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Influencing Factors of Students' Learning Gains in Tourism Education: An Empirical Study on 28 Tourism Colleges in China

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Abstract: The rapid development of tourism has put forward new requirements for the training of tourism talents. This study conducted a cross-regional questionnaire survey on tourism management undergraduate students from 28 tourism colleges in seven regions of China. PLS method was used to explore the relevant influencing factors of students' learning gain. The study concluded that: (1) Students' gain in professional knowledge reserve, learning ability, innovation ability, teamwork ability and social ethics have a significantly positive impact on students' employment situation. (2) Internship and employment guidance plays an important role in the influence of college investment on students' learning gain. (3) Student engagement plays an important mediating role in the relationship between teaching factors (such as learning curriculum and teachers' teaching quality) and students' learning gain. (4) The college's learning guidance and advice collection can effectively improve students' learning gain, but the impact of the college's environmental facilities on the sense of acquisition of tourism management students is not significant. This paper provides important implications for the improvement of talent mechanism of tourism education.

Keywords: students' learning gain; tourism colleges; student employment; internship and employment guidance; student engagement

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1. Introduction

Tourism and hospitality companies can only be as successful as the efficiency of their human resources [1]. Employees, especially frontline staff, are tasked with directly communicating with tourists and consumers [2], carrying corporate image [3], and are wellsprings of technological change and organizational progress [4]. Thus, employee quality ultimately decides organizational efficiency. The level of employee professional skills depends on the quality of training provided by the company [5] and the professional knowledge and skills provided during the employee's college education [6]. Within the tourism and hospitality industry, the rapid development (and its subsequent screeching halt brought about by the COVID-19 pandemic) forwarded new requirements for the training of new talents [7] such as the degree of high-tech skills [8]. Tourism education and training play an important role in providing qualified graduates [9]. However, higher education for tourism majors still face great challenges, and the general problem of low employment rate still exists [10]. Additionally, the low rate of job-matching of tourism management majors is a serious problem in the field of tourism education [11], therein being extremely detrimental to the high-quality development of the tourism industry as it reduces the creation of high-quality employees [12].

Students' learning gain is an important part of education quality research: it is an important factor used to evaluate students' learning effect. Recently, studies on students' learning gain have become increasing in various disciplines, with an increasing number of studies looking into the influencing factors of learning gain. Many factors affect learning gain such as evaluation feedback [13] and teaching techniques [14]. However, there remains to be a definite study on the learning gains of Chinese tourism students. Figuring out these learning gains would improve the training mechanism of Chinese tourism professionals to carry out in-depth investigation and research on students' learning gain.

Using data from 28 colleges in seven Chinese regions as samples and following the perspective of students, this study focuses on employment guidance and how student participation plays an intermediary role in influencing mechanism, explores the influence factors of tourism colleges undergraduate students' feeling. Furthermore, improvement strategies are forwarded for benchmarking of the promotion of mechanisms for tourism education personnel training. The following research questions are thus explored: (1) What are the influencing factors of undergraduate students' learning gain in tourism colleges in China?; (2) Is there a significant relationship between students' learning gain and their employment?; (3) Under the characteristics of tourism management, which is more practical, what role do student participation and internship and employment guidance play in improving students' learning gain?

2. Literature Review and Research Hypothesis

2.1. Student Employment Research

Recently, quality of students' employment is a key topic of higher education teaching research. University is the training base of high quality talents, with education quality being directly related to the quality of students' employment [15]. To test whether students acquiring the necessary skills and abilities through learning in college directly affects their employment situation, Luo and Zhao revealed that the introduction of big data analysis in school classroom education coupled by the reform of curriculum management significantly improves students' knowledge level and professional skills [16]. This can make students better follow the needs of the employment market, thus improving their overall employability. Students' knowledge enrichment, human capital accumulation, social capital accumulation and other learning acquisition while in undergraduate positively affect their employment quality. Additionally, information construction, teaching reform, and employment guidance of colleges and universities also promote high quality employment for students [17]. Hence, it is expected that students' theoretical knowledge and practical skills acquired in school will impact their employment quality. Hence, the following hypothesis is proposed:

