Travel Agency Managers' Employability Criteria on Taiwan Vocational College Graduates

Chung-Tai Wu

Department of Tourism & Leisure, Lee-Ming Institute of Technology

Email: ctwu@mail.lit.edu.tw

Abstract

The study applied a fuzzy analytic hierarchy process (AHP) to explore the criteria that travel agency managers look for pertaining to employability of vocational college graduates in Taiwan. A fuzzy set theory was integrated with an AHP technique for the assessment of employability criteria. The work collected 21 employability criteria from literature reviews, focus group of experts, and the Delphi technique. Criteria were categorized into four dimensions, namely the "generic skills", "disciplinary skills", professional attitude", and "career planning skills". A group of travel agency managers were asked to weigh up and rank the overall criteria by applying a fuzzy AHP. The results may provide vocational colleges the necessary information for designing suitable objective and curricula to improve students' competency towards employability in the travel industry.

Keywords: Delphi technology, Employability, Fuzzy AHP, Professional skill, Travel agency

1. Introduction

The career education system had undergone rapid changes over the last 20 years in Taiwan. Three Institutes of Technology and 74 Vocational Junior Colleges existed in 1992. In 2011, there were 49 Universities of Science and Technology, 28 Institutes of Technology, and 15 Vocational Junior Colleges residing Taiwan and its territorial islands. Along with decreasing number of birthrates over the past decades, Colleges and Universities are facing tremendous challenges of attracting students to maintain the desired enrollment number. To meet this challenge, it is imperative for schools to offer students (and their parents) that prospective employability would await them upon graduation. In other words, the phenomenon of "unemployment upon graduation" should be avoided throughout the higher education system. Conversely, enterprise of Taiwan frequently faces the challenges of fulfilling human resource demands while unemployment number rises. The phenomena of the two coexist (enterprise having trouble fulfilling needed personnel while unemployment increases) can easily be traced to what vocational college students are being taught and trained which may not have suited the needs of the prospective industry.

There are many definitions of employability. Employability is not just about getting a job but about developing attributes and skills. The emphasis is less on "employ" but more on "ability" (Harvey, 2005). "Ability" or "competency" gained traction in the 1970's when a scholar

wrote a paper in the American Psychologist (McClelland, 1973). McClelland moved away from knowledge, skills, and attitude in "competency", and focused instead on specific self-image, values, traits, and motive dispositions for "occupational competency". Spencer and Spencer (1993) proposed five components of competency: motives, traits, self-concept, knowledge, and skill.

Mixed messages as to a college graduate's "employability" is too evident due to confusion associated with various definitions of "employability" (Harvey, 2001). How to match students' competency with employers' demands is the task of vocational colleges under a general notion of "employability". Mixed messages may be apportioned to what businesses are seeking in a graduate and what colleges claim to have been providing. Employers tend to be favorably disposed towards graduates with work experience, which includes but not limited to, formal, non-formal, short employment or placement with a company (Harvey, 2001).

Yorke and Harvey (2005) argued that alignment of higher education with workforce needs should be based on careful action by institutions to embed skills and attributes within instructional programs". Employers typically look for a more flexible, adaptable workforce in response to the volatility of market needs (Clark, 1997; Bennett, 2002). As part of this flexibility, employers are hiring and firing their employees more readily across industries as life-long employment is now scarce (Nolan & Wood, 2003). At the same time, the notion of graduates developing their "employability" skills in their first job at the expense of their initial employer is also disappearing (Davies, 2000). Thus, being work-related skills ready in additional to subject-specific skills ready are essential to a graduate's employability (Dench, 1997).

Nabi (2003) showed it is the portfolio of skill sets a graduate could offer being the differentiator between employment and underemployment. However, individual subject skills may not always meet employer requirements as there is a tension between formal education and vocational training (Foley et al., 2004). Nonetheless, there is also no clear, formal and universally accepted distinction made between skills acquired through education and those acquired through training (Bennett, 2002). As a result, there is an incompatibility between supply and demand of skilled employees, potentially resulting in dissatisfaction and disappointment for all concerned (Skinner et al., 2004).

Although close relations with business community are of crucial importance to schools in delivering employable graduates, this is not to say that vocational colleges should

deliver exactly what the industry requests. An important role for school is not only to follow trends and development in the industry but also to function as a medium between potential employers and employees (graduating students) in driving and stimulating industry development. Junghagen (2005) stated that continuous input from industry is essential to define future practice. Hence, the study looks into the tourism industry to find out what travel agencies of Taiwan view "employability" in vocational college graduates as their prospective employees. However, selection of employability criteria that suits the needs of a perspective travel agency is a complex task. A framework for evaluating the selection of employability criteria may provide some useful insights to help managers and/or supervisors to make a decision. Therefore, the purpose of the study is to explore the selection criteria of graduate employability for travel agency managers and establish an evaluative framework.

It should be noted that the importance of each employability selection criterion is unequal and that human judgments are subjective and ambiguous. Hence, it is essential to clarify the importance of employability criteria when travel agencies own limited human and capital resources. Therefore, the present study applies a fuzzy analytic hierarchy process (AHP) to objectively calculate the weights of the employability criteria.

