

Jul 29th, 4:30 PM - 5:30 PM

# Can a Validated Quality Instrument be Developed for Undergraduate Hospitality, Tourism, and Leisure Programs across Borders?

Jeou-Shyan Horng

*Jinwen University of Science & Technology, t10004@ntnu.edu.tw*

Chih-Ching Teng

*Fu-Jen Catholic University, chihchingteng@yahoo.com.tw*

Ming-Huei Lee

*Taiwan Hospitality & Tourism College, mhlee@tth.edu.tw*

---

Horng, Jeou-Shyan; Teng, Chih-Ching; and Lee, Ming-Huei, "Can a Validated Quality Instrument be Developed for Undergraduate Hospitality, Tourism, and Leisure Programs across Borders?" (2009). *International CHRIE Conference-Refereed Track*. 27.  
<http://scholarworks.umass.edu/refereed/Sessions/Wednesday/27>

This Empirical Refereed Paper is brought to you for free and open access by the Hospitality & Tourism Management at ScholarWorks@UMass Amherst. It has been accepted for inclusion in International CHRIE Conference-Refereed Track by an authorized editor of ScholarWorks@UMass Amherst. For more information, please contact [scholarworks@library.umass.edu](mailto:scholarworks@library.umass.edu).

## **CAN A VALIDATED QUALITY INSTRUMENT BE DEVELOPED FOR UNDERGRADUATE HOSPITALITY, TOURISM, AND LEISURE PROGRAMS ACROSS BOARDERS?**

Jeou-Shyan Horng

College of Tourism & Hospitality

Jinwen University of Science & Technology, Taiwan

Chih-Ching Teng\*

Department of Restaurant, Hotel & Institutional Management

FuJen Catholic University, Taiwan

and

Ming-Huei Lee

Taiwan Hospitality & Tourism College, Taiwan

### **ABSTRACT**

This study attempted to develop and cross-validate a transnational instrument for measuring the quality of international hospitality, tourism and leisure programs (HTLPs) from academic perspectives. Survey responses from HTLP teachers in Taiwan (N= 430) and the US (N = 303) were used to verify this instrument *via* exploratory and confirmatory factor analysis. The results identified the instrument consisting six quality standards, 12 dimensions, and 62 indicators, with a significantly better fit than other competing models. The six standards, in terms of relative value attached to each of the dimensions, are faculty, administrative management, curriculum and instruction, student achievements, strategic planning, and resources.

**Key words:** educational quality, transnational instrument, hospitality, tourism, leisure

### **INTRODUCTION**

Nowadays the issue of quality in higher education has drawn a great attention in the international context (López, 2005). For the past 20 years, the rapid increase in the number of undergraduate hospitality, tourism, and leisure programs (HTLPs) around the world has led to problems with quality control in education (Horng et al., 2009). In response to the needs and expectations of the industry and the public, the role of evaluation/accreditation has become an important requirement for HTLPs to ensure quality and remain competitive (Bosselman, 1996). However, the existing international evaluation/accreditation systems for HTLPs (e.g. CHRIE, NRPA, TedQual, and QAA) appear to mainly apply to a nation or single subject, and thus seem to lack global quality standards to undertake the review process to meet today's global challenges. To increase the global competitiveness in HTLPs, a transnational instrument which integrates different international evaluation/accreditation systems will be significant for quality assurance (Horng & Teng, 2007).

Van Vught & Westerheijden (1994) suggested that a general model across national borders would help achieve equal quality assurance of higher education in terms of educational internationalization. Specialized program accreditation led by professional organizations is deemed to be able to achieve internationalized

quality assurance of educational programs (van Damme, 2000). It is therefore obvious that a transnational quality instrument should be developed if HTLPs are to assure their quality across national boundaries.

