

## A study of enterprises' employment terms and competences for technological and vocational school graduates in Taiwan

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**ABSTRACT:** This study is aimed at exploring enterprises' employment terms and the required competences of technological and vocational school graduates in Taiwan by using two methods, specifically content analysis and in-depth interviews. The former was used to analyse employment terms in the 104 Job Bank to understand the requirements of applicants in the commercial labour market, while the latter was used to explore the competences of applicants by interviewing personnel managers in four industries, including the food and beverage industry, the national trade industry, the financial industry, and the wholesale and retailing industry. The findings reveal that employers in businesses and the service industry placed great emphasis on the following competences of applicants: basic technique, information application, individual management skills and teamwork. The findings indicate that junior college graduates are the favourites in the labour market for commercial industries. Also, employers take study major, certification and experience into account when hiring employees.

### INTRODUCTION

The current occupational structure in Taiwan is undergoing a transformation as technology, the degree of automation and industry grow. In August 1993, the service industry occupied 58.03% of the employment structure. In particular, customer service and sales staff increased by an average of 2.8% annually. It is estimated that the number of workers in the customer service field will equal 2,199,000 people in 2014. The increasing numbers will be maintained at around 120,000 from 2001 to 2011 [1-3]. As a consequence, customer service and sales workers will be the workers most in demand in the labour force in the near future. Figures quoted in a report by the Council of Labor Affairs' Employment and Vocational Training Administration (EVTA) concerning popular occupations indicate that office clerks and workers in the financial and service sectors amount to 27.03%, which roughly amounts to a quarter of all job vacancies provided by the employment service centre. Regarding job vacancies in the business and service sectors, the need for accountants and salespeople is up to 32.36%. The work of professional assistants, office clerks and salespeople in these two sectors occupied the majority of job vacancies for both employers and employees [1-4].

Mid-level experts in Taiwan are mostly cultivated by the technical and vocational school system in response to industrial trends. The development of vocational education should correspond to the demands of enterprises. The employment rate among graduates in business sectors is highest at 25.78% [1]. The Council of Economic Planning and Development has suggested that under the influence of the amended ratio of senior high and vocational high schools, the number of graduates from senior high schools will grow by 1.4%, while the number of graduates from vocational high schools will fall by 3.4%. Therefore, student enrolments at higher vocational education institutions will be affected. In addition, the

expansion of higher vocational education and the updating of junior colleges have given rise to increasing numbers of vocational schools as well as subjects. Although the Ministry of Education in Taiwan has set controls on the level of growth, the majority of schools have not reached saturation point. In other words, the sum of students at technical and vocational schools is set to increase yearly in subsequent years.

Over the past few years, the birth rate has fallen and the channels for higher education have become more diversified. With an imbalanced supply and demand, technical vocational schools should enhance the nature of their organisation, create attractive school specialties, understand thoroughly industry demands, and adjust academic systems, subjects and courses to ensure the sustained relevance of educational institutions.

The National Association of Manufacturers (NAM) conducted the third national industry survey over the past decade to explore the cause of the economic recession in the USA. It was found that 80% of manufacturers blamed bad work quality, two-thirds thought the shortage of employment competences was responsible, 60% cited the lack of required skills, and 40% considered that the failure to boost efficiency was the culprit. Jasinski's survey indicated that over 75% of employers thought that graduates were not well prepared to enter the employment market, so employers appealed to the government to ensure quality education. Only by shortening this gap in technical skills can the estimated 120,000 vacancies in skilled positions projected for 2020 be filled [5][6].

National and international analyses of labour force demands and benefits are classified according to employment, income, employment rate, unemployment rate and the degree of labour contribution in order to understand the balance of supply and demand of human resources [7-12]. Since the late 1970s, non-monetary efficiency factors, such as working hours and the diverse application of professional abilities, have been taken

into consideration to estimate the value of human resources and education [13-23]. However, from the viewpoint of employers' demand for labour, Liu pointed out that employers were inclined to consider human capital when emphasising an applicant's capabilities or productivity [24]. When the candidate had relevant and recognised work experience, an educational degree from a junior college or university made little difference. So what are the employment requirements in different industries? What are relevant employment competencies? What are the requirements criteria for different levels of education? In this study, the authors aim to explore these issues by using content analysis and in-depth interviews to understand enterprises' employment competence demands and employment in order to explore their influences on vocational schools and their corresponding strategies, and to serve as a reference for vocational schools to adjust their courses in order to cultivate talent [25-30].

