Article

Attitudes of Undergraduate Students from University–Industry Partnership for Sustainable Development: A Case Study in Macau

Jian Ming Luo [1] (iD)**, Ka Yin Chau** [1]**, Chi Fung Lam** [2,]*****, Guo Qiong Huang** [1] **and Iok Teng Kou** [1]

[1]   Faculty of International Tourism and Management, City University of Macau, Taipa, Macau, China; kennyluo@cityu.mo or kenny.luo@connect.polyu.hk (J.M.L.); gavinchau@cityu.mo (K.Y.C.); ivankahuang689@outlook.com (G.Q.H.); estherkou@gmail.com (I.T.K.)
[2]   Department of Finance, The Chinese University of Hong Kong, Hong Kong, China
*   Correspondence: kelvinlam@cuhk.edu.hk

Abstract: Previous studies described in detail many university–industry programs. The purpose of this paper was to develop a multidimensional and multi-item attitude scale to measure undergraduate tourism students' attitudes towards working in the tourism industry. This study was a quantitative and exploratory research. This paper describes a scale development process and presents the result of the scale using data collected from a university–industry collaboration program in Macau. This study identified five dimensions, i.e., Interpersonal Relationships, Industry–Person Congeniality, Organizational Climate, Working Condition, and Nature of Work, to measure the students' attitudes. The proposed measurement scale will help evaluate and identify the sustainability of university–industry cooperation partnerships. Furthermore, the scale will help design marketing strategies to promote such programs. This study identified areas to be improved and provides suggestions to HR managers or educators.

Keywords: university–industry partnership sustainability; attitudes; measurement scale

1. Introduction

Ever since the liberalization of the Macau gaming license, Macau has experienced enormous growth and has developed into a world-class tourism destination. However, the rapid growth induced other consequences. For example, as a result of the increasing number of constructions in gaming facilities and hotel resorts, the unemployment rate in Macau reduced from 6.1 percent in 2003 to 2 percent in 2017. While the low unemployment rate was beneficial to the workers, it created labor shortage. According to the Bureau of Economics and Business Affairs [1] and Casino News Daily [2], labor shortage is one of the "bottlenecks" to the future development of Macau tourism.

Education is important to Macau's economy. The Macau government has exerted numerous efforts to "develop Macau through education" and "cultivate talents for the development of Macau" in various aspects [3]. Furthermore, the Macau government strongly advocates autonomy, diversity, and coordination of educational institutions [4]. As a result, from 1998 to 2016, tourist arrival, hotel employees, and students enrolled in higher education increased of 445 percent, 253 percent, and 368 percent, respectively (see Figure 1).

To respond to the increasing demand for workers with tourism or hospitality expertise, many local companies have participated in university–industry partnerships. These partnerships help companies to admit students to participate in tourism or hospitality industries. For example, Sheraton Macau has established a joint International Hospitality and Tourism Management Bachelor program with the City

University of Macau. Although Sheraton is an internationally recognized hotel brand, which attracts many talents in the world, many local (Macau) workers were unwilling to participate in front-line hotel duties. One attractive feature of this program is a guaranteed supervisory or management position upon graduation. The goal is to attract more talents and to train these talents through the operation of Sheraton Macau. Similarly, Melco Crown has established an in-house Learning Academy, which is a joint diplomatic program with the University of Macau, for its employees. This program is free to enroll. To obtain a diploma, the employees have to attend a 2.5 h class twice a week for a year [5]. To achieve sustainable development, the university needs to engage in strategic partnerships [6].
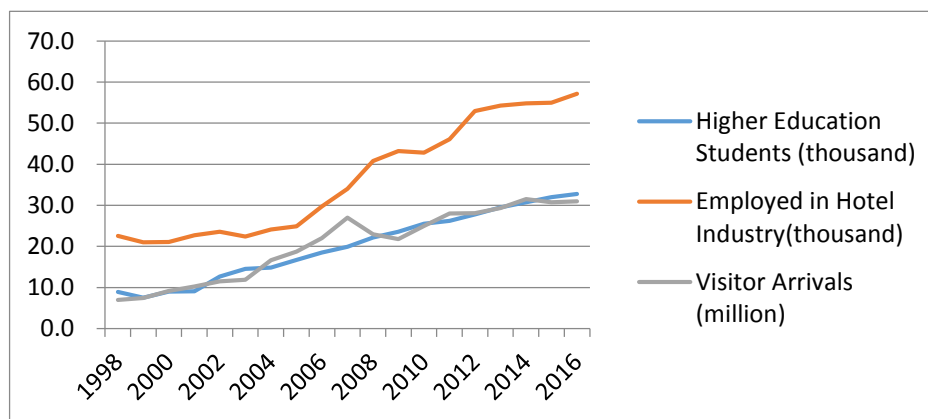
Figure 1. Number of Higher Education Students Employed in Hotel Industry and Visitor Arrivals in Macau.