Although previous evaluation/accreditation systems have developed a set of criteria to assess the quality of HTLPs, the measures used are often *ad hoc* and do not conform to systematic procedures for construct development (Horng et al., 2009). It would be more convincing to refine them into a new validated instrument in order to identify the quality dimensions and confirm the value attached to each dimension of HTLPs. However, little empirical evidence indicates that a transnational quality instrument in higher education would share the same quality dimensions among different countries. In order to identify whether a transnational quality instrument exists, Hofstede (1984) suggested that a cross-national comparison should be undertaken between countries with very different cultural and economic backgrounds. Based on Horng's et al. (2009) preliminary framework for HTLPs, this study used academic perspectives from Taiwan and the US to verify the transnational instrument for measuring the quality of international HTLPs.

This study aims to: (1) develop a transnational instrument for measuring the quality of HTLPs; (2) cross-validate this instrument by academic perspectives from Taiwan and the US; (3) examine the relative value attached to each of the quality dimensions of HTLPs from a transnational view. This study not only contributes to the theory development on transnational quality measurement, but also provides higher educational institutions and external quality assurance agencies with a global and valid tool to undertake transnational evaluation for HTLPs.

### THEORETICAL FRAMEWORK

In an attempt to develop a transnational quality framework for HTLPs, a new perspective which integrates the dimensions of CIPP model (Context, Input, Process and Product) and the framework of MBNQA (Melcolm Baldrige National Quality Awards) is proposed in this study.

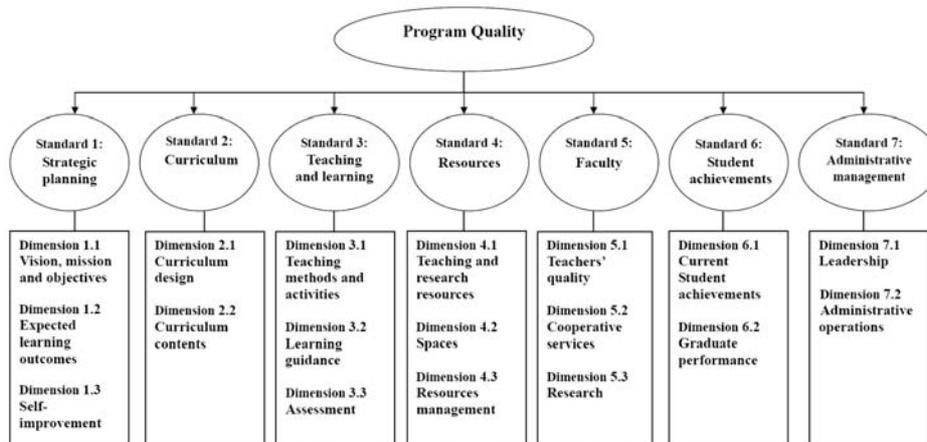


Figure 1 Preliminary framework for international HTLPs

With an integrated perspective, this study adopted the preliminary framework for HTLPs by Horng et al. (2009) in order to cross-validate its transnational validity. In the framework (see Figure 1), the higher-order construct (program quality) reflects seven standards referred to CIPP, MBNQA categories and international HTLP quality systems worldwide (ACPHA, TedQual, NRPA and QAA). While there are differences, the above systems share the commonality in their definitions and dimensions of quality for international HTLPs (Horng et al., 2009). In addition, the dimensions under seven standards are identified from the variables considered in previous research related to CIPP (e.g., Al-Turki & Duffuaa, 2003), MBNQA (e.g., Badri et al., 2006), and the handbooks of international HTLP quality systems. A total of 18 dimensions were developed and used to reflect seven quality standards at this stage.

## **METHOD**

### **1. Measures**

This study adopted Horng's et al. (2009) self-assessment questionnaire based on the quality indicators in the preliminary framework to examine the transnational validity of the instrument. Multiple item scales with 74 items in total were used to measure 18 dimensions of the seven constructs. Faculty members (respondents) were asked to rate the statements relating to their programs on a scale from 1 to 5, with 1 meaning "strongly disagree" and 5 "strongly agree". This study added one box to the scale, "not applicable" (N/A), for respondents who are not familiar with the statements regarding their programs in order to reduce bias.

