.68					
CEN2	3.80	0.71	1.869	9.346	0.861	0.732	0.001
CEN3	3.75	0.78					
CEN4	3.95	0.71					
Course Delivery	3.91	0.56					
COD1	3.80	0.75					
COD2	4.00	0.70					
COD3	3.99	0.62	1.498	7.488	0.905	0.849	0.001
COD4	3.92	0.67					
COD5	4.08	0.63					
COD6	3.70	0.73					
Satisfaction	3.48	0.65					
SAT1	3.42	0.76					
SAT2	3.24	0.85	1.191	5.957	0.871	0.782	0.001
SAT3	3.63	0.74					
SAT4	3.65	0.71					
Total Study	3.75	0.52	13.797	68.986	0.936	0.926	0.001

[a]Abbreviations: SD = standard deviation; KMO = Kaiser-Meyer-Olkin Test

Source: Scott and Guan

An examination of common method variance (CMV) was undertaken to determine whether the instruments' measures indirectly influenced responses. Hair et al. (2019) referred to common-method bias as an unintended consequence of researchers incorporating a single survey method to obtain the entire samples' response. As CMV can impact the study's internal consistency and correlation among variables, determining the likelihood of bias is necessary to ensure reliability. Attempts to mitigate CMV through the instrument design process and provide respondent confidentiality were performed in a pre-test and a post hoc CMV test utilizing Harman's single-factor was performed. Although Podsakoff et al. (2003) noted that Harman's one-factor test does not partial out method effects or reduce bias, Harman's single-factor test still provides the appropriate indicators to determine if statistical intervention is needed. An unrotated unadjusted single-loading factor represented 46.2 percent of all variance in this study, indicating common method bias likelihood is limited, as it accounts for less than the majority (50%) of covariance (Harman 1976). The total explained variances represent 69 percent, indicating satisfactory model integration (Hair et al. 2019).

Table 5: Convergent and Discriminant Validity Tests
(Factor Loading, CR, AVE, MSV, and ASV)

	Factor Loadings	CR[a]	AVE[a]	MSV[a]	ASV[a]
Administration					
ADM1	0.756				
ADM2	0.761				
ADM3	0.704	0.878	0.546	0.465	0.402
ADM4	0.675				
ADM5	0.719				
ADM6	0.812				
Campus Environment					
CEN1	0.789				
CEN2	0.770	0.824	0.541	0.424	0.361
CEN3	0.733				
CEN4	0.641				
Course Delivery					
COD1	0.685				
COD2	0.743				
COD3	0.746	0.871	0.531	0.424	0.380
COD4	0.776				
COD5	0.792				
COD6	0.617				
Satisfaction					
SAT1	0.744				
SAT2	0.807	0.840	0.568	0.364	0.300
SAT3	0.710				
SAT4	0.749				

[a]Abbreviations: CR = composite reliability; AVE = average variance extracted;
MSV = maximum share variance; ASV = average shared variance
Source: Scott and Guan

Convergent validity within the model was assessed through factor loadings, composite reliability (CR), and average variance extracted (AVE). Table 5 shows that all factor loadings exceed the minimum recommended threshold by Stevens (2009) and Maskey, Fei, and Nguyen (2018), ranging from 0.617 to 0.812. CR values indicate shared variance among constructs to gauge a latent construct. It is recommended that CR should exceed 0.7 (Hair et al. 2019); however, CR over 0.9 may indicate item redundancy as they potentially measure the same phenomenon (Hair et al. 2017). The CR for this study's constructs ranges from 0.824 to 0.878, falling in the acceptable ranges. AVE similarly examines variance as an indicator of a latent construct but prioritizes the overall variance; AVE > 0.5 is identified as adequate (Hair et al. 2019). All constructs exceed AVE > 0.5, with ranges of 0.531 to 0.568; thus, this study's observed constructs are adequately convergent.

Discriminant validity was analyzed through maximum shared variance (MSV), average shared variance (ASV), Fornell-Larcker criterion for discriminant validity, and cross-factor analysis. Discriminant validity can be defined as AVE > MSV > ASV (Hair et al. 2019), whereas each construct's AVE must exceed 0.5 and be greater than the construct's MSV, while MSV concurrently must exceed ASV values. Table 5 indicates that all constructs meet these requirements, providing evidence that constructs are statistically independent of one another. Fornell-Larcker's Criterion similarly tests model constructs to ensure independence. Fornell-Lacker's Criterion measures the model by the square root of AVE against other observed constructs' correlations. Square rooted AVEs must be greater than observed correlations to ensure construct independence (Fornell and Larcker 1981).