Hypothesis 1 (H1). *Students' learning gain has a positive effect on students' employment situation.*

Moreover, the employment guidance provided by schools for students, such as internship guidance courses and practice opportunities, affect the employment situation of students. For example, Sibgatova et al. pointed out that the student employment guidance courses of the "school- enterprise" integrated system constructed by schools help improve the employment quality of students [18]. In the Internet era, the setting of career planning courses in colleges helps improve students' self-knowledge, tap their potential, constantly improve their ability to adapt to society, and promote high-quality employment [19]. Individualized vocational counseling promote students to find ideal jobs and improve the overall employment quality of students [20]. Yu et al. constructed an evaluation system of college students' employment guidance service and verified the promotion effect of college students' employment guidance courses and services on student employment quality [21].

However, some prior studies have examined whether college support can affect students' learning gains through internship and employment guidance, and then improve students' employment situation. For example, colleges usually understand students' em-

ployment needs and improve internship and employment guidance to promote students' learning gains and improve their employment situation. Hence, the current study aims to provide enlightenments to the relevant work of colleges. As such, the following research hypotheses are proposed.

Hypothesis 2a (H2a). *Internship and employment guidance has a positive impact on students' employment situation.*

Hypothesis 2b (H2b). *Internship and employment guidance has a positive impact on students' learning gain.*

Hypothesis 3 (H3). *College support has a significant impact on internship and employment guidance.*

Hypothesis 4a (H4a). *College support influences students' learning gain through the intermediary role of internship and employment guidance.*

Hypothesis 4b (H4b). *Internship employment guidance influences students' employment situation through the intermediary effect of students' learning gain.*

2.2. Research on Students' Learning Gain

Currently, there are various definitions of learning gains in the academic circle. Learning ability, employability and learning gains are usually defined as synonyms or similar words [22]. Academics in the UK focus on student learning gains and defined it as the difference in student performance between two stages of learning as a measure of a school's efforts to promote student learning [23]. Various scholars have also optimized the definition of learning gain to different degrees. McGrath et al. defined learning gain as a kind of "distance", emphasizing the comprehensive difference among students' skills, abilities, content knowledge, and personal development at two time points [23]. Garzón et al. applied learning harvest in AR teaching context and defined it as"the improvement of students' learning outcomes before and after the application of AR" [14]. In sum, students' learning gains are the result of comprehensive improvement of theory, emotion, value, ability and behavior. Hence, the current study defines students' learning gain as the positive experience and evaluation generated by students considering their benefits from education, which is ultimately the result of synchronized various factors.

The measurement of students' learning harvest is another focus in the field of education [24]. Some influencing factors involve teaching contents and methods, teaching environment and facilities, and students' participation in interaction [22]. Extant literature on students' learning gain and the influencing factors of students' learning gain mainly include two aspects: the college factor and the student's individual learning factor. The combination of students' individual learning and external environment impacts students' output. For example, Davis and Murrell emphasized the influence of student's own academic knowledge and practical experience on students' learning gain [25], while Mahan mainly focused on the relationship between campus relationship, school environment, and learning gain [26]. Thus, the current study chose college investment factor and individual learning factor for subsequent research and analysis.

2.2.1. College Investment Factor

Educational quality is mainly based on the college environment and various educational resources. For college students, environmental facilities, college support, and other factors may affect students' learning gain, with the number of teachers and the size of the school significantly affecting students' reading ability [27]. School facilities can further influence students' learning outcomes and promote further education [28,29]. Campus environment facilities such as libraries, school textbooks, and the availability of laboratory facilities also have a significantly positive impact on students' academic achievement [30].

Moreover, technology facilities have become pivotal factors. For instance, Achor and Ityobee conducted a mixed method survey of both teachers and students, showing that the completeness of communication technology facilities in schools significantly affect teachers' teaching quality and students' learning outcomes [31]. Hence, the intensity of college support and college environmental facilities may, expectedly, affect students' sense of acquisition. Therefore, the following research hypotheses are proposed.