2. Literature Review

Definitions of employability are abundant (Harvey, 2001; Forrier & Sels, 2003; DeGrip et al., 2004; Fugate et al., 2004). For example, Fugate et al. (2004) argued three components of employability: career identity, personal adaptability, and social and human capital. General speaking, a number of studies have related the reality of the job market to employability (Rajan, 1997; Rae, 2007; Guo & Van der Heijden, 2008). There are also studies relating (practical) training to employability (Mamgain & Parashar, 2000; Kagaari, 2007). In addition, a number of studied have related self-perception or confidence to employability (Tseng, 1972; Norman & Hyland, 2003; Rothwell & Arnold, 2007; Rothwell et al., 2008, 2009). Nonetheless, most studies pertaining to employability have focused on knowledge, skill sets, and policies across various nations and cultures (Harvey, 2000, 2001; Harvey et al., 2002; Van der Heijden, 2002; Cranmer, 2006; Cox & King, 2006; Thijssen et al., 2008).

Employability is about being capable of getting and keeping fulfilling work. More comprehensively, employability is the capability to move self-sufficiently within the labor market to realize potential through sustainable employment (Hillage & Pollard, 1998). Four elements of employability as proposed by Hillage and Pollard (1998) are: employability assets (knowledge, skill, attitude), deployment (career management skills, including job search skills), presentation (job getting skills, e.g. C.V. writing and interview techniques), and personal circumstances (family responsibilities and external factors such as opportunities in the labor market). However, Van der Heijde and Van der Heijden (2006) presented an instrument for measuring employability based on a five-dimensional conceptualization of employability.

According to Knight and Yorke (2003), graduate employability is "*a set of achievements, understandings and personal attributes that make individuals more likely to gain employment and be successful in their chosen occupations*" (p. 22). The USEM model (Knight & Yorke, 2003; Yorke,2005; Yorke & Harvey, 2005; Yorke & Knight, 2006) includes Understanding, Skills, Efficacy beliefs, and Metacognition. McQuaid and Lindsay (2005) presented a broad framework for analyzing employability built around individual factors, personal circumstances, and external factors. McQuade and Maguire (2005) identified a number of learning models for the delivery of technical skills, interpersonal and intrapersonal skills via Programme for University-Industry Interface (PUII).

Dacre Pool and Sewell (2007) saw employability as having a set of skills, knowledge, understanding, and personal attributes that make a person more likely to choose and secure occupations in which they can be satisfied and successful. The essential components of graduate employability as defined by the Career EDGE model (Dacre Pool & Sewell, 2007; Sewell & Dacre Pool, 2010; Dacre Pool et al., 2014) are: Career (development learning), Experience (work and life), Degree subject knowledge (understanding and skills), Generic skills (including enterprise skills), and Emotional intelligence. Generic skills may also be referred to as core skills, key skills, or transferable skills. From the five components of Career EDGE, Reflection and Evaluation is derived. The derived Reflection and Evaluation would render Self-esteem, which also comes from Self-efficacy and Self-confidence. With self-esteem, self-efficacy, and self-confidence, employability may be followed.

In the job market, top-level managers mainly need conceptual skills while supervisors strongly need technical skills in order to manage employees in their specific area of specialty. People employed at all levels of management need human skills in order to interact and communicate with their employees and other managers, while technical skills have significant importance for newcomers' success (Guo & Van der Heijden, 2008). Bhanugopan and Fish (2009) found employers are generally satisfied with the skill levels of graduates at a technical level but concerned with "general skills" and "personal attributes".

In relation to skills development, teamwork is useful in learning real-world communications and decision-making, as well as in business planning and subsequent tracking and rectification of individuals' and teams' oversights. For example, in Sri Lanka, graduates of both genders identified problem-solving, self-confidence, teamwork, and learning skills as important employability skills (Wickramasinghe & Perera, 2010). However, only male graduates identified creative and innovative thinking to be important while a positive attitude towards work was identified only by female graduates.

3. Framework

The process of establishing a framework for employability selection criteria was divided into two separate parts. In the First Part, the evaluation dimensions and criteria of employability selection were determined using a literature review, a focus group of travel agency managers, and the

Delphi technique. A series of selection-related criteria was collected from the literature concerning employers' selection. The focus group is consisted of five travel agency managers and three scholars and was conducted to modify, add, and delete criteria. Finally, 28 travel agency managers were invited to participate in an expert survey to access criteria suitability and confirm the final selection criteria. The Second Part applied the fuzzy AHP to judge the appropriate weighting for each selection criterion and establish an evaluation framework.

3.1 Development

Formation of the preliminary questionnaire was based on the analytic hierarchy process (AHP) (Saaty & Vargas, 2012). The literatures review and interviews with scholars and travel agency managers provided the basis for the construct of the questionnaire. Four dimensions were identified for vocational college graduates' employability as perceived by travel agency managers. They are: (1) generic skills, (2) disciplinary skills, (3) professional attitude, and (4) career planning skills.

Evaluation of "Generic Skills" was achieved by a 5-item scale. Generic skills had been referred as "key skills" (Nabi, 2003) and "soft skills" (Finch et al., 2013) in which the literature stated that employers place the highest importance on soft skills and the lowest importance on academic reputation. The first item used in this construct, communication skill, may be oral communication and/or written communication (Nabi, 2003; Qenani et al., 2014). In addition, communication and professionalism have widely been known as the dominant characteristics of soft skills (Rynes et al., 1997; Lievens & Sackett, 2012). The next item, teamwork (Riebe et al., 2010; Qenani et al., 2014) or team-working skill (Avramenko, 2012; Jackson et al., 2014), was taken from the concept of team skills (Fripp, 1997; King & Newman, 2009; Wickramasinghe & Perera, 2010).

Unlike Hong Kong and Singapore, vast majority of the Chinese population in China and Taiwan have limited acquaintanceship to foreign languages. Hence, second language skill (namely English or Japanese) has always been viewed by employers as a bonus skill to have among prospective employees. Inclusion of this item had also been found in Wang et al. (2010).