Table 6: Discriminant Validity with Fornell-Larcker Criterion

Constructs	Administration	Campus Environment	Course Delivery	Satisfaction
Administration	***0.739***			
Campus Environment	0.682	***0.736***		
Course Delivery	0.613	0.651	***0.729***	
Satisfaction	0.603	0.441	0.583	***0.753***

Note: Diagonal elements are AVE square root (shown in bold and italic)

Source: Scott and Guan

Table 6 presents Fornell-Lacker's Criterion against correlations, revealing figures that meet the requirements for discriminant validity. Cross-loading factor analysis compares each item's impact on other constructs, while acceptable ranges vary among researchers; Hair et al. (2019) recommend that the items' loadings have a difference greater than 0.2 compared to the assigned construct. Table 7 displays all item loadings across all constructs, with bold indicating the item's assigned construct. No item has a cross-loading value difference smaller than 0.2, indicating acceptable separation.

Structural Model Test

The study incorporated Tenenhaus et al.'s (2005) Goodness of Fit (GoF) index to analyze model fit. The GoF index takes both measurement and structural model operations into account, measuring the average score of R^2 and the average communality index. The GoF equation is represented as $GoF = \sqrt{AVE \ast R^2}$. The GoF index results are benchmarked as $GoF < 0.1$ equals no fit, $GoF \geq 0.1$ equals small fit, $GoF \geq 0.25$ equals medium fit, and $GoF \geq 0.36$ equals large fit (Hoffman and Birnbrich 2012). The model utilized in this study had $GoF = 0.492$, which indicates an excellent fit (Table 8). The R^2 (adjusted) value identified in Table 8 represents the model's explanatory power of independent variables (administration, campus environment, course delivery) on the dependent construct (student satisfaction). The study's standardized beta coefficients and t-values were examined to determine if the relationships hypothesized by the researcher were adequate. Falk and Miller (1992) considered R^2 (adjusted) ≥ 0.1 adequate, while Cohen (1988) designed $R^2 \geq 0.02$ as weak, $R^2 \geq 0.13$ as moderate, and $R^2 \geq 0.26$ as substantial. Under Cohen's criteria for R^2, this study's model's explanatory power would be considered substantial with $R^2 = 0.442$.

Table 7: Cross-Factor Loading

Items	Constructs			
	1	2	3	4
Administration (ADM)				
ADM1	0.142	***0.756***	0.144	0.214
ADM2	0.117	***0.761***	0.273	0.166
ADM3	0.201	***0.704***	0.280	0.201
ADM4	0.357	***0.675***	0.136	0.190
ADM5	0.046	***0.719***	0.303	0.115
ADM6	0.189	***0.812***	0.181	0.207
Campus Environment (CEN)				
CEN1	0.265	0.182	0.200	***0.789***
CEN2	0.306	0.235	0.239	***0.770***
CEN3	0.376	0.141	-0.065	***0.733***
CEN4	0.395	0.233	-0.036	***0.641***
Course Delivery (COD)				
COD1	***0.685***	0.149	0.274	0.222
COD2	***0.743***	0.314	0.080	0.248
COD3	***0.746***	0.205	0.266	0.232
COD4	***0.776***	0.109	0.310	0.238
COD5	***0.792***	0.215	0.123	0.210
COD6	***0.617***	0.041	0.373	0.192

Items	Constructs			
	1	2	3	4
Student Satisfaction (SAT)				
SAT1	0.253	0.127	***0.744***	0.143
SAT2	0.100	0.175	***0.807***	0.169
SAT3	0.276	0.338	***0.710***	0.149
SAT4	0.253	0.334	***0.749***	0.144

Note: Assigned constructs are in bold and italic; Extraction Method = Principal Component Analysis;
Rotation Method = Varimax with Kaiser Normalization.
Source: Scott and Guan

Table 8: The Goodness of Fit (GoF) Index

Construct	*AVE*[a]		*R²*
Administration	0.546		-
Campus Environment	0.541		-
Course Design	0.531		-
Satisfaction	0.568		0.442
Average Score	0.547		0.442
AVE*R²		0.242	
GOF = √AVE*R²		0.492	

[a]Abbreviations = AVE, average variance extracted
Source: Scott and Guan

To ascertain the model's predictive relevance, Q^2 was analyzed under Chin's (2010) criteria. Q^2 was determined through cross-validation redundancy, with $Q^2 > 0$ representing the model's predictive relevance (Chin 2010). With the model's $Q^2 = 0.051$, acceptable predictive relevance was obtained (Table 9). Relative effect size (f^2) was calculated under Cohen's (1988) designed criteria; Cohen assessed $f^2 < 0.02$ as no effect, $f^2 \geq 0.02$ as small effect, $f^2 \geq 0.15$ indicates medium effect, and $f^2 \geq 0.35$ presents large effect. Table 8 shows that the campus environment has a negligible effect on student satisfaction ($f^2 = 0.01$), course design has a small-medium effect ($f^2 = 0.138$), and the administration has a medium effect on satisfaction ($f^2 = 0.178$).