In 2012, the City University of Macau established the Professional Development Scheme. Compared with other common internship programs in similar universities, this scheme is unique because students, once admitted to the scheme, will receive tuition sponsorship and living allowance from tourism or gaming institutions in Macau. In return, the students are required to study and work at the same time. The commencement date for both study and work is the same. The participating institutions allocate students to different positions in a company to allow them to accumulate valuable working experience. Furthermore, a dedicated staff coordinates the work and class schedules to avoid any conflicts. The students are considered as both full-time workers and full-time students [7]. To a certain degree, this program is very different from a usual internship program. First, the duration of this program is longer (4 years); second, the students enrolled in this program need to balance their school, personal, and work life; third, this scheme is an innovative and experimental program.

The positive attitude at work of the employee is a key requirement for a company to successfully satisfy customer's need and retain customer loyalty [8,9]. Organization commitment, which is the intention to integrate the employees into the organization, and job satisfaction are two important factors affecting attitude at work [10]. Education, training, skills, and motivation of the employees determine the competitiveness of a company [11,12], while employees' perception and attitudes affect their commitment to the company. Because of the negative image of the hospitality and tourism industry, researchers reported that workers were reluctant to enter the program [11]. Therefore, understanding students' perception and attitudes in the university–industry cooperation program is important.

2. Literature Review

2.1. University–Industry Partnership Sustainability

Previous researches described in detail many university–industry partnerships. Partnerships could increase not only wealth and social equity, but also environmental protection and international

responsibilities [13]. Serious partnership between university and industry was found to be important. To achieve this outcome, a university needs to understand the market needs and structure its program and curricula to accommodate the market needs. These collaborations have become increasingly attractive to researchers [14]. To achieve a sustainable development of the university–industry partnerships, university and industry should employ different resources, techniques, and systems [15]. For example, internship is one type of work training. It was found that internship allowed the participants to obtain specific knowledge, such as about working procedures and company hierarchy, of a company or an industry [16]. Internship is characterized by four elements, which are working hours, monetary reward, (school/university) credit awarded, and degree of supervision [17]. The American Institute of Certified Public Accountants [18] defined internship as work experience that enhances the usual lecture experience through practice in related institutions. Gault, Redington, and Schlager [19] adopted a similar definition but they further indicated that one of the benefits of an internship is to reduce search costs, such as costs related to screening and recruiting, for both employers and employees.

The Professional Development Scheme is unique when compared to other university–industry programs in Macau. The students do not need to pay any university tuition. Furthermore, they receive a certain amount of living expenses based on their working position in the sponsor's company. Students are given the opportunity to stay in the same position upon graduation. The main advantage and attractiveness of this Scheme is that the competitiveness of the students increases dramatically. Furthermore, this Scheme also provides the students with the opportunity to move up the social hierarchy [20]. Since this Scheme is a completely new attempt in Macau, no previous studies have examined the sustainability of this type of university–industry program. Hence, understanding how the attitudes and perceptions of undergraduate tourism and hospitality students are affected by the working experience and how the working experience affects their future career choice is important.

2.2. Students' Attitudes Regarding the Hospitality Sector

Since the service industry is service-oriented, a positive attitude of the employee is particularly important to obtain customer satisfaction and loyalty [11,21]. Attitude is commonly decomposed into three main components: cognition, affect, and conation (behavioral tendencies) [22]. Attitude was defined as the "total of all cognitive thoughts, feelings and behavioral tendencies students have about different aspects or dimensions of working in the tourism industry as well as the working intentions in, or commitment to, the industry" [11].

Attitude is an important factor to predict and explain behavior [23]. Numerous researchers studied the perceptions and attitudes of people in the tourism and hospitality industry. Kusluvan and Kusluvan [11] claimed the studies of attitude could be classified into three groups. The first group targeted high school students, the second group targeted existing workers, and the third group targeted existing tourism or hospitality undergraduate students [11]. In Kusluvan and Kusluvan study, the authors used nature of work, social status, industry–person congeniality, physical working condition, wage and associated benefits, career opportunities, coworkers, managers, and commitment to the tourism industry to develop a multidimensional scale of attitude. Richardson [24] used this scale to examine the attitude and perception of Australian students. Richardson [24] showed that the relationship with the managers, career opportunities, career path, and wage and associated benefits significantly affected students' attitude and perception. Akin, Aksu, and Deniz Köksal [25] conducted a similar study in Turkey. Teng [26] adopted a similar classification. The author used exploratory factor analysis (EFA) and identified the effects of working conditions, industry–person congeniality, interpersonal relationship, organizational climate, and nature of work towards attitudes. Furthermore, researchers showed that to provide strong, realistic, and accessible experience, direct exposure was necessary [27]. However, different studies discovered different results regarding attitude and experience.

On one hand, Ross [28,29] found a positive relationship between direct experience and the possibility of a career in tourism. Furthermore, previous studies showed that positive attitude could positively affect the effectiveness of internships [30–32]. An internship was generally believed to be

beneficial to the students, the organizations, and the university [33,34]. The students who treated intern jobs seriously would outperform those who did not. Knouse, Tanner, and Harris [35] supported this result by showing a positive relationship between the internship and the cumulative grade point average. In addition to grades, the students who had internship experience had a higher probability of finding jobs after graduation. Hence, Knouse and Fontenot [36] concluded that internship was beneficial.