## METHODS AND IMPLEMENTATION

In this study, the 104 Job Bank database was used to analyse employment conditions. In addition, human resource departments or persons in charge of personnel departments in businesses and the service industry were selected to be the subjects for in-depth interviews. The findings can serve as a reference for business and administration departments to be used to cultivate talent that meets their needs [31].

### Methods

Content analysis and in-depth interviews were applied in this research as follows:

- The 104 Job Bank database was utilised to analyse industries' employment demands with regard to different occupational types, educational degrees, position types or ranks, as well as the required contents of different educational degrees;
- In-depth interviews were used to interview managers in human resource departments to understand their employment demands of new recruits.

### Implementation

Employment data collection and analysis in the 104 Job Bank was analysed from 7 August 2006 to 26 August 2006. As Table 1 shows, industry employment sectors were sorted into five categories: financial securities, international trade, management consultancy, general merchandising and retailing, and food and beverage. The collected data totalled 3,059, but the data that was complete and analysed totalled 3,052 [31].

Table 1: Data collection duration.

| Industry Type                       | Duration               | Data Amount |
|-------------------------------------|------------------------|-------------|
| Financial securities                | 8/7, 8/12, 8/17, 8/22  | 859         |
| International trade                 | 8/8, 8/13, 8/18, 8/23  | 814         |
| Management consultancy              | 8/9, 8/14, 8/19, 8/24  | 420         |
| General merchandising and retailing | 8/10, 8/15, 8/20, 8/25 | 750         |
| Food and beverage service           | 8/11, 8/16, 8/21, 8/26 | 209         |

According to categories of occupations in Taiwan, the collected data were classified into six categories: managerial

staff, professionals, assistant professionals, routine staff, customer service and sales staff, and part-time and assistant routine staff. Other basic data were organised based on the employment requirements listed in Table 2.

Table 2: Basic information descriptions.

| Basic Information        | Category                          | Amount | Ratio |
|--------------------------|-----------------------------------|--------|-------|
| Type of industry         | Finance                           | 859    | 28.1% |
|                          | International trade               | 814    | 26.7% |
|                          | Management consultant             | 420    | 13.8% |
|                          | General merchandise and retailing | 750    | 24.6% |
|                          | Hotel and restaurant              | 209    | 6.8%  |
| Type of role             | Management                        | 474    | 15.5% |
|                          | Professional                      | 580    | 19.0% |
|                          | Assistant professional            | 1,229  | 40.2% |
|                          | Office staff                      | 298    | 9.8%  |
|                          | Customer service and sales        | 356    | 11.7% |
|                          | Part-time staff or assistant      | 115    | 3.8%  |
| Education degree         | University                        | 709    | 23.2% |
|                          | Junior college                    | 1,108  | 36.3% |
|                          | Senior high school                | 1,036  | 34%   |
|                          | Non-requirement                   | 198    | 6.5%  |
| Rank in the organisation | Manager                           | 567    | 18.7% |
|                          | Mid-level cadre                   | 892    | 29.3% |
|                          | Basic-level labour                | 1,586  | 52%   |

It can be seen from Table 2 that the highest proportion, regarding the type of role, was for assistant professionals, while the smallest segment covered part-time and assistant office staff. It was also found that 71.85% of employment opportunities were not limited by gender. Females were required in work totalling 23.1% and males 5.0%. As for education degree requirements, university level or higher stood at 23.2%, junior college degree or above was 36.3%, senior high school degree or above took 34%, and no educational degree requirement was 6.5%. Rankings in organisations were dominated by basic-level workers (52%), the mid-level cadre (29.3%) and then managerial staff (18.7%) [1-4][31].