Table 9: Predictive Relevance and Effect Size

Construct	Q^2	f^2	Interpretation
Administration	-	0.179	Medium Effect
Campus Environment	-	0.01	Negligible Effect-Small
Course Design	-	0.138	Small-Medium Effect
Satisfaction	0.051	-	Acceptable Predictive Relevance

Source: Scott and Guan

Table 10: Hypotheses Testing

Hypotheses	Standard Beta (β)	Standard Error	t-Value	Decision
H1: Administration → Satisfaction	0.443	0.0434	10.215**	Supported
H2: Campus Environment → Satisfaction	0.111	0.0452	2.464*	Supported
H3: Course Design → Satisfaction	0.383	0.0418	9.166**	Supported

Note: * $p < 0.05$; ** $p < 0.001$
Source: Scott and Guan

Hypotheses Testing

Standardized beta coefficients and the corresponding t-values were calculated (Table 10) to test the study's hypothesized relationships. H1 hypothesized that administration positively impacted student satisfaction, with β = 0.443 and t = 10.215, which was significant at $p < 0.001$, supporting H1. H2 hypothesized that the campus environment had a positive impact on student satisfaction. Testing determined β = 0.111 and t = 2.464 with significance at $p < 0.05$, supporting H2. H3 hypothesized that course design positively impacted student satisfaction. Course design impact on

143

satisfaction resulted in $\beta = 0.383$ and $t = 9.166$ with significance at $p < 0.001$; H3 is supported. These results indicate that English majors that positively view the university's administration, campus environment, and course design have higher satisfaction levels.

Discussion

Population and Sample Distribution

Initial inspection of gender distribution in responses indicates a strong female-skewing in the study's population, raising issues about ineffective sampling methods. Previous studies examining Chinese English university students maintained similar distribution, with Xie (2016) at 88 percent, Xie (2019) at 75 percent, and Zhou and Intaraprasert's (2015) sample consisting of 91 percent female respondents. In examining the total gender distribution within the targeted university, first to fourth-year female English majors accounted for 84.3 percent of the total population or n = 757. A per-year examination indicates a marginal improvement of the gender division in the 2020 cohort, with females 'only' representing 80 percent of the enrolled students. Although a gender skewing exists within the study, the respondent profile accurately reflects the entire population. The respondent profile also indicates students' clustering in the first and second years; this reflects a targeted university's strategic policy before the 2019/2020 academic year's registration. Total student enrollment in the English language program expanded from 133 students (2017 cohort) to 278 students (2020 cohort), resulting in a 109 percent increase over the past four years. The study population cluster presented a difference of 104 respondents (2017 cohort) to 191 (2020 cohort), aligning with the recruitment increases, signaling the suitability of the study's respondent profile to the population's demographic profile.

Administration

Findings within this study have supported H1, indicating that administration has an impact on student satisfaction. This study supports findings from Li et al. (2017), Liu and Zhao (2018), Moslehpour et al. (2020), and Zhuang, Cheung, and Tam (2020), while countering Fu, Zhang, and Li (2019). Comparing the results of the three constructs, administration was the most significant at $\beta = 0.443$. It could be inferred that an increased emphasis on support programs and increased availability and accessibility of knowledgeable academic advisors by the university will further promote growth. While each item within the administrative construct had a $\mu > 3$, indicating overall happiness with institutional performance, response time performed the worst $\mu = 3.43 \pm 0.73$. As the university promotes a strategic policy to increase the English program registration, students' increasing flux against the current academic advisor availability may signal future issues. The university can improve this result and prevent potential issues by ensuring a reasonable advisor-to-student ratio; this will assist with personalizing staff's responses and availability. Cook (2009) indicated that newly enrolled students face increasing challenges; these require consistently updated and revised approaches to meet their needs. As administration is strongly correlated with student satisfaction, considerable emphasis needs to ensure that staff is trained appropriately to meet incoming student needs while providing empathetic support.