The concept of the last two items came from the uniqueness of the travel agency industry in Taiwan. Because certification of tour group leader is mandated by the Tourism Bureau of Taiwan, a travel agency would have the managerial flexibility to designate any of its certified employees to be the tour group leader upon short notice. A vocational college graduate with certification of tour group leader would have the advantage over other employment applicants, thereby inclusion of this item. Because of demanding workloads across the travel agency industry, physical strength is also an important employment factor for sustaining the grinding of daily workload.

"Disciplinary Skills" were measured using a 7-item scale in which other studies had often referred as "technical skills" (McQuade & Maguire, 2005; Guo & Van der Heijden, 2008; Bhanugopan & Fish, 2009), "job-specific technical skills" or "functional skills" (Finch et al., 2013). The concept

of the 7-item measurement mostly came from the travel agency industry including airline ticketing skill, team operation skill, marketing skill of tour product, tour planning and execution skill, electronic commercial affairs' skill, crisis management skill, and cost analysis skill. These seven items were job-specific technical skills relating to workloads typically required within travel agency operation. It must be noted here that a noteworthy technical skill, the numeracy skill, had widely been included in a number of literatures (Rosenberg et al., 2012; Jackson et al., 2014) but intentionally omitted among the 7-item scale. Discussion with travel agency managers determined that there is no necessity to include numeracy skill as one of its scale items. The view had also been validated by Durrani and Tariq (2012) that travel industry appeared to be the least stringent on numeracy skills across employment sectors.

"Professional Attitude" was measured by a 5-item scale. In Nabi (2003), it is rather vague that scale items such as "autonomous learning", "independence", "application", and "reflection" were categorized under "academic/intellectual skills" while items such as "planning" and "initiative" were categorized under "personal skills". Instead, the study would take the concept of Nabi (2003) to form an alternative construct, "professional attitude". The construct of "professional attitude" is also similar to the concept of "personal attributes" by Bhanugopan and Fish (2009). The five items of measurement include "learning initiative", "professional ethnics and morals", "self-reflection", "stability and resist pressure", and "work dedication spirit".

"Career Planning Skills" were measured using a 4-item scale which came from the concept of "high-level transferable skills" (McQuaid & Lindsay, 2005), "personal attributes" (Bhanugopan & Fish, 2009), and "career planning" (Wu et al., 2014). The four items included in the scale are "understanding of professional trend", "self-marketing skill", "lifelong-learning skill", and "global perspective". The item "understanding of professional trend" came from the concept of "visionary" (Bhanugopan & Fish, 2009). The item "self-marketing skill" came from the concept of "self-promotion" (Davies, 2000). The item "lifelong-learning skill" came from the concept of "learning skills" (Wickramasinghe & Perera, 2010). Travel agency provides travel and tourism related services to the public on behalf of suppliers worldwide (e.g. airlines, hotels). Hence, the topic of internationalization was brought up repeatedly during discussion with scholars and travel agency managers, allowing formation of the last item "global perspective".

After discussions among the experts, a total of 21 items and explanations were reserved to develop a Delphi questionnaire in the next phase. The Delphi technique elicits and refines group judgment based on the idea that a group of experts is better than a single one when an exact knowledge is not readily available. Taylor and Judd (1989, pp. 95-99) argued that the most important step of the Delphi technique is the selection of experts. Mitchell (1991) defined an expert as someone who has knowledge of, or who has acquired special skills in, a particular subject. The study chose travel agency managers with over 20 years of experience in the tourism industry. Murry and Hammons (1995) proposed that the Delphi technique shall summarize expert opinions on a range

from 10 to 30. Therefore, 28 travel agency managers were invited to participate in an expert survey. These experts were asked for their opinions on the 21 evaluation criteria, in accordance with the Delphi survey method. Anchors of the five-point Liker-type scale (1 = strongly disagree, 2 = tend to disagree, 3 = neutral, 4 = tend to agree, 5 = strongly agree) were used to explore the suitability of each criterion.

In the first round of the Delphi technique, open questions were added to attract more information that could potentially clarify the topic, per recommendations from Taylor and Judd (1989, pp. 95-99). However, addition of new criterion was not resulted from the open questions. Consensus was reached for criteria with low coefficient of variance (C.V.). After deletion and modification to the initial criteria, most notably the deletion of two criteria in: "marketing skills for tour products" and "skills for electronic commercial affairs" under the "Disciplinary Skills" dimension, the adjusted questionnaire was then distributed again to the same experts for the second round of the Delphi technique. Result of the second round Delphi rendered 19 items for the evaluation of vocational college graduates' employability by travel agency managers.

The second round of the Delphi technique produced the same results from the same experts. A *t*-test was used to evaluate if the experts' opinions on the first and second rounds were similar. The results exhibited a significance level of the *p*-value exceeding .05 for all criteria. That means there was no significant difference in the mean scores between Round 1 and Round 2 of the Delphi technique. The results validated the notion that the experts had reached a consensus on all criteria. Finally, the research categorized the 19 criteria into four dimensions, based on previous literatures and the experts' opinions.