On the other hand, other researchers, such as Getz [37], Waryszak [38], Kusluvan & Kusluvan [11], and Barron, Maxwell, Broadbridge, & Ogden [39] argued that a direct experience in tourism industry would impose a negative image or attitude to the students. The negative attitudes affected not only the career choice of the students [38,40] but also other stakeholders, such as the tourism industry, government, and the university, which provided tourism or hospitality education [11]. Hence, the study of students' attitudes toward tourism and hospitality is particularly important, especially for the sustainable development of universities. The specific objectives of this study were as follows:

1. Review the development of the hospitality university–industry cooperation program in Macau.
2. Create measurement items to measure the attitudes of undergraduate students who were enrolled at the time of the study in the university–industry cooperation program of tourism or hospitality management in Macau.
3. Provide suggestions and recommendations to improve the cooperation program.

3. Methods

This study followed Churchill's [41] methodological proposal. This proposal is a standard procedure to develop measurement instruments with the ability to design new multi-item measurement scales that include previously used items. A self-administered questionnaire based on literature review was created. Three panel experts, which included a Senior Human Resource manager from Crown Plaza Macau, a Senior Vice President from Galaxy Entertainment, and one tourism academic from the City University of Macau, reviewed the questionnaire. The composition of the panel experts covered a wide range of perspectives from the industry. Thirty students were selected randomly for the pilot test. This ensured the efficacy and clarity of the questionnaire. There were two sections in the questionnaire. Section 1 collected the demographic information of the interviewees and Section 2 collected the attitudes dimension towards working in the tourism or hospitality industry in Macau. After the pilot test and revision based on the comments from interviewees and panel experts, there were 27 items in the measurement scale. The final version of the questionnaire used a five-point Likert-type scale, with 1 representing "strongly disagree" with the statement and 5 representing "totally agree" with the statement. This study used convenient sampling. In May 2017, the questionnaires were distributed to all undergraduate students with gaming or hospitality management major. The total number of questionnaires distributed was 300, and 231 usable questionnaires were received, which represented a response rate of 75.5%. The questionnaires were split into 80 for EFA and 151 for confirmatory factor analysis (CFA).

Exploratory factor analysis (EFA) was employed to discover the dimensions of students' attitudes. To ensure the validity of the study, Kaiser–Myer–Olki (KMO) and the Barlett's tests of Sphericity were used. Bartlett's test examined the significance of the correlation matrix, and the KMO test assessed the sampling adequacy. A correlation matrix was produced to examine the inter-item correlation. The result showed the correlations were substantial (>0.30). The factor reliability was analyzed through Cronbach's alpha and item-to-total correlation. The Cronbach's alpha was 0.856. The KMO value was 0.807, and Bartlett's test of sphericity was significant at 0.0001 level. On the basis of the results from the screen plot and eigenvalue (both greater than 1), all factor loadings were greater than 0.6. Eight items were removed, and nineteen items were present in the final model. The items are listed in Table 5.

Once the EFA established the factor structure, the CFA checked the structure by examining the covariance matrix. The core of this was to extract precise information from the analysis. There were

two types of validity of this study, the content validity, which indicates the representativeness of the items in the questionnaire, and the construct validity, which is composed of the discriminant validity and the convergent validity. According to the interviewees, the items were clear and easy to understand, and there was no misunderstanding. Therefore, this showed excellent content validity [42]. The discriminant validity examined the divergence of measurements of different traits by independent assessment methods, while the convergent validity examined the convergence of measurements of different assessment methods on the same trait. A valid analysis should exhibit minimum convergence [43]. The factor loadings and average variance were examined to verify the convergent validity. Measurement errors were identified via the second-order factor model.

4. Data Analysis and Results

4.1. Profile of the Respondents

The demographic profile of the respondents is presented in Table 1. There were 68 (45.0%) females and 83 (55.0%) males among the respondents. The main age group was 20 (29.8%), followed by 19 (19.2%), 18 (15.9%), 21 (13.9%), 22 (11.3%), and 23 or above (9.9%). The fraction of year 4, year 1, year 3, and year 2 students were 39.1%, 21.9%, 20.5%, and 18.5%, respectively. There were 59 (39.1%) students major in gambling management and 92 (60.9%) students major in hotel management (See Table 1).

Table 1. The Demographic Profile of the Respondents.

		Frequency	%	Attitude to Hospitality Jobs	
				Mean	SD
Grade	Year 1	33	21.9	2.82	0.49
	Year 2	28	18.5	2.78	0.64
	Year 3	31	20.5	2.92	0.31
	Year 4	59	39.1	2.79	0.37
Major	Gambling	59	39.1	2.79	0.37
	Hotel	92	60.9	2.84	0.49
Gender	Male	83	55.0	2.82	0.46
	Female	68	45.0	2.83	0.43
Age	18	24	15.9	2.90	0.36
	19	29	19.2	2.74	0.43
	20	45	29.8	2.83	0.49
	21	21	13.9	2.84	0.51
	22	17	11.3	2.69	0.35
	23+	15	9.9	2.95	0.46

4.2. CFA Results of the Dimensions of Attitudes in the University–Industry Cooperation Program

To confirm the psychometric properties, specifically, the reliability and the validity, of the proposed measurement scale, first- and second-order CFA, as well as a maximum likelihood estimation (MLE), were conducted.