Hypothesis 5 (H5). *College support has a positive impact on students' learning gain.*

Hypothesis 6 (H6). *College environmental facilities have a positive impact on students' learning gain.*

2.2.2. Students' Individual Learning Factor

The theory of "student engagement" holds that the education quality of a university mainly depends on whether or not it promotes students to engage into various activities better [32]. Various studies have outlined the important role of student engagement in students' learning gain. This effective combination of extra-curricular teaching activities and in-class teaching knowledge significantly stimulate students' willingness to participate in learning and improve their learning harvest [33]. By introducing games into the classroom, students' engagement in the classroom is greatly improved, therein greatly promoting students' absorption and understanding of the knowledge they have learned [34]. For instance, Manwaring et al. divided student engagement into two dimensions: emotional engagement and cognitive engagement. Results show that both of these two dimensions have positive impacts on students' learning effect [35]. Hence, it is expected that student participation plays an important role in improving students' leaning gains.

Teaching quality is the foundation of higher education; indicators such as teachers' teaching quality and students' curriculum design play important roles in stimulating students' individual participation and improving students' learning gain. The use of a single textbook and rigid teaching methods in the classroom greatly reduces students' understanding of the textbook, subsequently reducing students' learning gains [36]. Behle and Maher constructed the "Teaching Excellence" index system using British higher education as the research object. They found that teaching quality indicators such as curriculum design, course evaluation, and feedback are important in the overall index structure, significantly impacting students' learning harvest [37]. In German higher education, studies on the improvement of teaching quality significantly promotes students' learning gains [38]. Teachers' grade, teaching experience, and teaching skills reflect teachers' teaching quality [39]. More experienced teachers are good at evaluating students' learning through more comprehensive indicators other than academic performance, thus promoting students' learning gains [40]. Hence, it is expected that both teachers' teaching quality and school curriculum design will affect students' learning gain through student engagement. Thus, the present study paper will analyze the teaching factors into the individual students' learning system. As such, the following research hypotheses are proposed. Figure 1 shows the proposed model on student's learning gain.

Hypothesis 7 (H7). *Student engagement has a positive impact on students' learning gain.*

Hypothesis 8a (H8a). *Curriculum design has a positive impact on students' learning gain.*

Hypothesis 8b (H8b). *Curriculum design has a positive impact on student engagement.*

Hypothesis 9a (H9a). *Teachers' teaching quality has a positive impact on students' learning gain.*

Hypothesis 9b (H9b). *Teachers' teaching quality has a positive impact on student engagement.*

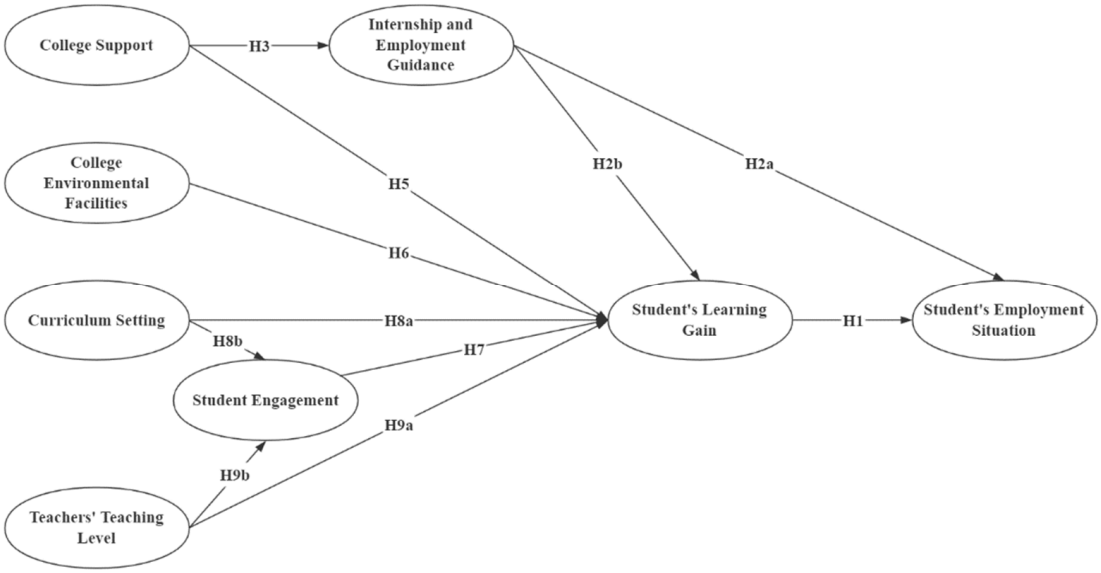


Figure 1. Proposed model on Student's Learning Gain.