3.2 Fuzzy AHP

The study incorporates the fuzzy set theory on AHP to evaluate the performance of each criterion. Based on their relative performance with respect to one or more criteria of interest, the AHP is a quantitative method for selection of alternatives (Saaty & Vargas, 2012). The AHP can transform complex problems into a simple hierarchic structure through constructing pairwise comparisons of individual judgments rather than attempting to prioritize an entire list of criteria (Saaty & Vargas, 2012). However, the shortcoming of the AHP is its inability to incorporate the inherent uncertainty and imprecision associated with mapping the decision makers' perceptions to exact numbers (Deng, 1999). In addition, the AHP is incapable of reflecting human thinking because the decision-making process is ambiguous. Therefore, fuzzy-set theory is a useful tool to deal with vague human thoughts. A number of studies have combined the fuzzy theory with AHP to compensate the aforementioned limitation (Vahidnia et al., 2009; Hsu et al., 2010). The natural of ambiguity in the decision-making is approximated with fuzzy number in the input of the fuzzy AHP (Feng, 1995; Vahidnia et al., 2009). Therefore, the study uses fuzzy AHP to analyze data where the eigenvector method is used to calculate the weights of each criterion. Application of the fuzzy AHP is elaborated as follows.

Pairwise comparison method is used to rank the alternatives of an item that are formulated and solved in a hierarchical structure, as shown in Equation (1) where A_n is the set of elements with a_{ij} being a quantified judgment on a pair of elements A_i and A_j.

$$A = [a_{ij}] = \begin{array}{c} \\ C_1 \\ C_2 \\ \vdots \\ C_n \end{array} \begin{array}{c} C_1 \quad C_2 \quad \cdots \quad C_n \\ \begin{bmatrix} 1 & a_{12} & \cdots & a_{1n} \\ 1/a_{12} & 1 & \cdots & a_{2n} \\ \vdots & \vdots & \ddots & \vdots \\ 1/a_{1n} & 1/a_{2n} & \cdots & 1 \end{bmatrix} \end{array} \quad (1)$$

Fuzzy numbers are substituted into comparison matrix to deal with criteria measurement of the AHP and determine the fuzzy consensus problem in the judgment. Adopting from Chang et al. (2008), fuzzy perception can be expressed by the following Equations.

$$(a_{ij}{}^\alpha) \cdot R = [R \cdot L_{ij}{}^P] + (1 - R) \cdot H_{ij}{}^P] \quad (2)$$

$$L_{ij}{}^P = (M_{ij} - L_{ij}) \cdot P + L_{ij} \quad (3)$$

$$H_{ij}{}^P = H_{ij} - (H_{ij} - M_{ij}) \cdot P \quad (4)$$

where P = preference ($0 \le P \le 1$),

R = risk tolerance ($0 \le R \le 1$),

L = the minimum numerical value for a consensus among experts,

H = the maximum numerical value for a consensus among experts,

M = the geometric mean, and

$i, j = 1, 2, 3 \ldots n$.

In the Equations, the range of uncertainty is the greatest when $P = 0$. The P value is a number between 0 and 1 for uncertainty emulation in the analysis. The variance of decision making decreases with increased P. The degree of pessimism among decision makers is expressed by R. When $R = 0$, the decision makers are optimistic and the upper bound H_{ij} number is given. Conversely, when $R = 1$, the decision makers are pessimistic and the lower bound L_{ij} number is given, representing low consensus among experts. Hence, the single pairwise comparison matrix can be expressed in the following Equation.

$$(A^\alpha)^\lambda = [(a_{ij})^\lambda] = \begin{array}{c} \\ C_1 \\ C_2 \\ \vdots \\ C_n \end{array} \begin{array}{c} C_1 \qquad C_2 \qquad \cdots \qquad C_n \\ \begin{bmatrix} 1 & (a^\alpha{}_{12})^\lambda & \cdots & (a^\alpha{}_{1n})^\lambda \\ (a^\alpha{}_{21})^\lambda & 1 & \cdots & (a^\alpha{}_{2n})^\lambda \\ \vdots & \vdots & \vdots & \vdots \\ (a^\alpha{}_{m1})^\lambda & (a^\alpha{}_{n2})^\lambda & \cdots & 1 \end{bmatrix} \end{array} \quad (5)$$

Calculation of eigenvalue and eigenvector is expressed in the following equations.

$$(a^\alpha)^\lambda \cdot \mathbf{W} = \lambda_{max} \cdot \mathbf{W} \quad (6)$$

$$[(a^\alpha)^\lambda - \lambda_{max}] \cdot \mathbf{W} = 0 \quad (7)$$

where $(a^\alpha)^\lambda$ = the single pairwise comparison matrix, and

$\mathbf{W}$ = the eigenvector of $(a^\alpha)^\lambda$, with

$0 \le R \le 1, 0 \le P \le 1$.

The consistency index (CI) to measure any inconsistency within the judgments in each pairwise comparison matrix is formulated as follows.

$$CI = (\lambda_{max} - n) / (n - 1) \qquad (8)$$

where λ_{max} = the maximum eigenvalue, and
$\quad n$ = dimension of the matrix.

The consistency ratio (CR) is defined as the ratio of the CI to the random index (RI).

$$CR = CI / RI \qquad (9)$$

Saaty and Vargas (2012) suggested that CR should be less than 0.05 for $n = 3$. For $n = 4$, CR should be less than 0.08. For $n = 5$, CR should be less than 0.10 to get a sufficiently consistent matrix.