### **2. Sampling and data collection**

Following the suggestion of Lewis et al. (2005), data should be collected from different samples in order to assess the measurement properties of the instrument. The study used data collected from faculty members of HTLPs in Taiwan and their counterparts in the US for further data analysis.

#### *2.1 Data collection (Taiwan sample)*

A questionnaire survey was conducted in Taiwan in 2007 with respondents who were full-time academics employed for more than a year in HTLPs. It was found that 34 hospitality management programs, 28 tourism programs, and 42 leisure programs exist in Taiwan (Department of Statistics, 2007). The research team then called up each program office to request the staff list or acquired the information via the program's website. Nine hundred and thirty questionnaires were distributed, of which 466 were returned. A total of 430 valid questionnaires were obtained, yielding a valid return rate of 46.2%.

#### *2.2 Data collection (US sample)*

To collect the US data, an on-line questionnaire survey was used. The questionnaire was set up on the website after back-translating into English from the original version. Researchers then contacted the faculty members of HTLPs via e-mails to request for completing and returning the questionnaire on the website. The

e-mail list of the US sample was from three sources, including I-CHRIE member list, NRPA member list, and the faculty information on the HTLP websites. A total of 2928 e-mail addresses were used to inform and remind the faculty members. In addition, an on-site self-administered survey was employed during 2007 I-CHRIE conference in the US. Out of 3008 distributed questionnaires, the response rate was 11.0%, representing a total of 328 returned questionnaires. Of the 328 collected, 25 were found to be unreliable, leaving a remaining 303 valid questionnaires which gave a valid return rate of 10.1%.

## **RESULTS**

### **1. Respondents' demographic profile**

Some differences were found between Taiwan and US samples in terms of demographic variables. In general, the demographic profile of the respondents from Taiwan and the US reveals that the majority of the US sample hold a doctoral degree and have worked relatively longer at the same institution; whereas the major portion of Taiwan respondents have at least graduate education and shorter tenure due to the rather recent development of HTLPs in Taiwan.

### **2. Item reduction and model modification**

To confirm the items of TIHTLP, EFA was conducted on Taiwan sample. A principal axis factoring in conjunction with oblique rotation was used in order to extract factors from each quality standard. Eigenvalues of greater than 1 and scree test of the percentage of variance explained were used to decide the number of emerged factors. In addition, items with a factor loading over 0.50 were kept. The results of the EFA suggested that two standards (curriculum, teaching and learning) were consolidated into one; and a total of 12 factors (dimensions) were extracted instead of original 18 dimensions. The results also showed that 12 items were removed due to low factor loadings.

Next, the second EFA was conducted on the remaining 62 items using the same method. The results showed that the modified model retained six standards, 12 dimensions, and 62 items. The explained variance of each standard of TIHTLP ranges from 55.07% to 66.75%. In terms of construct reliability, the Cronhach's *alpha* value of each standard ranges from 0.84 to 0.95, which indicates that the constructs in the modified model have good internal consistency.

### **3. Transnational validation of modified model**

The transnational validity of TIHTLP may be derived from support for the modified model using CFA with independent samples (Bagozzi, Yi, & Phillips, 1991). For the purpose of cross-validation, researchers used the LISREL 8.80 software package with the maximum likelihood method to perform a higher-order CFA on the US sample (N = 303). A second-order CFA was used because it is parsimonious and consistent with the assumption of the multidimensional framework of TIHTLP.

The results of a second-order CFA model of TIHTLP show that all goodness-of-fit indices are above acceptable standards; thus  $\chi^2_{(48)} = 172.72$  ( $p < 0.01$ ), GFI = 0.91, AGFI = 0.86, CFI = 0.97, NNFI = 0.96, RMSEA = 0.09, SRMR = 0.05. They indicate that the overall fit of the hierarchical CFA model is satisfactory. Lewis et al. (2005) suggests that the magnitude for all paths between the construct and the underlying factors in the higher order model should better be with significant  $t$ -values to provide further supporting evidence of a viable higher order model. Figure 2 shows that the standardized values for the estimates are all significant at the 0.01 level ( $t > 2.58$ ). The standardized loadings ( $\lambda$ s) of the first-order factors (ranging from 0.49 to 0.89) also reach significant levels, which suggest reasonable convergent validity (Jöreskog & Sörbom, 1993).