Churchill [41] showed that CFA could assess the reliability and validity of the measurement scale. The final model of this study contained five factors. An iterative process, proposed by Anderson and Gerbing [44], was used to minimize the number of measurement scales. The result of the first-order CFA is shown in Table 2. According to Hair, Black, Babin, and Anderson [45], the acceptable range of root-mean-square error of approximation (RMSEA) should be between 0.05 and 0.08. Any number lower than 0.05 would indicate a close fit of the model in relation to the degrees of freedom. The goodness of fit was examined by the Sator–Bentler χ^2. The p-value of this test was less than 5%. Other indices, such as the Goodness of Fit Index (GFI) [46], Comparative Fit Index (CFI) [47],

Normed Fit Index (NFI), Non-Normed Fit Index (NNFI), and Incremental Fit Index (IFI) [48], were above 0.8, which indicated an overall good fit.

Cronbach's α coefficients and the average variance extracted (AVE) were used to measure the reliability of the measurement scale. Cronbach's α coefficients should exceed 0.7, and the AVE should exceed 0.5 [45,49] for the measurement scale to be reliable.

Table 2. First-Order confirmatory factor analysis (CFA) Results for Attitude for Hospitality Jobs.

Latent Variable	Measured Variable	Standardized Lambda	R^2	Cronbach's α	AVE	Goodness of Fit
Working Condition	WC1	0.78	0.60	0.82	0.49	$\chi^2 = 177.136$ ($p = 0.000$)
	WC2	0.72	0.52			
	WC3	0.67	0.45			
	WC7	0.65	0.43			
	WC8	0.66	0.43			
Industry–person Congeniality	IPC1	0.74	0.55	0.82	0.54	GFI = 0.893
	IPC2	0.69	0.47			CFI = 0.959
	IPC4	0.79	0.62			IFI = 0.960
	IPC5	0.72	0.52			
Interpersonal Relationships	IR1	0.70	0.49	0.70	0.44	NFI = 0.827
	IR2	0.68	0.46			NNFI = 0.950
	IR3	0.61	0.38			
Nature of Work	NOW1	0.67	0.45	0.77	0.46	RMSEA = 0.041
	NOW2	0.70	0.49			
	NOW3	0.68	0.46			
	NOW4	0.65	0.43			
Organizational Climate	OC1	0.60	0.36	0.71	0.45	
	OC2	0.69	0.47			
	OC3	0.71	0.51			

Chau [50] examined the representativeness of the measurement items towards their corresponding factors, hence the author proposed a convergence validity test. Since the factor loadings of the final model were high, standardized lambda coefficients exceeded 0.5, and all items achieved a 95% significance level, the final model passed the convergent validity test [51]. The discriminant validity of the model was examined by the factor correlation [52]. Since the factor correlations between the five dimensions were lower than 0.5, the final model showed a good fit among the factor structure of the variables (See Table 3).

Table 3. Discriminate Validity for First-Order CFA in Gaming Industry.

	Number of Items	Working Condition	Industry–Person Congeniality	Interpersonal Relationships	Nature of Work	Organizational Climate
Working Condition	5	0.462				
Industry–person Congeniality	4	0.496	0.399			
Interpersonal Relationships	3	0.437	0.401	0.361		
Nature of Work	4	0.010	0.312	0.062	0.387	
Organizational Climate	3	0.015	0.076	0.351	0.337	0.300

According to Anderson and Gerbing [4], a second-order CFA could examine the intercorrelation between the dimensions. As a result, 19 items were included in the scale and were used for second-order confirmatory factor analysis. On the basis of the result in Table 4, ($\chi^2 = 205.119$, CFI = 0.973, GFI = 0.879, NNFI = 0.921, RMSEA = 0.051, $p = 0.000$) the factor loadings could significantly and

accurately present their corresponding dimensions. Hence, this justified the adjustments of the second-order model.

Table 4. Second-Order CFA Results for CSR Dimensions.

	Factor Loadings	**Goodness of Fit**
Working Condition	(0.657–0.773)	χ^2 = 205.119 (p = 0.000)
Industry–person Congeniality	(0.677–0.785)	GFI = 0.879, CFI = 0.932
Interpersonal Relationships	(0.609–0.704)	IFI = 0.934; NFI = 0.799
Nature of Work	(0.638–0.719)	NNFI = 0.921
Organizational Climate	(0.631–0.701)	RMSEA = 0.051

The development and testing of the attitudes measurement scale elaborated in this research enabled the evaluation of the students' attitudes toward the tourism and hospitality industry. The final attitudes measurement scale with all the items is included in Table 5.

Table 5. Final Student Attitudes Measurement Scale.