4. Empirical Results

Based on the experts' opinions and suggestions, dimensions for employability of vocational college graduates were defined and evaluated. Level 1 represents the four evaluation dimensions of employability in the travel industry. After two rounds of the Delphi technique, 19 employability criteria are included in Level 2 of the hierarchical structure. Table 1 and Table 2 describe the aggregated pairwise comparison matrices for Level 1 and Level 2 of the fuzzy AHP. The numbers on the upper-right side of the diagonal is the reciprocal of the reversed triangle that represents the relative importance between these two criteria. Using the "Generic Skills" dimension as an example in Table 2, when P and R are both set to be 0.5, the illustration of the calculation procedure though Equations (2), (3), and (4) is as follows:

$L_{12}^{0.5} = (1.226 - 1/5) \times 0.5 + 1/5 = 0.713$

$H_{12}^{0.5} = 8 - (8 - 1.226) \times 0.5 = 4.613$

$(a_{12}^{0.5})^{0.5} = [(0.5 \times 0.713) + (1 - 0.5) \times 4.613] = 2.663$

$(a_{21}^{0.5})^{0.5} = 1 / [(a_{12}^{0.5})^{0.5}] = 1 / 2.663 = 0.376$

Thus, 2.663 in Table 2 means A1 (communication skill) is 2.663 times more important than A2 (teamwork skill). Taking the middle road, the study further assigned 0.5 for the value of P and R, depending on the opinions of the travel agency managers. Finally, the eigenvalue and eigenvector of each pairwise comparison matrix were calculated using Equation (6) and Equation (7).

The consistency of each comparison matrix was tested using Equation (8) and Equation (9). The results of the consistency test showed that the CR values of the comparison matrix from each of the experts are all smaller than 0.1 which indicates consistency. For example, the CR in Table 1 is 0.0046 and the CR in Table 2 is 0.0349. Therefore, the estimate of the eigenvector for each pairwise comparison matrix is more than acceptable.

Equation (8) and Equation (9) calculated not only the eigenvalue and eigenvector but also estimated the relative weights of each employability criterion. The relative weights of the four employability dimensions and 19 criteria are shown in Table 3. Table 3 presents the overall scores and priorities for each employability criterion. Fuzzy AHP results indicate that the top four criteria perceived by travel agency managers for employability of vocational college graduates are (1) communication skill (at 0.2176), (2) lifelong-learning skill (at 0.2159), (3) work dedication spirit (at 0.1790), and (4) crisis management skill (at 0.1728).

5. Discussion

The study revealed some significant findings among the four evaluation dimensions of employability in the travel industry. The findings indicated that travel agency managers prioritize "Genetic Skills (0.4649)" and "Professional Attitude (0.3592)". Conversely, "Disciplinary Skills (0.3240)" and "Career Planning Skills (0.2963)" were viewed as lower priorities of employability in the travel industry. The results support a growing body of research that had identified "Generic Skills" as the most important competencies employers look for when hiring new graduates (Nabi, 2003; Chamorro-Premuzic et al., 2010; Finch et al., 2012, 2013). It must be noted that "Generic Skills" were referred as "key skills" in Nabi (2003) and "soft skills" in Finch et al. (2012, 2013). What repeatedly contributed to existing findings that had suggested "key skills" or "soft skills" as the dominant factor of employability by employers are written and/or verbal communication skills. Discrepancies may exist between written and verbal communication skills among various literatures. For example, Nabi (2003) found written communication skills to be more important than verbal communication skills while Finch et al. (2013) found verbal communication skills to have a much higher factor loading than written communication skills. Therefore, it is also of particular interest to examine individual items of each dimension.

The study did not find the necessity to divide written and verbal communication skills for employability in the travel industry. Instead, it was identified that vocational college graduates who demonstrate communication skills (under the dimension of "Generic Skills") will be more competitive in the travel industry than those who do not. The second highest weight was found in "life-long learning skill (0.2159)" under the dimension of "Career Planning Skills" which was perceived by travel agency managers as the least important dimension for employability. Recall that the item "life-long learning skill" came from the concept of "learning skills" by Wickramasinghe and Perera (2010) and the construct is a hybrid of "high-level transferable skills" (McQuaid & Lindsay, 2005), "personal attributes" (Bhanugopan & Fish, 2009), and "career planning" (Wu et al., 2014). In retrospect, the data suggests the item to be "personal attributes" of "Generic Skills" which would have placed the item under the highest ranked dimension of employability. To round out the other criteria under the "Career Planning Skills" dimension, "self-marketing skill" has the next highest weight at 0.1726, followed by "understanding of professional trend (0.1655)" and "global perspective (0.1480)".

The third highest weight was found in "work dedication spirit (0.1790)" under the dimension of "Professional Attitude" which was perceived by travel agency managers as the second most important dimension. Under the dimension of "Professional Attitude", the next highest weight is "Stability and resist pressure (0.1542)", followed by "learning initiative (0.1540)", "professional ethnics and morals (0.1395)", and "self-reflection (0.1198)". By and large, the data of "Professional Attitude" and "Career Planning Skills" would suggest these two dimensions to be "personal attributes". Recall that Bhanugopan and Fish (2009) defined

"general skills", "technical skills", and "personal attributes" as criteria of employability among senior-level undergraduate business students.

The fourth highest weight was found in "crisis management skill (0.1728)" under the dimension of "Disciplinary Skills" which was perceived as the third most important dimension of employability. Recall that "Disciplinary Skills" had widely been referred as "technical skills" to differentiate from "general skills" and "personal attributes". To round out the other criteria under the "Disciplinary Skills" dimension, "tour planning and execution skill" has the next highest weight at 0.1714, followed by "team operational skill (0.1600)", "airline ticketing skill (0.1536)", and "cost analysis skill (0.1392)".