Hypothesis 10a (H10a) *Curriculum design affects students' learning gain through the mediating effect of student engagement.*

Hypothesis 10b (H10b). *Teachers' teaching quality influences students' learning gain through the mediating effect of student engagement.*

3. Methodology

3.1. Questionnaire Design

According to the relevant research on students' learning gains and education quality, this study referred to the research results of Yi [41], Gao [42], and Liu [43], and combined with expert consultation to design a questionnaire survey. The questionnaire survey consists of two parts: the first part investigates the factors relating to students' learning gain. Latent variables were adopted to measure the following aspects: "students' learning gain", "students' employment situation", "students' engagement", "internship and employment guidance", "college environmental facilities", "college support", "curriculum design", and "teachers' teaching quality". A 5-point Likert scale was used to measure students' perception of each influencing factor, with numbers 1 to 5 representing strongly disagree, disagree, neutral, agree and strongly agree, respectively. The second part contains the demographic characteristics of respondents (e.g., gender).

3.2. Data Collection

The survey was distributed to Chinese undergraduate students majoring in tourism management. To make the sample more representative and universal, the present study divided the country into seven regions: east, south, north, central, southwest, northwest and northeast China. Four colleges with offering degrees in tourism management were randomly selected in each region, thus selecting 28 colleges in total. Questionnaires were distributed to undergraduate students of selected 28 colleges from 4 November to 24 December 2019. In total, 867 valid questionnaires were collected, while 27 invalid ones were removed, ultimately garnering 840 valid questionnaires reflecting an effectiveness rate of 96.89%. In the sample, 653 students were female (accounting for 77.7% of the respondents) and 187 students were male (accounting for 22.3% of the respondents), therein coinciding with the reality of the gender ratio of tourism management students.

3.3. Research Methods

Structural equation modeling (SEM) was adopted to explore the internal mechanism, that is, influencing factors of students' learning gain in tourism education, because SEM establishes, estimates, and tests causality models which contain both observable explicit variables and potentially unobstructed latent variables [44]. SEM has also been used in prior studies to clearly analyze the effects of single indicators on the overall population and the relationships among single indicators [45]. Partial least square (PLS), Smart PLS 3.0 and SPSS 25.0 were used for data analysis. PLS has no strict requirements on the normal distribution of data, and it is also applicable in the case of small samples [46]. It is mostly used in prediction and theoretical exploratory research; and has been widely used in the field of tourism and hotel management [47]. SPSS 25.0 software was first adopted to calculate Cronbach's α coefficient and basic statistics, delete unqualified items, and eliminate invalid questionnaires. Next, Smart PLS 3.0 software was used to test the reliability and validity of samples and the structural model with a variety of judgment indicators.

4. Results

4.1. Reliability and Validity

Standardized load estimate, Cronbach's α coefficient, Average variance extracted (AVE) and Combined reliability (CR) were mainly used by the reliability and validity tests as the evaluation indicators and modifiers of the latent variables. The revised parameter estimation results are shown in Table 1. Factor loads of each latent variable range from 0.726 to 0.910, all greater than 0.7; CR range from 0.866 to 0.923, all greater than 0.7; AVE range from 0.617 to 0.787, all greater than 0.5; Cronbach's α coefficient range from 0.774 to 0.895. All of them are greater than 0.7, indicating the reliability symbol standard of each latent variable. The items of the same variable have good convergence validity and the questionnaire has good internal consistency.

Table 1. Reliability and validity test of the scale.