Campus Environment

Campus environment significantly impacts student satisfaction at $p < 0.05$, supporting H2; however, with $\beta = 0.111$ and a negligible effect on overall student satisfaction, the importance is somewhat muted compared to the other constructs. Studies by Li et al. (2017) and Zhuang, Cheung, and Tam (2020) indicated a correlation between environment and satisfaction, supporting this study's findings. While significance was indicated at $p < 0.05$ in this study, the relatively weak effect overall on satisfaction follows Zhuang, Cheung, and Tam's (2020) outcomes a little closer. A significant factor for the decreased emphasis on campus environment is likely due to the pandemic and the substantial amount of time both first- and second-year students were off-campus learning remotely. Although

older students, i.e., third and fourth year, had experiences on campus, their recent experiences likely influence current satisfaction levels. Elliott and Healy (2001) defined student satisfaction as a short-term attitude derived from student experiences through an individual subjective lens. As respondents have just returned to the physical classroom, their limited experience on campus and the diminished extracurricular activities due to COVID-19 protocols likely influenced the campus environment's significance. Although university budgets may not prioritize improving the campus situation currently, allowing conditions to degrade will likely impact satisfaction more in the future. Institutions can budget to maintain current accommodation and canteen facilities' standards in the current educational landscape; however, budget increases would likely be needed to promote services as campus living returns to relatively normal.

Course Design

The course design was significantly influential on overall student satisfaction, supporting H3. This study confirms findings by Li et al. (2017), Liu and Zhao (2018), Moslehpour et al. (2020), and Zhuang, Cheung, and Tam (2020). Instructors' ability to present core content effectively while promoting a student-centric methodology influences student satisfaction to engage the material and class. As English majors must develop their communication skills to be effective in the workplace, allowing opportunities to speak or engage the instructor is crucial for their development. Although course delivery averaged the highest response with $\mu = 3.91 \pm 0.56$, Liu and Zhao (2018) cautioned that student expectations continue to grow; thus, institutions need to continuously assess and reform programs and course delivery to meet future demands. English departments need to build healthier communication with students and determine their target goals in their language development. As Chinese universities suffer from substantial turnover with their foreign faculty (Scott 2021), assessment and support are essential for quality delivery. Professional development programs need to be prioritized to build new instruction methods and incorporate additional tools and research in the classroom to remain competitive. Relying on existing strengths will eventually result in losses, as the classroom environment and its resources need to evolve continually.

Satisfaction

While findings support previous research regarding the identified dimensions and their influence on overall student satisfaction, some areas require further examination. What is concerning was the individual responses items in the student satisfaction variable. Overall satisfaction scored the lowest among all constructs with $\mu = 3.48 \pm 0.65$. A major red flag in overall institutional performance could be seen in SAT2 ("I have enjoyed my experiences at my institution"), with the lowest overall average at $\mu = 3.24 \pm 0.85$. This figure should be examined closely, as it shows that there are underlying latent variables that negatively influence student satisfaction. Though current conditions of prolonged virtual learning and reduced interaction with instructors and classmates may be the root of this issue, the institution needs to be vigilant with its policies to prevent further erosion. As students return to the classroom, the institutions, departments, advisors, and instructors need to be aware of the likely gaps. The prolonged absence of standardized classes will require an adjustment period beyond a semester, likely for the foreseeable future, to ensure growth occurs and students are satisfied with their learning experience.

Conclusion

With the Chinese government attempting to promote domestic higher education institutions as an affordable, safer, and reasonable alternative to overseas universities, Chinese institutions need to promote an environment that will satisfy student needs. This study's target university incorporated a strategic enrollment policy aligned with the Chinese national government's soft push to retain talent in areas prone to educational brain drain, like English. Thus, examining current conditions experienced by students in Chinese domestic studying English is essential in

determining if the Chinese government's long-term initiative is achievable. The current study examined the influence administration, campus environment, and course delivery has on English major satisfaction within a Chinese university. The results indicated that all proposed constructs significantly impacted overall student satisfaction, with a total impact of 44.2 percent or $R^2 = 0.442$. Administration and course delivery had a similar effect on satisfaction, while the campus environment dimension was less pronounced. Although H3 was supported, with the campus environment significantly impacting satisfaction, the overall effect was negligible. Current conditions can explain students' decreased emphasis on environmental conditions as the current and previous academic year has been marred by COVID-19 protocols limiting in-person learning. While results may influence administrators and budget boards to prioritize administration support through additional advisor hiring or instructors' training, a complete disregard for campus conditions is not advisable. With a slow return to the physical classroom and reducing regulations regarding group gatherings, campus life's relevance would likely become more influential in the student satisfaction equation. Various statistical methods tested the instrument developed in this study for design suitability. Results indicate that while this model is relatively small in size, it accurately reflects nearly 50 percent of the satisfaction experienced by students. Incorporating twenty-two total items reduces response time and potential respondent bias, allowing findings to be more accurate for the examined conditions.

Limitation of Study

This study examined students studying English at a single Chinese university. Although the respondents accurately reflect the entire population at this university, the results may not reflect all Chinese higher education institutions. While the researcher attempted to create a statistically accurate model, the inclusion of three dimensions influencing student satisfaction may not fully incorporate all dimensions that influence English major students. Potential expansion of the model could result in more generalizable results across departments and institutions.