In addition, the direct effects of the higher-order factor of program quality on the lower-order factors are very strong (ranging from 0.75 to 0.97), which result in relatively small proportions of unexplained variance for the first-order factors (Kline, 1998). As Kline (1998) points out, the standard second-order loading is the standard regression weight of each of the first-order factors' loading on to the overall higher-order construct. The factor loadings ( $\Gamma$ ) of "program quality" relative to each first-order factor are the relative value attached to each of the quality dimensions by faculty who responded to the survey. As shown in Figure 2, all the first-order factors (standards) load very well onto the second-order factor (program quality). The results support that six quality standards of TIHTLP all contribute greatly to a program's quality.

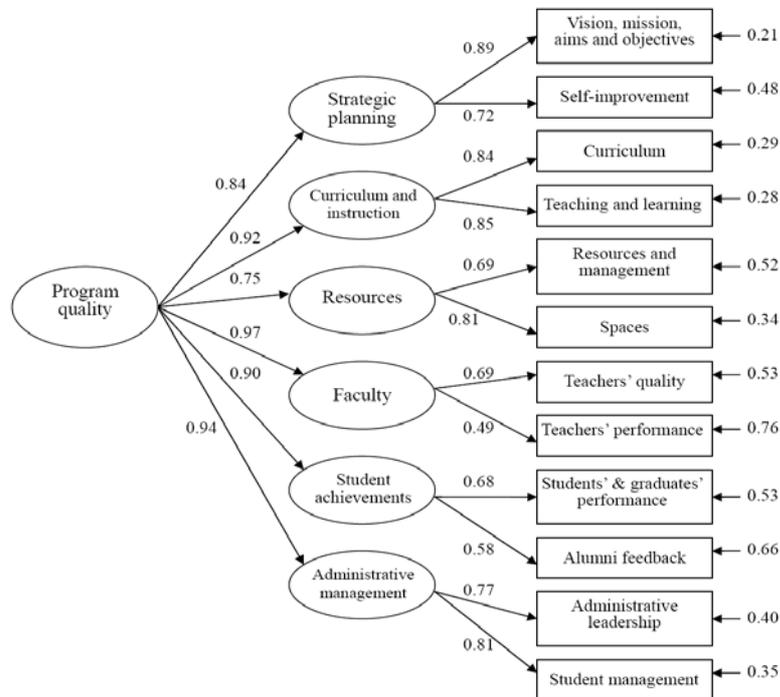


Figure 2 A second-order CFA model of TIHTLP and the standardized solution

#### 4. Model comparisons

The goodness-of-fit of the hypothesized second-order model with six dimensions (modified model) was tested in comparison to three other competing models (including null model, one-factor model, and preliminary second-order model with seven dimensions) through sequential  $\Delta\chi^2$  tests. A significant difference in  $\chi^2$  between models indicated that the specified relations among the variables in one model were a significantly better representation of the data under analysis. As shown in Table 1, each of the  $\Delta\chi^2$  tests was significant, demonstrating the superiority of the modified model over all competing models. Also, the goodness-of-fit indices for the modified model performed significantly better than all competing models, indicating that the higher order model with six dimensions was a better structured TIHTLP.

Table 1 Goodness-of-fit indices for model comparisons

| Models   | $\chi^2$ | <i>df</i> | $\chi^2/df$ | $\Delta\chi^2$ ( $\Delta df$ ) | GFI  | CFI  | NNFI | RMSEA |
|--|----------|-----------|-------------|--------------------------------|------|------|------|-------|
| Null model   | 2616.8   | 60        | 43.6        | ---                            | 0.28 | 0.49 | 0.48 | 0.38  |
| One-factor model                                       | 319.4    | 54        | 5.91        | 2297.4(6)**                    | 0.85 | 0.94 | 0.93 | 0.13  |
| Second-order model with seven dimensions (preliminary) | 496.4    | 128       | 3.88        | 177.0(74)**                    | 0.85 | 0.97 | 0.95 | 0.10  |
| Second-order model with six dimensions (Modified)      | 172.7    | 48        | 3.59        | 323.7(80)**                    | 0.91 | 0.97 | 0.96 | 0.09  |

Note:  $n = 303$ .  $\Delta\chi^2$  refers to a difference between the model for that row and the model directly above.