Latent Variables	Measurement Items	Standardized Estimate	Cronbach's α	CR	AVE
Students' employment situation	ES1 I can be appreciated by my employer	0.892	0.864	0.917	0.787
	ES2 I can find a job that I am satisfied with	0.905			
	ES3 My job position will relate to my major position	0.863			
Students' learning gain	SG1 Through college study, my professional knowledge can support my work	0.791	0.895	0.923	0.705
	SG2 Through college study, I improved my learning ability	0.884			
	SG3 Through college study, I improved my innovation ability	0.847			
	SG4 Through college study, I improved my teamwork ability	0.854			
	SG5 Through college study, I improved my social morality	0.817			
Student engagement	SE1 I have the courage to ask profound questions in class	0.764	0.774	0.868	0.687
	SE2 Through discussion, teachers and students establish mutually stimulating partnerships	0.859			
	SE3 Teachers pay attention to communication and interaction with students	0.861			

Table 1. *Cont.*

Latent Variables	Measurement Items	Standardized Estimate	Cronbach's α	CR	AVE
Internship and employment guidance	EG1 The college has channels to let me know the employer's requirements for students	0.898	0.841	0.904	0.759
	EG2 The internship site conditions can meet my internship needs	0.833			
	EG3 The college recommended me for employment	0.880			
College support	CS1 The college often collects my opinions on the quality of education	0.872	0.860	0.915	0.781
	CS2 I can get enough guidance from the college in my studies	0.910			
	CS3 Students from different family backgrounds can receive positive guidance from the college	0.869			
College environmental Facilities	CF1 Sports and exercise facilities can meet my exercise needs	0.836	0.793	0.866	0.617
	CF2 The library and other learning facilities can effectively support my study	0.801			
	CF3 The hygiene of the school meals is to my satisfaction	0.776			
	CF4 Student dormitories are comfortable	0.726			
Curriculum design	CD1 The teaching courses can meet my need for professional knowledge	0.884	0.852	0.910	0.772
	CD2 The teaching content is advanced	0.879			
	CD3 The curriculum is conducive to promoting my identity of tourism major	0.873			
Teachers' teaching quality	TQ1 The teachers of specialized courses have the necessary professional knowledge	0.899	0.852	0.910	0.772
	TQ2 Teachers of specialized courses have practical working experience in their major	0.889			
	TQ3 As a result of the high standard of a certain teacher, I increased my study effort	0.847			

The discriminant validity analysis of the scale was mainly detected by comparing the square root AVE value of the latent variable with the correlation coefficient between each latent variable (Table 2). The second column on the left of the table shows the AVE value of each latent variable, the bold value is the square root of AVE, and the other values are the correlation coefficients of each latent variable. Here, the AVE square root value of each potential variable is greater than the correlation coefficient of each potential variable, indicating that each potential variable has good discriminant validity. Moreover, the complete collinearity test was also used to test common method variation and the variance inflation factor (VIF value) was found to be between 1.467 and 2.927, and all VIF values were less than 5, thus indicating that common method variation had no serious impact on data validity.

Table 2. The results of discriminant validity test.

	AVE	CD	SE	ES	SG	EG	TQ	CS	CF
CD	0.772	**0.879**							
SE	0.705	0.624	**0.829**						
ES	0.787	0.554	0.575	**0.887**					
SG	0.705	0.654	0.679	0.694	**0.839**				
EG	0.759	0.608	0.626	0.626	0.697	**0.871**			
TQ	0.772	0.598	0.692	0.486	0.629	0.505	**0.878**		
CS	0.781	0.597	0.649	0.587	0.702	0.75	0.543	**0.884**	
CF	0.617	0.502	0.547	0.508	0.577	0.678	0.442	0.628	**0.786**

4.2. Research Hypothesis Testing

PLS and Bootstrapping methods were used herein to test the structural model, Bootstrapping = 5000 times, and significance $p < 0.05$ was taken as the standard. The path relationship of structural model (Figure 2) and hypothesis test results (Table 3) are as follows:

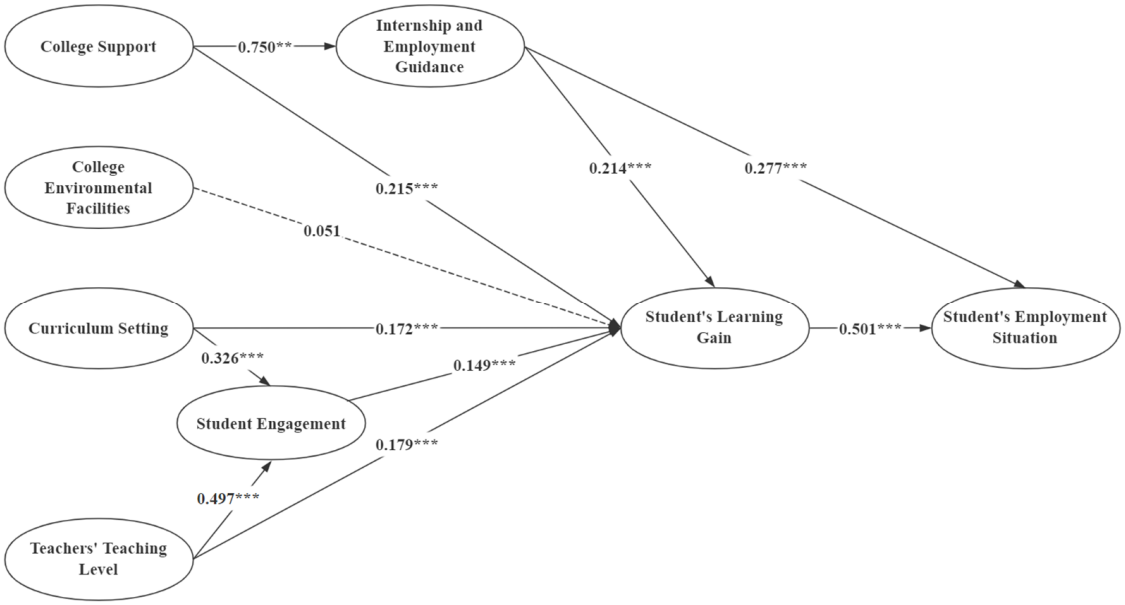


Figure 2. SEM model of the learning gain of students. *** $p < 0.001$, and the parameter is estimated to be significant at 99.9% confidence level. ** $p < 0.01$, and the parameter is estimated to be significant at 99% confidence level.

Table 3. Hypothesis testing results.

Model Assumptions		Path Coefficient (β)	t Value	Results
H1	SG→ES	0.501 ***	13.315	SUPPORTED
H2a	EG→ES	0.277 ***	7.085	SUPPORTED
H2b	EG→SG	0.214 ***	4.694	SUPPORTED
H3	CS→EG	0.750 ***	32.398	SUPPORTED
H5	CS→SG	0.215 ***	5.655	SUPPORTED
H6	CF→SG	0.051	1.324	UNSUPPORTED
H7	SE→SG	0.149 ***	3.524	SUPPORTED
H8a	CD→SG	0.172 ***	4.585	SUPPORTED
H8b	CD→SE	0.326 ***	9.016	SUPPORTED
H9a	TQ→SG	0.176 ***	4.92	SUPPORTED
H9b	TQ→SE	0.497 ***	14.335	SUPPORTED

*** $p < 0.001$, and the parameter is estimated to be significant at 99.9% confidence level.

Table 4 shows the results of mediation effects testing. First, focusing on the factors influencing students' employment status, both students' learning gains ($\beta = 0.501$, $p < 0.001$) and internship and employment guidance ($\beta = 0.277$, $p < 0.001$) from college education have significant positive impacts on students' employment situation. Hence H1 and H2a are supported, indicating that the more students' learning gains, more internship and employment guidance are provided. Also, more students become appreciated by employers, ultimately making it easier for them to find the jobs that they are satisfied with and allowing them to enjoy a better employment match with their majors. On the school's internship and employment guidance, on the one hand, the internship and employment guidance ($\beta = 0.214$, $p < 0.001$) have a significantly positive effect on students' learning gains. Hence, H2b is also supported, meaning that students can improve their professional knowledge reserves and enhance their learning, innovation, synergy skills and social ethics through internships and career guidance activities. On the other hand, internship and employment guidance is also significantly and positively influenced by college support ($\beta = 0.750$, $p < 0.001$). Hence H3 is supported, reflecting that student feedback, curriculum support, and other similar behaviors are important sources of information and guarantees for schools to provide proper internship and employment guidance.