Recommended Future Studies

International examination of student satisfaction has garnered significant interest; yet, with an increased government push in China to retain talent, understanding student expectations and perceptions becomes increasingly essential. The pandemic additionally creates new variables and dimensions to the student satisfaction area of analysis. Research can examine how students' perceptions have changed post-pandemic and their implications on higher education institutions. Expanding this study's model to other departments or institutions to compare results would determine generalizability and cross-comparability between findings.

REFERENCES

Abdullah, Firdaus. 2005. "HEdPERF Versus SERVPERF: The Quest for Ideal Measuring Instrument of Service Quality in Higher Education Sector." *Quality Assurance in Education* 13 (4): 305–328. https://doi.org/10.1108/09684880510626584.

Abdullah, Firdaus. 2006. "The Development of HEdPERF: A New Measuring Instrument of Service Quality for the Higher Education Sector." *International Journal of Consumer Studies* 30 (6): 569–581. https://doi.org/10.1111/j.1470-6431.2005.00480.x.

Ali, Faizan, Yuan Zhou, Kashif Hussain, Pradeep Kumar Nair, and Neethiahnanthan Ari Ragavan. 2016. "Does Higher Education Service Quality Effect Student Satisfaction, Image and Loyalty? A Study of International Students in Malaysian Public Universities." *Quality Assurance in Education* 24 (1): 70–94. https://doi.org/10.1108/QAE-02-2014-0008.

Anderson, Phillip H., and Leigh Lawton. 2011. "Intercultural Development: Study Abroad Vs. On-Campus Study." *Frontiers: Interdisciplinary Journal of Study Abroad* 21 (1): 86–106. https://doi.org/10.36366/frontiers.v21i1.305.

Arambewela, Rodney, and John Hall. 2009. "An Empirical Model of International Student Satisfaction." *Asia Pacific Journal of Marketing and Logistics* 21 (4): 555–569. https://doi.org/10.1108/13555850910997599.

Babbie, Earl. 1990. *Survey Research Methods*, 2nd ed. Belmont, CA: Wadsworth Publishing.

Bekkers, David. 2017. "China's Pursuit of Overseas Brains: The 1,000 Talent Policy." *Holland Innovation Network China*. https://www.rvo.nl/sites/default/files/2017/01/1000-Talents-Policy-Article.pdf.

Borrego, Maura, Elliot P. Douglas, and Catherine T. Amelink. 2009. "Quantitative, Qualitative, and Mixed Research Methods in Engineering Education." *Journal of Engineering Education* 98 (1): 53–66. https://doi.org/10.1002/j.2168-9830.2009.tb01005.x.

Brislin, Richard W. 1970. "Back-Translation for Cross-Cultural Research." *Journal of Cross-Cultural Psychology* 1 (3): 185–216. https://doi.org/10.1177/135910457000100301.

Browne, Richard H. 1995. "On the Use of a Pilot Sample for Sample Size Determination." *Statistics in Medicine* 14 (17): 1933–1940. https://doi.org/10.1002/sim.4780141709.

Chin, Wynne W. 2010. "How to Write Up and Report PLS Analyses." In *Handbook of Partial Least Squares: Concepts, Methods and Applications*, edited by Vincenzo E. Vinzi, Wynne W. Chin, Jörg Henseler, and Huiwen Wang, 655–690. Berlin: Springer.

Cohen, Jacob. 1988. *Statistical Power Analysis for the Behavioral Sciences*, 2nd ed. New York: Routledge.

Converse, Jean M., and Stanley Presser. 1986. *Survey Questions: Handcrafting the Standardized Questionnaire*. Beverly Hills, CA: Sage Publications.

Cook, Sandra. 2009. "Important Events in the Development of Academic Advising in the United States." *NACADA Journal* 29 (2): 18–40. https://doi.org/10.12930/0271-9517-29.2.18.

Coye, Ray W. 2004. "Managing Customer Expectations in the Service Encounter." *International Journal of Service Industry Management* 15 (1): 54–71. https://doi.org/10.1108/09564230410523330.

Cronin, J. Joseph, Jr., and Steven A. Taylor. 1992. "Measuring Service Quality: A Reexamination and Extension." *Journal of Marketing* 56 (3): 55–68. https://doi.org/10.2307/1252296.

Curran, Patrick J., Stephen G. West, and John F. Finch. 1996. "The Robustness of Test Statistics to Nonnormality and Specification Error in Confirmatory Factor Analysis." *Psychological Methods* 1 (1): 16–29. https://doi.org/10.1037/1082-989X.1.1.16.