6. Conclusions

The study showed that travel agency managers viewed "generic skills" and "professional attitude" to be much more important than "disciplinary skills" and "career planning skills" as exemplified by the disparity of the weights (0.4649 and 0.3592 for the top two criteria as compared to 0.3240 and 0.2963 for the two lower criteria). Tremendous implication of the findings would contradict with what most vocational college students and their respective parents had in mind while attending vocational colleges. In other words, students and their parents may have thought that acquiring "disciplinary skills" (or "technical skills" by most literatures) would be the route to employability as well as the reasons of attending vocational colleges. Contrary to what students and their parents have believed, travel agency managers view "generic skills" and "professional attitude" to be much more important than "disciplinary skills" pertaining to employability.

As of individual criteria, travel agency managers view "communication skills" to be the top importance. Travel agency managers also want employees to have the skill sets of "lifelong-learning" and "the spirit of work dedication". "Crisis management skill", "self-marketing skill", "teamwork skill", and "tour planning and execution skill" are other criteria of importance for employability. These criteria may come from personal traits and not have been developed through schooling. It is recommended that vocational colleges of Taiwan shall focus more on these areas for the preparation of students' employability upon graduation. In addition, work-integrated-learning (Fleming & Haigh, 2017) via practical training may also be considered to enhance students' workplace readiness. Past studies had shown entrepreneurship, professional development, work with others, self-management, communication and problem solving to be employability skills needed by young graduates (Ng et al., 2021), hence suggesting education institutions to work closely with industry stakeholders to get employers engaged with the work-integrated-learning programs and subsequently equip young graduates for better employability opportunities. The development of 21st century skills by utilizing the project-based learning (St. Louis et al., 2021) framework, thereby allowing undergraduate students to hone their 21st century skills and prepare for transition and success within the workplace may also be considered.

7. References

1. Avramenko A 2012. Enhancing students' employability through business simulation. *Education + Training*, 54(5): 355-367.

2. Bennett R 2002. Employer's demands for personal transferable skills in graduates: A content analysis of 1000 job advertisements and an associated empirical study, *Journal of Vocational Education + Training*, 54(4): 457-475.

3. Bhanugopan R, Fish A 2009. Achieving graduate employability through consensus in the South Pacific island nation. *Education + Training*, 51(2): 108-123.

4. Chamorro-Premuzic T, Arteche A, Bremner AJ, Greven C, Furnham A 2010. Soft skills in higher education: importance and improvement ratings as a function of individual differences and academic performance. *Educational Psychology: An International Journal of Experimental Educational Psychology*, 30(2): 221-241.

5. Chang CW, Wu CR, Chen HC 2008. Using expert technology to select unstable slicing machine to control wafer slicing quality via fuzzy AHP. *Expert Systems with Applications*, 34(3): 2210-2220.

6. Clarke A 1997. Survey on employability. *Industrial and Commercial Training*, 29(6): 177-183.

7. Cox S, King D 2006. Skill sets: An approach to embed employability in a course design. *Education + Training*, 48(4): 262-274.

8. Cranmer S 2006. Enhancing graduate employability: Best intentions and mixed outcomes. *Studies in Higher Education*, 31(2): 169–184.

9. Dacre Pool L, Sewell P 2007. The key to employability: Developing a practical model of graduate employability. *Education + Training*, 49(4): 277-289.

10. Dacre Pool L, Qualter P, Sewell PJ 2014. Exploring the factor structure of the CareerEDGE employability development profile. *Education + Training*, 56(4): 303-313.

11. Davies L 2000. Why kick the "L" out of "Learning"? The development of students' employability skills through part-time working. *Education + Training,* 42(8/9): 436-445.

12. DeGrip A, Van Loo J, Sanders J 2004. The Industry Employability Index: Taking into account of supply and demand characteristics. *International Labor Review*, 143(1): 211-33.

13. Dench S 1997. Changing skill needs: What makes people employable? *Industrial and Commercial Training*, 29(6): 190-193.

14. Deng H 1999. Multicriteria analysis with fuzzy pairwise comparison. *Fuzzy Systems Conference Proceedings*, 2: 726-731.

15. Durrani N, Tariq VN 2012. The role of numeracy skills in graduate employability. *Education + Training*, 54(5): 419-434.

16. Feng C 1995. Fuzzy Multicriteria decision-making in distribution of factories: An application of approximate reasoning. *Fuzzy Sets and Systems*, 71(2): 197-205.

17. Finch DJ, Hamilton LK, Baldwin R, Zehner M 2013. An exploratory study of factors affecting undergraduate employability. *Education + Training*, 55(7): 681-704.

18. Finch D, Nadeau J, O'Reilly N 2012. The future of marketing education: A practitioner's perspective. *Journal of Marketing Education*, 35(1): 54-67.

19. Fleming J, Haigh NJ 2017. Examining and challenging the intentions of work-integrated learning. *Higher Education, Skills and Work-Based Learning*, 7(2): 198-210.

20. Foley M, Frew M, McGillivray D, McIntosh A, McPherson G 2004. Problematising "education" and "training" in the Scottish sport and fitness, play and outdoor sectors. *Education + Training*, 46(5): 236-245.

21. Forrier A, Sels L 2003. The concept employability: A complex mosaic. *International Journal of Human Resources Development and Management*, 3(2): 102-24.

22. Fripp J 1997. A future for business simulations? *Journal of European Industrial Training*, 21(4): 138-142.

23. Fugate M, Kinicki AJ, Ashforth BE 2004. Employability: A psycho-social construct, its dimensions, and its applications, and applications. *Journal of Vocational Behavior*, 65(1): 14-38.

24. Guo Z, Van der Heijden BIJM 2008. Employability enhancement of business graduates in China: Reacting upon challenges of globalization and labor market demands. *Education + Training*, 50(4): 289-304.