Table 4. Results of mediation effects testing.

Model Assumptions		Path Coefficient	t Value	Results
H4a	CS→EG→SG	0.161 ***	4.691	SUPPORTED
H4b	EG→SG→ES	0.107 ***	4.466	SUPPORTED
H10a	CD→SE→SG	0.049 **	3.231	SUPPORTED
H10b	TQ→SE→SG	0.074 **	3.429	SUPPORTED

*** $p < 0.001$, and the parameter is estimated to be significant at 99.9% confidence level. ** $p < 0.01$, and the parameter is estimated to be significant at 99% confidence level.

Second, the focus is on the factors influencing students' learning gains. For institutional factors, college support ($\beta = 0.215$, $p < 0.001$) has a significant positive effect on students' learning gains, and H5 is supported, reflecting that the more support is given to students by their schools, more students can acquire professional knowledge, learning ability, innovation, teamwork, and social ethics from their university. However, results also show that the environmental facilities of the school ($\beta = 0.051$, $p > 0.05$) do not have a significant positive effect on students' learning gains. Hence, H6 is not supported. The reason may be that the school's facility environment is considered the basic guarantee for students' successful learning, while institutional support behaviors are core factors affecting students' learning gains (in terms of college factors). For personal factors, including students' engagement ($\beta = 0.149$, $p < 0.001$), curriculum settings ($\beta = 0.172$, $p < 0.001$), and teachers' teaching level ($\beta = 0.176$, $p < 0.001$) have significant positive impacts on students' learning gains. Hence, H7, H8a, and H9a are supported. In other words, the stronger students' participate in learning, the more students can gain from learning. In addition, the more advanced and reasonable school's curriculum can be developed, students will be more engaged in learning and can gain more from their university learning. Notably, school curriculum settings ($\beta = 0.326$, $p < 0.001$) and teachers' teaching level ($\beta = 0.497$, $p < 0.001$) also have significantly positive effects on students' engagement, thus supporting hypotheses H8b and H9b. This suggests that curriculum and teachers' level are important factors affecting students' personal engagement.

Bias-corrected non-parametric Bootstrap method was used to test the mediation effect. The sample extraction of Bootstrap was set to 5000 and was carried out under a 95% confidence interval. The results of the mediating effect test showed that internship and employment guidance and student engagement had important mediating effects in promoting student learning gains and contributed to improved quality of student employment. Specifically, college support indirectly affects students' learning gain through internship and employment guidance ($\beta = 0.161$, $p < 0.001$). Internship and employment

guidance can indirectly affect students' employment situation through students' learning gain ($\beta = 0.107$, $p < 0.001$), thus verifying hypotheses H4a and H4b. Results also showed that both curriculum design ($\beta = 0.049$, $p < 0.01$) and teachers' teaching quality ($\beta = 0.074$, $p < 0.01$) indirectly affect students' learning gain through student engagement, thus also supporting hypotheses H10a and H10b.

5. Conclusions

5.1. Main Results

Following a questionnaire survey of undergraduate students majoring in tourism management from 28 tourism colleges in China, this study explores the influence mechanism of students' learning gain in tourism colleges from two aspects of college investment and individual learning of students, and focuses on the intermediary role of internship and employment guidance and student engagement in the mechanism.

The main conclusions are as follows:

(1) Students' gain in professional knowledge reserve, learning ability, innovation ability, teamwork ability and social ethics through college study can have a significant positive impact on students' employment situation.
(2) Internship and employment guidance plays an important role in the influence of college investment on students' learning gain. The degree of college support affects students' learning gain through internship and employment guidance, and the direct influence of internship and employment guidance on students' employment situation is also very significant.
(3) Student engagement plays an important mediating role between teaching factors and students' learning gain. Curriculum design and teachers' teaching quality affect students' learning gain through student engagement.
(4) The college learning guidance and advice collection can effectively improve students' sense of acquisition, but the impact of college environment facilities such as catering and accommodation on students' learning gain is not significant.