Ident.	Dimension	Item	References
WC1		The level of fringe benefits is sufficient in the hospitality and gaming industry	[11,24–26]
WC2		I think that the pay for most the hospitality and gaming jobs is sufficient to lend a satisfactory life	[11,24–26]
WC3		Promotion opportunities are satisfactory in the hospitality and gaming industry	[11,24–26]
WC4 *	Working Condition	Working environments are generally good in the hospitality and gaming industry	[11,24–26]
WC5 *		The advantages of working in the hospitality and gaming industry outweigh the disadvantages	[11,24–26]
WC6 *		There are opportunities to learn and grow in the hospitality and gaming industry	[11,24–26]
WC7		Managers empower employees and value their suggestions	[11,24–26]
WC8		Working in hospitality is a respected vocation in the society	[11,24–26]
IPC1		I get pleasure while working in the hospitality and gaming industry	[11,24–26]
IPC2		My character fits to working in the hospitality and gaming industry	[11,24–26]
IPC3 *	Industry–person Congeniality	It is a very nice to serve customers	[11,24–26]
IPC4		I find jobs in the hospitality and gaming industry interesting	[11,24–26]
IPC5		My family is proud of my profession in the hospitality and gaming industry	[11,24–26]
IPC6 *		There is always something new to learn each day in hospitality and gaming jobs	[11,24–26]

Table 5. *Cont.*

Ident.	Dimension	Item	References
IR1	Interpersonal Relationships	There is cooperation among employees in the hospitality and gaming industry	[11,24–26]
IR2		I can make friends easily with people working in the hospitality and gaming industry	[11,24–26]
IR3		Most employees are highly motivated and enthusiastic about working in the hospitality and gaming industry	[11,24–26]
IR4 *		There is a good relationship between managers and employees in the hospitality and gaming industry	[11,24–26]
NOW1	Nature of Work	To me, jobs in hospitality and gaming are exhausting	[11,24–26]
NOW2		Family life is negatively affected for people working in the hospitality and gaming industry because of the nature of work	[11,24–26]
NOW3		Working hours are not suitable for a regular life in the hospitality and gaming industry	[11,24–26]
NOW4		I would not want my children to study or work in the hospitality and gaming industry	[11,24–26]
NOW5 *		I feel that I am a slave while working in the hospitality and gaming industry	[11,24–26]
OC1	Organizational Climate	I find people working in the hospitality and gaming industry boring	[11,24–26]
OC2		Managers are jealous of university graduates with a degree in hospitality and gaming	[11,24–26]
OC3		Most people working in the hospitality and gaming industry are rude people	[11,24–26]
OC4 *		It is very difficult to get promoted if you do not "have an uncle in the court" in the hospitality and gaming industry	[11,24–26]

Note: the asterisk (*) indicate that the item was deleted in the final measurement model.

Table 6 shows the most highly rated aspects were "There was cooperation among employees in the hospitality and gaming industry" (IR2, mean = 3.42), "I can make friends easily with people working in the hospitality and gaming industry" (IR1, mean = 3.37), and "It is a very nice feeling to serve customers" (IPC3, mean = 3.01). In contrast, the aspects rated the lowest by the respondents were "To me, jobs in hospitality and gaming are exhausting" (NOW1, mean = 2.58), "I would not want my children to study or work in the hospitality and gaming industry" (NOW4, mean = 2.54), and "Family life is negatively affected for people working in the hospitality and gaming industry because of the nature of work" (NOW2, mean = 2.49).

Comparing the ratings for each of the dimensions and the attitudes of the students toward working in tourism and hospitality industry, the average rating of Working Condition (mean = 2.75) and Nature of Work (mean = 2.59) was significantly lower. The dimension of attitudes with the highest rating was Interpersonal Relationships (mean = 3.27) (see Table 7).

Table 6. Mean Test of the Ratings of Each Factor of the Attitudes to Hospitality jobs.

Ident.	Mean	SD	Rank
IR2	3.42	0.882	1
IR1	3.37	0.861	2
IR3	3.01	0.872	3
WC1	2.86	0.880	4
IPC2	2.85	0.831	5
IPC4	2.83	0.852	6
OC3	2.83	0.883	7
WC3	2.81	0.897	8
IPC1	2.79	0.853	9
OC2	2.77	0.858	10
IPC5	2.77	0.826	11
WC7	2.75	0.945	12
NOW3	2.74	0.927	13
WC2	2.70	0.894	14
OC1	2.68	0.913	15
WC8	2.62	0.900	16
NOW1	2.58	0.926	17
NOW4	2.54	0.971	18
NOW2	2.49	0.986	19

Table 7. Mean Test of the Ratings of the Attitudes to Hospitality Jobs Dimensions.

Dimension	Mean	SD	Rank
Interpersonal Relationships	3.27	0.69	1
Industry–person Congeniality	2.81	0.68	2
Organizational Climate	2.76	0.70	3
Working Condition	2.75	0.69	4
Nature of Work	2.59	0.73	5

5. Discussion and Implications

Despite numerous studies on students' attitude toward industry, empirical research in testing and measuring students' attitude in the university–industry cooperation program is missing. Many researchers studied attitude and its application in many different industries. A precise measurement scale of attitudes with appropriate adjustments based on the specific characteristics of the industry was paramount. Given the limitation of the previous measurement scales, this study tried to fulfill the gap by identifying the students' attitudes toward the tourism and hospitality industry during their participation in a university–industry cooperation program.