25. Harvey L 2000. An employability performance indicator. *Perspectives*, 4(4): 105-109.

26. Harvey L 2001. Defining and measuring employability. *Quality in Higher Education*, 7(2): 97-109.

27. Harvey L 2005. Embedding and integrating employability. *New Directions for Institutional Research*, 128: 13-28.

28. Harvey L, Locke W, Morey A. 2002. *Enhancing Employability, Recognizing Diversity*, London: Universities UK and CSU.

29. Hillage J, Pollard E 1998. Employability: Developing a framework for policy analysis. *Journal of Applied Psychology*, 64(5): 509-517.

30. Hsu YL, Lee CH, Kreng VB 2010. The application of Fuzzy Delphi Method and Fuzzy AHP in lubricant regenerative technology selection. *Expert Systems with Applications*, 37(1):419-425.

31. Jackson D, Sibson R, Riebe L 2014. Undergraduate perceptions of the development of team-working skills. *Education + Training*, 56(1): 7-20.

32. Junghagen S 2005. Working with business and industry to enhance curriculum development and student employability. *New Directions for Institutional Research*, 128: 69-81.

33. Kagaari JRK 2007. Evaluation of the effects of vocational choice and practical training on students' employability. *Journal of European Industrial Training*, 31(6): 449-471.

34. King M, Newman R 2009. Evaluating business simulation software: Approach, tools and pedagogy. *On the Horizon*, 17(4): 368-377.

35. Knight PT, Yorke M 2003. *Learning, Curriculum and Employability in Higher Education*, London: Rutledge Falmer.

36. Lievens F, Sackett PR 2012. The validity of interpersonal skills assessment via situational judgment tests for predicting academic success and job performance. *Journal of Applied Psychology*, 97(2): 460-468.

37. Mamgain R, Parashar V 2000. Enhancing employability of youth through education and training. *Journal of Labor Economics*, 43(4): 757-780.

38. McClelland M 1973. Testing for competence rather than intelligence. *American Psychologist*, 28(1): 1-14.

39. McQuaid R, Lindsay C 2005. The concept of employability. *Urban Studies*, 42(1): 197-219.

40. McQuade E, Maguire T 2005. Individuals and their employability. *Journal of European Industrial Training*, 29(6): 447-456.

41. Mitchell VW 1991. The Delphi technique: An exposition and application. Technology Analysis & Strategic Management, 3(4): 333-358.

42. Murry JW, Hammons JO 1995. Delphi: A versatile methodology for conducting qualitative research. Review of Higher Education, 18(4): 423-436.

43. Nabi GR 2003. Graduate employment and under-employment: Opportunity for skill use and career experiences amongst recent business graduates. *Education + Training*, 45(7): 371-382.

44. Ng PML, Chan J.Y, Wut TM, Lo MF, Szeto I 2021. What makes better career opportunities for young graduates? Examining acquired employability skills in higher education institutions. *Education + Training*, 63(6): 852-871.

45. Nolan P, Wood S 2003. Mapping the future of work, *British Journal of Industrial Relations*, 41(2): 165-74.

46. Norman M, Hyland T 2003. The role of confidence in lifelong learning. *Educational Studies*, 29(2/3): 261-272.

47. Qenani E, MacDougall N, Sexton C 2014. An empirical study of self-perceived employability: Improving the prospects for student employment success in an uncertain environment. *Active Learning in Higher Education*, 15(3): 199-213.

48. Rae D 2007. Connecting enterprise and graduate employability: Challenges to the higher education culture and curriculum? *Education + Training*, 49(8/9): 605-619.

49. Rajan A 1997. Employability in the finance sector: Rhetoric vs. reality. *Human Resource Management Journal*, 7(1): 67-78.

50. Riebe L, Roepen D, Santarelli B, Marchioro G 2010. Teamwork: Effectively teaching an employability skill. *Education + Training*, 52(6/7): 528-539.

51. Rosenberg S, Heimler R, Morote ES 2012. Basic employability skills: A triangular design approach. *Education + Training*, 54(1): 7-20.

52. Rothwell A, Arnold J 2007. Self-perceived employability: Development and validation of a scale. *Personnel Review*, 36(1): 23-41.

53. Rothwell A, Herbert I, Rothwell F 2008. Self-perceived employability: Construction and initial validation of a scale for university students. *Journal of Vocational Behavior*, 73(1): 1-12.

54. Rothwell A, Jewell S, Hardie M 2009. Self-perceived employability: Investigating the responses of post-graduate students. *Journal of Vocational Behavior*, 75(2): 152-161.

55. Rynes SL, Orlitzky MO, Bretz Jr RD 1997. Experienced hiring versus college recruiting: Practicing and emerging trends. *Personnel Psychology*, 50(2): 309-339.

56. Saaty TL, Vargas LG 2012. *Models, Methods, Concepts & Applications of the Analytic Hierarchy Process* (2nd Ed.), New York, NY: Springer Science & Business Media.

57. Sewell P, Dacre Pool L 2010. Moving from conceptual ambiguity to operational clarity: employability, enterprise and entrepreneurship in higher education. *Education + Training*, 52(1): 89-94.

58. Skinner D, Saunders MNK, Beresford R 2004. Towards a shared understanding of skill shortages: differing perceptions of training and development needs. *Education & Training*, 46(4/5): 182-193.

59. Spencer LM, Spencer SM 1993. *Competence at Work: Models for Superior Performance*, New York, NY: John Wiley & Sons, Inc.

60. St. Louis AT, Thompson P, Sulak, TN, Harvill ML, Moore ME 2021. Infusing 21st century development onto the undergraduate curriculum: The formation of the iBEARS network. *Journal of Microbiology & Biology Education*, 22(2): 1-8.