5.2. Implication

Taking students' learning gain as the research theme, this study conducted an investigation and research on undergraduates majoring in tourism management from 28 colleges in seven regions of China from two aspects of college investment and individual learning of students. The main theoretical contributions of the present study are indicated as follows:

First, the present study introduces the pedagogical theory of student's learning gain theory into the study of tourism education, verifies that the two influential dimensions of student learning gain are also applicable to tourism majors, expands the study sample of tourism majors' learning gain, and pioneers a large-scale cross-regional survey of tourism education research conducted nationwide. Specifically, the present study finds a significant relationship between tourism education students' learning gains and their employment status, providing favorable support for the importance and necessity of focusing on student learning gains research.

Second, the present study can, to a certain extent, complement and revise the theories related to students' learning gain, which is the second innovation of the present study. It is found that environmental facilities have no significant effect on the learning gains of undergraduate tourism management students, which is inconsistent with the results of previous studies; and provide a new direction for future research, which helps to explore the most essential factors affecting students' gains.

Finally, based on the actual characteristics of tourism majors, the present study introduces internship and employment guidance as an important mediating factor in the college investment impact pathway of student learning gains and verifies the important mediating role of internship and employment guidance, providing an innovative perspective for tourism education-related research. The aforementioned findings effectively complement relevant research in the field of education, especially in the field of tourism education. It can

be seen that research on students' learning gains differs in terms of impact mechanisms due to the characteristics of different disciplines and cannot be generalized across disciplines and majors.

The current study provides some important elucidations for the construction of talent cultivation mechanism for undergraduate students in tourism colleges:

(1) Students' learning gain is the subjective perception and evaluation of their undergraduate learning effect, and students' employment is an important indicator of teaching quality. The study verifies that students' learning gain significantly influences students' employment situation, illustrating that colleges must not only focus on employment rate. They must also pay much regard in improving their students' sense of gain and their comprehensive quality, such as their professional knowledge accumulation, learning ability, innovation ability, team cooperation ability, and social morality. Paying attention to the comprehensive development and cultivation of tourism talents effectively promotes and improves the employment situation of students majoring in tourism.

(2) Tourism is a highly practical discipline with an equally practical industry. Hence, undergraduate training in tourism colleges should focus on the internship and employment guidance according to the normative suggestions of what should be included in tourism education. Tourism colleges should provide more employment recommendations and better internship site conditions for students, allowing them fully understand the requirements of employers through practical courses, and providing professional employment guidance and career planning training.

(3) Student engagement plays an important role in teaching tourism at the undergraduate level. Results clearly conclude that student engagement plays an important mediating role between teaching factors and students' learning gain. Therefore, colleges should improve the mobilization of students' participation in curriculum design and teachers' teaching quality evaluation, including guiding students to think independently, encouraging class participation, and creating avenues for interaction with teachers, therein fully mobilizing students' enthusiasm for classroom participation and activating the tourism teaching class.

(4) Schools should pay attention to students' learning guidance and collecting feedback on students' opinions. Listening to students' concerns is one of the important factors affecting students' learning gain. Hence students' learning guidance and timely feedback on their collected work should be fully managed to improve education quality's enthusiasm and initiative, therein also ensuring the fairness of the work to provide professional guidance for each student and accordingly improve teaching mechanism.

5.3. Limitations and Future Research Directions

The limitations of this study are as follows: firstly, this study conducted a cross-regional study on students from 28 tourism colleges in seven regions across the country. However, it remains undiscussed whether there are significant differences among students from different regions, different colleges, and different genders, which should be examined by future research. Secondly, the research on the influencing factors of students' learning gain in this paper only focuses on the aspects of college investment and individual learning of students, and the influence of individual learning of students is more prominent than the influence of teaching factors and student participation. Therefore, influencing factors must be expanded into further dimensions, such as students' learning duration, students' family background, and the financial investment of colleges.

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