This study followed a two-step methodology approach, proposed by Churchill [41], to develop a measurement scale. This included a qualitative and a quantitative approach. The responsibilities of five attitudes domains were identified on the basis of a panel review. A survey was conducted thereafter to examine the adequacy of the measurement scale. This study contributes to the tourism and hospitality literature through the practical application of the university–industry cooperation program in Macau. This study confirmed the multidimensional nature of students' attitudes. This coincides with the results of many previous researches [11,24–26].

This study showed that a working experience in the tourism and hospitality industry negatively affects students' intention to pursue a career in the industry. This result is consistent with those of previous researches, such as the studies by Kusluvan and Kusluvan [11], Richardson [24], Akin Aksu and Deniz Köksal [25], and Teng [26]. This study identified five dimensions, i.e., Interpersonal Relationships, Industry–Person Congeniality, Organizational Climate, Working Condition, and Nature of Work, to measure students' attitudes. The results showed that Interpersonal Relationships was the most important dimension from the students' perspective. This was because the students were working

in the industry and studying simultaneously; rherefore, they were more familiar with the characteristics of the industry. The hospitality industry is a people-orientated industry. Furthermore, although Macau is an international city, the students worked in a Chinese culture, which emphasizes collectivism [53]. Therefore, the students valued much the interpersonal relationship. Besides, there was a very negative attitude towards Organizational Climate, which was measured by "I find people working in the hospitality and gaming industry boring", "Managers are jealous of university graduates with a degree in hospitality and gaming", and "Most people working in the hospitality and gaming industry are rude people". This result contrasts sharply with those of previous studies. Teng [26] showed that the students with tourism and hospitality degrees had a positive attitude towards the Organizational Climate. One big difference between this study and Teng's [26] concerns the type of sample. The sample in Teng [26] mainly included general tourism and hospitality students, while the sample in this study consisted of students enrolled in the university–industry program. The students enrolled in this university–industry program had a deeper understanding of the industry, including the Organizational Climate, than the usual tourism and hospitality students. For example, many employees in the gaming facilities or hospitality industry were not well educated. Students with a better understanding of the industry would easily develop negative attitudes towards the industry. The proposed measurement scale will help evaluate and identify university–industry cooperation programs and design marketing strategies to promote such programs. Furthermore, this study identified areas to be improved and provides suggestions to the HR manager or educator. This would not only encourage more graduate students to pursue a career in tourism and hospitality industry, but also reduce labor shortage and provide a sustainable environment to university–industry partnerships.

This study contributes theory and practice by developing a valid measurement scale based on the students' perception. Some authors argued that when the students gain a strong and realistic understanding of the industry, their action becomes more predictable [27]. Despite numerous researches proposed methods to measure students' attitudes [11,24–26], this study adds to the literature, being based on the characteristics of university–industry partnerships for sustainable development. The perception of the students concerning the attitudes toward the tourism and hospitality industry was captured in this study. This will enhance students' perception of the industry and the likelihood to pursue a career after graduation [26].

6. Limitations and Future Research

There are several limitations in this study, which call for further development. First, the data collected in this study were country-specific, because of the area where they were collected. Hence, the results cannot be easily generalized to other locations. Future researches could test the validity and precision of this measurement scale in different areas with different programs. Second, since the data were collected in a one-time fashion, this study did not incorporate longitudinal information. Last, although the respondents understood the confidentiality of their responses, the variations of the students' perception of the financial benefits could not be captured, so further research can expand into a longitudinal study and in a more detailed examination of the impact of this variable on students' career decisions.

Author Contributions: The outline of the study was led by Jian Ming Luo. Jian Ming Luo and Chi Fung Lam designed and completed the paper. Ka Yin Chau provided research advices. Guo Qiong Huang and Iok Teng Kou collected data.

Conflicts of Interest: The authors declare no conflict of interest.

References

1.　Bureau of Economic and Business Affairs (2017). Investment Climate Statements. 2017. Available online: https://www.state.gov/e/eb/rls/othr/ics/2017/eap/269829.htm (accessed on 01 August 2017).

2.	Casino News Daily. Macau Faces Labor Shortage Issues. 2014. Available online: http://www.casinonewsdaily.com/2014/10/31/macau-faces-labor-shortage-issues/ (accessed on 1 August 2017).

3.	Government Information Bureau. Information. 2017. Available online: http://www.gcs.gov.mo/files/factsheet/Education_EN.pdf (accessed on 1 April 2018).

4.	Education and Youth Affairs Bureau. Overview of Education in Macao. 2017. Available online: http://portal.dsej.gov.mo/webdsejspace/internet/Inter_main_page.jsp?id=54775 (accessed on 1 August 2017).

5.	Melco Crown Entertainment. Melco Crown Entertainment Announces In-House Diploma in Casino Management. 2015. Available online: http://www.melco-resorts.com/en/doc/20150520-Press-Release_Melco-Crown-Entertainment-Announces-In-House-Diploma-in-Casino-Management-_EN.pdf (accessed on 1 August 2017).