Elliott, Kevin M., and Margaret A. Healy. 2001. "Key Factors Influencing Student Satisfaction Related to Recruitment and Retention." *Journal of Marketing for Higher Education* 10 (4): 1–11. https://doi.org/10.1300/j050v10n04_01.

Falk, R. Frank, and Nancy B. Miller. 1992. *A Primer of Soft Modeling*. Akron, OH: University of Akron Press.

Fornell, Claes, and David F. Larcker. 1981. "Evaluating Structural Equation Models with Unobservable Variables and Measurement Errors." *Journal of Marketing Research* 18 (1): 39–50. https://doi.org/10.1177%2F002224378101800104.

Fu, Mingchen, Li-Fang Zhang, and Bing Li. 2019. "Revisiting the Congruence-Satisfaction Relationship: The Role of External Forces." *Journal of Career Development* 46 (3): 203–218. https://doi.org/10.1177/0894845317737379.

George, Darren, and Paul Mallery. 2020. *IBM SPSS Statistics 26 Step by Step: A Simple Guide and Reference,* 16th ed. New York: Routledge.

Ghasemi, Asghar, and Salah Zahediasl. 2012. "Normality Tests for Statistical Analysis: A Guide for Non-statisticians." *International Journal of Endocrinology & Metabolism* 10 (2): 486–489. https://doi.org/10.5812/ijem.3505.

Gravetter, Frederick J., Larry B. Wallnau, Lori-Ann B. Forzano, and James E. Witnauer. 2020. *Essentials of Statistics for the Behavioral Sciences*, 10th ed. Boston, MA: Cengage Learning.

Guan, Wenyu. 2021. "English Program Service Quality and Student Satisfaction at a Southern Chinese University: An Empirical Study Utilizing an Important-Performance Analysis (IPA) Matrix." *Journal of Studies in Education* 11 (2): 32–61. http://doi.org/10.5296/jse.v11i2.18445.

Hair, Joseph F, Barry J. Babin, Rolph E. Anderson, and William C. Black. 2019. *Multivariate Data Analysis*, 8th ed. Boston, MA: Cengage Learning.

Hair, Joseph F., G. Tomas M. Hult, Christian M. Ringle, and Marko Sarstedt. 2017. *A Primer of Partial Least Squares Structural Equation Model (PLS-SEM)*, 2nd ed. Beverly Hills, CA: Sage Publications.

Harman, Harry H. 1976. *Modern Factor Analysis*, 3rd ed. Chicago, IL: University of Chicago Press.

Hoffman, Arvid O. I., and Cornelia Birnbrich. 2012. "The Impact of Fraud Prevention on Bank-Customer Relationships: An Empirical Investigation in Retail Banking." *International Journal of Bank Marketing* 30 (5): 390–407. https://doi.org/10.1108/02652321211247435.

Hou, Wenruo. 2001. "China's International Migration Policy." *Asian and Pacific Migration Journal* 10 (3/4): 485–503. https://doi.org/10.1177/011719680101000307.

Hovell, P. J., and P. G. P. Walters. 1972. "International Marketing Presentations: Some Options." *European Journal of Marketing* 6 (2): 69–79. https://doi.org/10.1108/eum0000000005126.

Hunt, Shelby D., Richard D. Sparkman Jr., and James B. Wilcox. 1982. "The Pre-test in Survey Research: Issues and Preliminary Findings." *Journal of Marketing Research* 19 (2): 269–273. https://doi.org/10.1177%2F002224378201900211.

Kaiser, Henry F. 1974. "An Index of Factor Simplicity." *Psychometrika* 39 (1): 31–36. https://jaltcue.org/files/articles/Kaiser1974_an_index_of_factorial_simplicity.pdf.

Kim, Hanna, and Ryan Michael Allen. 2018. "Glocalizing Cures for China's Brain Drain Ills: The Thousand Talents Plan in Shanghai, Tianjin, and Guangdong." *International Journal of Comparative Education and Development* 20 (1): 16–32. https://doi.org/10.1108/ijced-10-2017-0028.

Latip, Muhammad Safuan Abdul, Farhana Tahmida Newaz, and Ravindran Ramasamy. 2020. "Students' Perception of Lecturers' Competency and the Effect on Institutional Loyalty: The Mediating Role of Students' Satisfaction." *Asian Journal of University Education* 16 (2): 183–195. https://doi.org/10.24191/ajue.v16i2.9155

Li, Xin-Chao, Su-Jing Zhu, Joseph M. Thige, and Yun-Yu Shi. 2017. "Satisfaction with Overseas Education in China: A Survey on 44 Institutions of Higher Learning in Jiangsu Province." *Journal of Education and Practice* 8 (34): 163–184. https://www.iiste.org/Journals/index.php/JEP/article/view/40408.