#### DISCUSSION AND CONCLUSIONS

There is a pressing need of a valid instrument for measuring the quality of HTLPs across borders to meet today's highly competitive global challenges. This study adopted Horng's et al. (2009) preliminary framework to develop and cross-validate a new transnational instrument for HTLPs with academic perspectives from Taiwan and the US. Through the transnational validation of TIHTLP, support was found for the propositions that TIHTLP is composed of multiple dimensions and could be integrated with CIPP, MBNQA, and current quality assurance systems for HTLPs. A modified model with six dimensions and 12 indicators, consistent with a priori categories based on theory, were found using EFA with the Taiwan sample. CFA with the independent sample of the US faculty members showed a significantly better fit for the modified second-order model than other three competing models. Each standard and dimension of TIHTLP demonstrated high reliability with internal consistency. With respect to convergent validity, support was also found that six standards of TIHTLP all contribute greatly to the quality of a program.

In addition to the empirical support, this study responds to the call for a greater need of quality measurement in the international context (López, 2005; Becket & Brookes, 2008). TIHTLP has been confirmed as a transnational assessment tool which could provide useful information to refine the judgment for HTLP quality with global standards. Specifically, this study provides insights into the relative value

attached to each of the TIHTLP dimensions by academics. The factor loadings of “program quality” relative to each first-order construct indicate the relative importance of each quality standard. The results show that each standard has a very high factor loading. Among the six standards, faculty ( $\gamma_{21} = 0.97$ ), administrative management ( $\gamma_{41} = 0.94$ ) and curriculum and instruction ( $\gamma_{11} = 0.92$ ) have the highest loadings; next come student achievements ( $\gamma_{51} = 0.90$ ) and strategic planning ( $\gamma_{61} = 0.84$ ); the last is resources ( $\gamma_{31} = 0.75$ ). Thus it is clear that, in the perception of HTLP academics, these six quality standards all make a significant contribution to a program’s quality.

Upon a closer look, the respondents believe that “inputs” such as faculty and curriculum, and “processes” such as instruction, are very important factors in determining the quality of HTLPs. The results support that curriculum quality, effective teaching and the enhancement of student learning outcomes are essential elements in the management of education quality (Lumby, 2001). Student achievements are identified as the “output” factor which also carried large weight in TIHTLP. Collectively, more attention should be given on what makes a good teacher and how to enhance overall student learning experience in order to improve student achievements (Airey & Tribe, 2005).

Respondents believe that administrative management and strategic planning have a great impact on its quality. This confirms the core elements and benefits of a TQM-based educational quality framework (Badri et al., 2006). The dimensions of administrative leadership and student management are deemed an important part of the transformation process of a program, and this process will affect an organization’s culture and overall quality. However, resources are considered relatively less impact among the six standards although this standard also carries considerably large weight. Although resources are the basis of educational “input”, resources alone cannot guarantee high quality of education since they do not transform into good learning experience automatically (Pike, 2004).

In terms of practical implications, TIHTLP can serve as an important reference for both the internal and external evaluation of HTLPs worldwide. TIHTLP could be used as a self-assessment tool to guide and provide information to assist a program’s self-study process. Program decision makers could use it as a scale to assess HTLPs’ overall quality as well as its specific quality dimensions. For external evaluation to be effective, the quality standards/ indicators of TIHTLP can serve as global benchmarks/ criteria for HTLP quality assurance systems across borders.