6.	Salimova, T.; Vatolkina, N.; Makolov, V. Strategic Partnership: Potential for Ensuring the University Sustainable Development. *Qual. Innov. Prosper. Kval. Inov. Prosper.* **2014**, *18*, 17. [CrossRef]

7.	City University of Macau. The "Sheraton Professional Development Scheme" of City U Feeds the Industry with Professionals. 2015. Available online: http://www.cityu.edu.mo/en/the-sheraton-professional-development-scheme-of-city-u-feeds-the-industry-with-professionals/ (accessed on 1 August 2017).

8.	Zeithaml, V.A.; Bitner, M.J. *Services Marketing*; McGraw-Hill: New York, NY, USA, 1996.

9.	Richardson, S. Undergraduates' perceptions of tourism and hospitality as a career choice. *Int. J. Hosp. Manag.* **2009**, *28*, 382–388. [CrossRef]

10.	Huang, T.C.; Hsiao, W.J. The causal relationship between job satisfaction and organization commitment. *Soc. Behav. Personal.* **2007**, *35*, 1265–1276. [CrossRef]

11.	Kusluvan, S.; Kusluvan, Z. Perceptions and attitudes of undergraduate tourism students towards working in the tourism industry in Turkey. *Tour. Manag.* **2000**, *21*, 251–269. [CrossRef]

12.	Brien, A. Do I want a job in hospitality? Only till I get a real job. In Proceedings of the New Zealand Tourism and Hospitality Research Conference, Victoria University of Wellington, Wellington, New Zealand, 8–10 December 2004; pp. 35–42.

13.	Hanieh, A.A.; AbdElall, S.; Krajnik, P.; Hasan, A. Industry-Academia Partnership for Sustainable Development in Palestine. *Procedia CIRP* **2015**, *26*, 109–114. [CrossRef]

14.	Perkmann, M.; King, Z.; Pavelin, S. Engaging excellence? Effects of faculty quality on university engagement with industry. *Res. Policy* **2011**, *40*, 539–552. [CrossRef]

15.	Kaklauskas, A.; Banaitis, A.; Ferreira, F.; Ferreira, J.; Amaratunga, D.; Lepkova, N.; Ubarte, I.; Banaitiene, N. An Evaluation System for University-Industry Partnership Sustainability: Enhancing Options for Entrepreneurial Universities. *Sustainability* **2018**, *10*, 119. [CrossRef]

16.	Patton, P.L.; Dial, D.F. Testing the Water: A Survey on HRD Internships. *Train. Dev. J.* **1988**, *42*, 48–51.

17.	DiLorenzo-Aiss, J.; Mathisen, R.E. Marketing higher education: Models of marketing internship programs as tools for the recruitment and retention of undergraduate majors. *J. Mark. High. Educ.* **1996**, *7*, 71–84. [CrossRef]

18.	American Institute of Certified Public Accountants. Experiential Learning—Key Terms and Definitions. 2006. Available online: http://www.aicpa.org/members/div/career/edu/internships.htm#2 (accessed on 1 August 2017).

19.	Gault, J.; Redington, J.; Schlager, T. Undergraduate business internships and career success: Are they related? *J. Mark. Educ.* **2000**, *22*, 45–53. [CrossRef]

20.	City University of Macau. Perfect Ending for SCS-Ponte 16 Professional Development Scheme 2016. Available online: http://www.cityu.edu.mo/en/perfect-ending-for-scs-ponte-16-professional-development-scheme-2016/ (accessed on 10 April 2018).

21.	Rosentbluth, H. Tales from a nonconformist company. *Harv. Bus. Rev.* **1991**, *69*, 26–36.

22.	Ajzen, I. Attitude theory and the attitude-behavior relation. In *New Directions in Attitude Measurement*; Krebs, D., Schmidt, P., Eds.; Walter de Gruyter: Berlin, Germany, 1993; pp. 41–57.

23.	Ajzen, I.; Fishbein, M. *Understanding Attitudes and Predicting Social Behaviour*; Prentice-Hall: Bergen County, NJ, USA, 1980. [CrossRef]

24.	Richardson, S. Undergraduate tourism and hospitality students attitudes toward a career in the industry: A preliminary investigation. *J. Teach. Travel Tour.* **2008**, *8*, 23–46. [CrossRef]

25.	Akin Aksu, A.; Deniz Köksal, C. Perceptions and attitudes of tourism students in Turkey. *Int. J. Contemp. Hosp. Manag.* **2005**, *17*, 436–447. [CrossRef]