Liu, C. Hui-Ju. 2002. "Translation of Instruments for Cross-Culture Research." *Journal of Da-Yeh University* 11 (2): 79–88. http://libwri.nhu.edu.tw:8081/Ejournal/AL01110208.pdf.

Liu, Jing-Lu, and Guo-Dong Zhao. 2018. "The Measurement and Determinants of Student Satisfaction of Education Informatization in Chinese Universities." In *Proceedings of the 2018 International Symposium on Education Technology*, 183–187. https://doi.org/10.1109/iset.2018.00048.

Maskey, Reenu, Jiangang Fei, and Hong-Oanh Nguyen. 2018. "Use of Exploratory Factor Analysis in Maritime Research." *Asian Journal of Shipping and Logistics* 34 (2): 91–111. https://doi.org/10.1016/j.ajsl.2018.06.006.

Moslehpour, Massoud, Ka Yin Chau, JingJing Zheng, Asalia Noor Hanjani, and Minh Hoang. 2020. "The Mediating Role of International Student Satisfaction in the Influence of Higher Education Service Quality on Institutional Reputation in Taiwan." *International Journal of Engineering Business Management* 12:1–16. https://doi.org/10.1177/1847979020971955.

Nasser, Ramzi N., Bechara Khoury, and Kamal Abouchedid. 2008. "University Students' Knowledge of Services and Programs in Relation to Satisfaction: A Case Study of a Private University in Lebanon." *Quality Assurance in Education* 16 (1): 80–97. https://doi.org/10.1108/09684880810848422.

Osman, Abu Rashed, Abu Saleh Sohel-Uz-Zaman, Mohammad Ali Ashraf, and Aslam Uddin. 2020. "Vindicating Service Quality of Education through Structural Equation Modeling (SEM): International Students' Perspective." *International Journal of Higher Education* 9 (3): 158–172. https://doi.org/10.5430/ijhe.v9n3p158.

Osman, Abu Rashed, and Ruswiati Surya Saputra. 2019. "A Pragmatic Model of Student Satisfaction: A Viewpoint of Private Higher Education." *Quality Assurance in Education* 27 (2): 142–165. https://doi.org/10.1108/QAE-05-2017-0019.

Öztuna, Derya, Atila Halil Elhan, and Ersöz Tüccar. 2006. "Investigation of Four Different Normality Tests in Terms of Type 1 Error Rate and Power under Different Distributions." *Turkish Journal of Medical Sciences* 36 (3): 171–176. https://journals.tubitak.gov.tr/medical/issues/sag-06-36-3/sag-36-3-7-0510-10.pdf.

Parasuraman, A., Valarie A. Zeithaml, and Leonard L. Berry. 1985. "A Conceptual Model of Service Quality and Its Implications for Future Research." *Journal of Marketing* 49 (4): 41–50. https://doi.org/10.1177/002224298504900403.

Podsakoff, Philip M., Scott B. MacKenzie, Jeong-Yeon Lee, and Nathan P. Podsakoff. 2003. "Common Method Biases in Behavioral Research: A Critical Review of the Literature and Recommended Remedies." *Journal of Applied Psychology*, 88 (5): 879–903. https://doi.org/10.1037/0021-9010.88.5.879.

Rose, Roslan Mohd, Haliza Mohd Said, and Gayatri d/o Anbalagan 2018. "What Does It Take to Retain Students in Higher Learning Institutions? A Case on a Malaysian University." *Asian Journal of Social Science Research* 1 (1). https://ajssr.unitar.my/doc/vol1i1/2109.pdf.

Schutt, Russell K. 2018. *Investigating the Social World: The Process and Practice of Research*, 9th ed. Beverly Hills, CA: Sage Publications.

Scott, Timothy, and Nathara Mhunpiew. 2021. "Impact of Government Policies and International Students on UK University Economic Stability." *International Education Studies* 14 (5): 1–7. http://doi.org/10.5539/ies.v14n5p1.

Scott, Timothy. 2021. "Higher Education's Marketization Impact on EFL Instructor Moral Stress, Identity, and Agency." *English Language Teaching* 14 (1): 99–106. https://doi.org/10.5539/elt.v14n1p99.

Seth, Nitin, S. G. Deshmukh, and Prem Vrat. 2005. "Service Quality Models: A Review." *International Journal of Quality & Reliability Management* 22 (9): 913–949. https://doi.org/10.1108/02656710510625211.

Sharif, Khurram, and Norizan Mohd Kassim. 2012. "Non-academic Service Quality: Comparative Analysis of Student and Faculty as Users." *Journal of Marketing for Higher Education* 22 (1): 35–54. https://doi.org/10.1080/08841241.2012.705793.