#### **LIMITATIONS AND DIRECTIONS FOR FUTURE RESEARCH**

This study uses specific group samples (Taiwan and the US) which may limit the possibility to generalize results. However, both the samples and the results provide a good starting point for understanding the transnational structure of HTLP quality which could be transferable beyond these two countries. Future research may extend to a wider range of samples from different countries to investigate the feasibility to use

TIHTLP as a cross-national quality assessment tool.

## REFERENCES

- Airey, D., & Tribe, J. (2005). Issues for the future. In D. Airey, & J. Tribe (Eds.), *An International Handbook of Tourism Education* (pp. 501-506). Oxford: Elsevier.
- Al-Turki, U., & Duffuaa, S. (2003). Performance measures for academic departments. *The International Journal of Educational Management*, 17(7), 330-338.
- Anderson, J. C., & Gerbing, D. W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological Bulletin*, 103(3), 411-423.
- Badri, M. A., Selim, H., Alshare, K., Grandon, E. E., Younis, H., & Absulla, M. (2006). The Baldrige Education Criteria for performance excellence framework: Empirical test and validation. *International Journal of Quality & Reliability Management*, 23(9), 1118-1157.
- Bagozzi, R. P., Yi, Y., & Phillips, L.W. (1991). Assessing construct validity in organizational research. *Administrative Science Quarterly*, 36, 421-458.
- Becket, N., & Brookes M. (2008). Quality management practice in the higher education — What quality are we actually enhancing? *Journal of Hospitality, Leisure, Sport & Tourism Education*, 7(1), 40-54.
- Bosselman R. H. (1996). Current perceptions of hospitality accreditation. *FIU Hospitality Review*, Fall, 77-84.
- Byrne, M. B. (2001). *Structural equation modeling with AMOS: Basic concepts, applications, and programming*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Department of Statistics (2007). University Statistics Data Search System, Ministry of Education, Taiwan. Available from [http://www.edu.tw/EDU\\_WEB/Web/STATISTICS/index.php](http://www.edu.tw/EDU_WEB/Web/STATISTICS/index.php) [Jan. 14<sup>th</sup>, 2007].
- Hofstede, G. (1984). *Culture's consequences*. Newbury Park, CA: Sage
- Hong, J.-S., & Teng, C.-C. (2007). An evaluation on hospitality, tourism, and recreation education—A transnational comparison study and evaluation model development. *Proceedings of 5th APac-CHRIE & 13th APTA Joint Conference* (pp. 1-13), Beijing, Mainland China.
- Hong, J.-S., Teng, C.-C., Lee, M.-H., & Liu, Y.-A., Baum, T. (2009). Evaluating the quality of undergraduate hospitality, tourism, and leisure programs. *Journal of Hospitality, Leisure, Sport & Tourism Education*, 8(1), pp. xx-xx.
- Jöreskog, K. C., & Sörbom, D. (1993). *LISREL 8 user's reference guide*. Chicago: Scientific Software.
- Kline, R. B. (1998). *Principles and practice of structural equation modeling*. New York: Guilford Press.
- Lewis, B. R., Templeton, G. F., & Byrd, T. A. (2005). A methodology for construct development in MIS research. *European Journal of Information System*, 14, 388-400.
- López, I. G. (2005). Building Universities of Quality: An analysis of the views of university students concerning their academic training. *Higher Education in Europe*, 30(3-4), 321-334.
- Lumby, J. (2001). Framing teaching and learning in the twenty-first century. In D. Middlewood & N. Burton (Eds.), *Managing the curriculum* (pp. 3-17). Thousand Oaks, CA: Paul Chapman.
- Pike, G. R. (2004). Measuring quality: A comparison of U.S. news rankings and NSSE benchmarks. *Research in Higher Education*, 45(2), 193-208.
- van Damme, D. (2000). Internationalization and quality assurance: Towards worldwide accreditation? *European Journal for Education Law and Policy*, 4, 1-20.
- van Vught, F. A., & Westerheijden, D. F. (1994). Towards a general model of quality assessment in higher education. *Higher Education*, 28(3), 355-371.