26. Teng, C.C. The effects of personality traits and attitudes on student uptake in hospitality employment. *Int. J. Hosp. Manag.* **2008**, *27*, 76–86. [CrossRef]
27. Fazio, R.H. How do attitudes guide behavior. In *Handbook of Motivation and Cognition: Foundations of Social Behavior*; Sorrentino, R.M., Higgins, E.T., Eds.; Guildford Press: New York, NY, USA, 1986; pp. 204–243.
28. Ross, G.F. Tourism management as a career path: Vocational perceptions of Australian school leavers. *Tour. Manag.* **1992**, *13*, 242–247. [CrossRef]
29. Ross, G.F. What do Australian school leavers want of the industry? *Tour. Manag.* **1994**, *15*, 62–66. [CrossRef]
30. Feldman, D.C.; Weitz, B.A. Summer interns: Factors contributing to positive developmental experiences. *J. Vocat. Behav.* **1990**, *37*, 267–284. [CrossRef]
31. Beard, F.K. Inside the advertising and public relations internship. In Proceedings of the Paper Presented at the Annual Conference of the Association for Education in Journalism and Mass Communication, Chicago, IL, USA, 30 July 30–2 August 1997.
32. Beard, F.; Morton, L. Effects of internship predictors on successful field experience. *Journal. Mass Commun. Educ.* **1999**, *53*, 42–53. [CrossRef]
33. Coco, M. Internships: A try before you buy arrangement. *SAM Adv. Manag. J.* **2000**, *65*, 41–44.
34. Phoebe, W.K. Determinants of Internship Effectiveness for University Students in Hong Kong. Ph.D. Thesis, Hong Kong Baptist University, Hong Kong, 2010.
35. Knouse, S.B.; Tanner, J.R.; Harris, E.W. The relation of college internships, college performance, and subsequent job opportunity. *J. Employ. Couns.* **1999**, *36*, 35–43. [CrossRef]
36. Knouse, S.B.; Fontenot, G. Benefits of the business college internship: A research review. *J. Employ. Couns.* **2008**, *45*, 61–66. [CrossRef]
37. Getz, D. Students' work experiences, perceptions and attitudes towards careers in hospitality and tourism: A longitudinal case study in Spey Valley, Scotland. *Int. J. Hosp. Manag.* **1994**, *13*, 25–37. [CrossRef]
38. Waryszak, R.Z. Students' expectations from their cooperative education placements in the hospitality industry: An international perspective. *Educ. Train.* **1999**, *41*, 33–40. [CrossRef]
39. Barron, P.; Maxwell, G.; Broadbridge, A.; Ogden, S. Careers in hospitality management: Generation Y's experiences and perceptions. *J. Hosp. Tour. Manag.* **2007**, *14*, 119–128. [CrossRef]
40. Kevin Jenkins, A. Making a career of it? Hospitality students' future perspectives: An Anglo-Dutch study. *Int. J. Contemp. Hosp. Manag.* **2001**, *13*, 13–20. [CrossRef]
41. Churchill, G.A., Jr. A paradigm for developing better measures of marketing constructs. *J. Mark. Res.* **1979**, *16*, 64–73. [CrossRef]
42. Zeng, S.X.; Meng, X.H.; Yin, H.T.; Tam, C.M.; Sun, L. Impact of cleaner production on business performance. *J. Clean. Prod.* **2010**, *18*, 975–983. [CrossRef]
43. Campbell, D.T.; Fiske, D.W. Convergent and discriminant validation by the multitrait-multimethod matrix. *Psychol. Bull.* **1959**, *56*, 81. [CrossRef] [PubMed]
44. Anderson, J.C.; Gerbing, D.W. Structural equation modeling in practice: A review and recommended two-step approach. *Psychol. Bull.* **1988**, *103*, 411. [CrossRef]
45. Hair, J.F.; Black, W.C.; Babin, B.J.; Anderson, R.E. *Multivariate Data Analysis*, 7th ed.; Pearson Prentice Hall: Upper Saddle River, NJ, USA, 2010.
46. Marcoulides, G.A.; Schumacker, R.E. *Advanced Structural Equation Modeling: Issues and Techniques*; Psychology Press: New York, NY, USA, 2013.
47. Bentler, P.M. *EQS 6 Structural Equations Program Manual*; BMDP Statistic Software: Los Angeles, CA, USA, 1989; pp. 86–102.
48. Bentler, P.M.; Bonett, D.G. Significance tests and goodness of fit in the analysis of covariance structures. *Psychol. Bull.* **1980**, *88*, 588. [CrossRef]
49. Fornell, C.; Larcker, D.F. Structural equation models with unobservable variables and measurement error: Algebra and statistics. *J. Mark. Res.* **1981**, *18*, 382–388. [CrossRef]
50. Chau, P.Y. Reexamining a model for evaluating information center success using a structural equation modeling approach. *Decis. Sci.* **1997**, *28*, 309–334. [CrossRef]
51. Steenkamp, J.B.E.; Van Trijp, H.C. The use of LISREL in validating marketing constructs. *Int. J. Res. Mark.* **1991**, *8*, 283–299. [CrossRef]
52. Kline, R.B. *Principles and Practice of Structural Equation Modeling*; Guilford Publications: New York, NY, USA, 2015.

53. Luo, J.M.; Lee, N.; Qiu, H. Education for Sustainable Development in Hong Kong: A Review of UNESCO Hong Kong' Experimental Schools. *Public Adm. Policy Asia-Pac. J.* **2015**, *18*, 48–61.