Sim, Julius, and Martyn Lewis. 2012. "The Size of a Pilot Study for a Clinical Trial Should be Calculated in Relation to Consideration of Precision and Efficiency." *Journal of Clinical Epidemiology* 65 (3): 301–308. https://doi.org/10.1016/j.jclinepi.2011.07.011.

Slaughter, Sheila, and Brendan Cantwell. 2012. "Transatlantic Moves to the Market: The United States and the European Union." *Higher Education* 63:583–606. https://doi.org/10.1007/s10734-011-9460-9.

Stevens, James P. 2009. *Applied Multivariate Statistics for The Social Sciences,* 5th ed. New York: Routledge.

Tang, Didi. 2016. "China Tries to End Brain Drain, Lure Foreign-Educated Talent." *Phys.org*, August 6, 2016. https://phys.org/news/2016-08-china-brain-lure-foreign-educated-talent.html.

Teeroovengadum, Viraiyan, T. J. Kamalanabhan, and Ashley Keshwar Seebaluck. 2016. "Measuring Service Quality in Higher Education: Development of a Hierarchical Model (HESQUAL)." *Quality Assurance in Education* 24 (2): 244–258. https://doi.org/10.1108/qae-06-2014-0028.

Tenenhaus, Michel, Vincenzo Esposito Vinzi, Yves-Marie Chatelin, and Carlo Lauro. 2005. "PLS Path Modeling." *Computational Statistics and Data Analysis* 48 (1): 159–205. https://doi.org/10.1016/j.csda.2004.03.005.

United Nations. n.d. "Global Flow of Tertiary-Level Students." *UNESCO*. Accessed April 3, 2021. http://uis.unesco.org/en/uis-student-flow.

Weerasinghe, I. M. S., and R. L. S. Fernando. 2018. "Critical Factors Affecting Students' Satisfaction with Higher Education in Sri Lanka." *Quality Assurance in Education* 26 (1): 115–130. https://doi.org/10.1108/qae-04-2017-0014.

Wilkins, Stephen, and Melodena Stephens Balakrishnan. 2013. "Assessing Student Satisfaction in Transnational Higher Education." *International Journal of Educational Management* 27 (2): 143–156. https://doi.org/10.1108/09513541311297568.

Wong, Anthony Tik Tsuen, Canon Tong, and Julianne Wai-Yin Wong. 2016. "The Relationship between Institution Branding, Teaching Quality and Student Satisfaction in Higher Education in Hong Kong." *Journal of Marketing and HR* 4 (1): 169–188. http://scitecresearch.com/journals/index.php/jmhr/article/view/910/650.

Xie, Jiafeng, and Hui Guo. 2010. "Study on the Evaluation Model of Student Satisfaction Based on Factor Analysis." In *Proceedings of the 2010 International Conference on Computational Intelligence and Software Engineering*, 1–4. https://doi.org/10.1109/cise.2010.5676748.

Xie, Qing. 2016. "Business Communication Needs of English Major Undergraduates and Curriculum Development in a Chinese University." *Asia-Pacific Education Researcher* 25 (4): 667–676. https://doi.org/10.1007/s40299-016-0296-z.

Xie, Qing. 2019. "Analyzing Professional English Learning Needs and Situations of Science and Language Majors in a Chinese University." *Higher Education Studies* 9 (2): 141–153. https://doi.org/10.5539/hes.v9n2p141.

Yusoff, Mazirah, Fraser McLeay, and Helen Woodruffe-Burton. 2015. "Dimensions Driving Business Student Satisfaction in Higher Education." *Quality Assurance in Education* 23 (1): 86–104. https://doi.org/10.1108/QAE-08-2013-0035.

Zhou, Chaoying, and Channarong Intaraprasert. 2015. "Language Learning Strategies Employed by Chinese English-Majors Pre-service Teachers in Relation to Gender and Personality Type." *English Language Teaching* 8 (1): 155–169. https://doi.org/10.5539/elt.v8n1p155.

Zhuang, Tengteng, Alan C. K. Cheung, and Winnie Tam. 2020. "Modeling Undergraduates STEM Students' Satisfaction with Their Programs in China: An Empirical Study." *Asia Pacific Education Review* 21:211–225. https://doi.org/10.1007/s12564-019-09620-1.

ABOUT THE AUTHORS

Timothy Scott: PhD Candidate, Graduate School of Human Sciences, Assumption University of Thailand, Bangkok, Thailand

Wenyu Guan: Lecturer, College of Foreign Languages, Guangdong Medical University-Dongguan Campus, Dongguan, Guangdong Province, China