61. Taylor RE, Judd LL 1989. Delphi method applied to tourism. In S. Witt & L. Moutinho (Eds.), *Tourism Marketing and Management Handbook*, New York, NY: Prentice Hall.

62. Thijssen J, Van der Heijden BIJM, Rocco T 2008. Toward the employability-link model: current employment transition to future employment perspectives. *Human Resource Development Review*, 4(3): 25-37.

63. Tseng MS 1972. Self-perception and employability: A vocational rehabilitation problem. *Journal of Counseling Psychology*, 19(4): 314-317.

64. Vahidnia MH, Alesheikh AA, Alimohammadi A 2009. Hospital site selection using fuzzy AHP and its derivatives. *Journal of Environmental Management*, 90: 3048-3056.

65. Van der Heijde CM, Van der Heijden BIJM 2006. A competence-based and multidimensional operationalization and measurement of employability. *Human Resource Management*, 45(3): 449-476.

66. Van der Heijden BIJM 2002. Prerequisites to guarantee life-long employability. *Personnel Review*, 31: 44-61.

67. Wang J, Huyton J, Gao X, Ayres H 2010. Evaluating undergraduate courses in tourism management: A comparison between Australia and China. *Journal of Hospitality, Leisure, Sport & Tourism Education*, 9(2): 46-62.

68. Wickramasinghe V, Perera L. 2010. Graduates' university lecturers and employers perceptions towards employability skills. *Education + Training*, 52(3): 226-244.

69. Wu YL, Tsai YL, Chen CW 2014. Examining the experiences of career guidance, vocational self-concept, and self-perceived employability among science education majors in Taiwan. *Journal of Baltic Science Education*, 13(2): 182-190.

70. Yorke M 2005. Formative assessment in higher education: It's significance for employability, and steps towards its enhancement. *Journal of Tertiary Education and Management*, 11: 219-238.

71. Yorke, M, Harvey L 2005. Graduate attributes and their development. *New Directions for Institutional Research*, 128: 41-58.

72. Yorke M, Knight P 2006. Curricula for economic and social gain. *Journal of Higher Education*, 51: 565-588.

8. Figures and Tables

Table 1: Aggregated pairwise comparison matrix for Level 1

	A	B	C	D
A. Generic Skill	1.000	1.682	1.809	1.798
B. Disciplinary Skill	0.595	1.000	1.350	1.500
C. Professional Attitude	0.553	0.741	1.000	1.367
D. Career Planning Skills	0.556	0.667	0.732	1.000

CI = 0.0043; CR = 0.0046
CI = consistency index; CR = consistency ratio

Table 2: Aggregated pairwise comparison matrix for Generic Skills of Level 2

	A1	A2	A3	A4	A5
A1. Communication skill	1.000	2.663	2.274	1.683	1.983
A2. Teamwork skill	0.376	1.000	0.992	0.871	0.885
A3. Second language skill	0.440	1.008	1.000	1.367	1.405
A4. Certification of tour group leader	0.594	1.148	0.732	1.000	1.402
A5. Physical strength	0.504	1.130	0.712	0.713	1.000

CI = 0.0426; CR = 0.0349
CI = consistency index; CR = consistency ratio

Table 3: Weights of overall level and rank of criteria

Dimensions / Criteria	Individual Weights	Dimensions Rank	Overall Weights	Criteria Rank
A. Generic Skills	**.4649**	**1**		
A1. Communication skill	.4382		**.2176**	**1**
A2. Teamwork skill	.4120		.1717	6
A3. Second language skill	.2260		.1518	13
A4. Certification of tour group leader	.2127		.1470	15
A5. Physical strength	.2438		.1287	18
B. Disciplinary Skills	**.3240**	**3**		
B1. Airline ticketing skill	.2824		.1536	12
B2. Team operational skill	.2494		.1600	9
B3. Tour planning and execution skill	.2816		.1714	7
B4. Crisis management skill	.4008		**.1728**	**4**
B5. Cost analysis skill	.2645		.1392	17
C. Professional Attitude	**.3592**	**2**		
C1. Learning initiative	.3128		.1540	11
C2. Professional ethnics and morals	.2255		.1395	16
C3. Self-reflection	.2639		.1198	19
C4. Stability and resist pressure	.3136		.1542	10
C5. Work dedication spirit	.4778		**.1790**	**3**
D. Career Planning Skills	**.2963**	**4**		
D1. Understanding of professional trend			.1655	8
D2. Self-marketing skill	.2847		.1726	5
D3. Lifelong-learning skill	.5334		**.2159**	**2**
D4. Global perspective	.2846		.1480	14

旅行社經理對於台灣技職院校畢業生就業能力之評論標準

吳宗泰

黎明技術學院觀光休閒系

Email: ctwu@mail.lit.edu.tw

摘要

　　該研究應用模糊層次分析法 (AHP) 來探索旅行社經理如何評審台灣技職院校畢業生的就業能力之相關標準。本文利用模糊理論與層次分析法技術之結合而評估就業能力標準。這項工作從文獻綜述、焦點專家小組和德爾菲技術中收集了 21 項就業能力標準。 標準分為四個維度，即 "一般技能"、"學科技能"、"專業態度" 和 "職業規劃技能"。一群旅行社經理被要求以透過應用模糊層次分析法及整體標準進行權衡和排名。研究結果可為技職院校提供客觀及合適的課程，旨在提高學生在旅遊行業的就業能力。

關鍵詞：德爾菲技術、就業能力、模糊層次分析法、
　　　　專業技能、旅行社