Managers in personnel departments acquiesced to in-depth interviews, which were undertaken in order to understand the content requirement of human resource departments. Prior to the interviews, an outline was developed based on the literature review and content analysis; a manager of a human resource department in an unknown enterprise was selected to be interviewed. The interview outline, content, order and researcher's manner of expression were amended accordingly.

A total of four managers, two from human resource departments and two from personnel departments, accepted the interview, undergoing interviews for two or three hours. The profiles of the subjects were researched and gathered on a Web site in advance. The interview was conducted based on interview outlines and interview plans. The contents of the interviews were recorded after receiving the interviewees' approval. The interviewees, human resource structures and interview codes are classified in Table 3.

## DATA ANALYSIS AND DISCUSSION

The data were analysed in the following two ways:

Table 3: Interviewee and labour force structure of the interviewed company.

| Industry Type   | Title of Interviewee         | Labour Force Structure of the Interviewed Company   | Interview Time and Code     |
|---|------------------------------|---|-----------------------------|
| Restaurant and recreation park  | Human resource manager       | Staff (including interns): 550<br>Junior high school degree or below: approximately 50 (~10%)<br>Senior/vocational high school: approximately 300 (~58%)<br>Junior college (including university): approximately 200 (~32%) | 18 September 2006 (R950918) |
| International trade (automobile manufacturing international trade department) | Personnel department manager | Staff: 680 people<br>Junior high (and below): 130 (senior staff)<br>Senior/vocational high school: 300<br>Junior college: 200<br>University: 50   | 29 September 2006 (N950929) |
| Finance industry  | Bank branch deputy director  | Staff: 35<br>Senior/vocational school: 2<br>Junior college: 26<br>University: 7   | 4 September 2006 (M950904)  |
| Wholesale and retail industry   | Manager                      | Staff: 600 (branch approximately 90)<br>Senior/vocational high school: 60-70<br>Junior college: approximately 12 (10-15%)<br>University: 7  | 16 September 2006 (C950916) |

- The employment data analysis was according to data collected from the 104 Job Bank. The statistical procedures included a number distribution, percentage and the Chi square test, which were used to determine the distribution of different industries, occupational types and ranks, and variations in the workforce requirements regarding educational degree, graduating department, work experience and qualifications;
- The interview data analysis was derived from managers in personnel departments. In order to facilitate the research and confirm the data, the study encoded interviewees according to industry type and interview date. Based on the interview data, a modified analysis was utilised to organise and analyse the data, and encode the content after interviewing the managers. A constant comparative analysis was used to organise the data and analyse the differences and similarities.

#### Analysis of Employment Requirements in Different Industries

##### *Education Degree Requirements in Different Industries*

The 104 Job Bank analyses revealed that 6.5% of employers did not consider a tertiary degree as an employment requirement. Vocational/senior high school degrees were demanded in the retail industries, while junior college degrees were required in other industries. It was also found that 70% of employers did not see academic majors as an employment requirement. Around 20% of employers only required applicants to have a business background.

The interview data shows that employers did not consider a degree merely as an employment requirement; they emphasised that it was an index to evaluate an applicant's capacities. More importance was placed on an applicant's work attitude. This finding is the same as in employment theory. There were differences found regarding selection in that a degree would affect the talents focused on in the internal flow of a company's use of human resources. Relevant contents gathered from interviews are quoted below:

- My company does not emphasise an educational degree. Salary will not be affected a lot by the degree, but by*

*experience and performance. Employees with higher degrees are more capable for sure, and degrees and working abilities exist in positive, but not absolute, relationship. Advanced degrees do not guarantee capability, but workers with higher degrees will be assigned more important tasks (Table 3: R950918);*

- Employees graduating from universities are more liable to get promotion if they have sufficient capabilities. We do not design promotion mechanisms on the basis of a degree, but on the capability to take this job (Table 3: N950929);*
- We certainly expect highly educated people to work in my company. However, once they become members of the company, their involvement and distribution in work are estimated. A degree is less important basically (Table 3: C950916).*

##### *Qualification Requirements in Different Industries*

The data from the 104 Job Bank indicated that around 10% of employers required applicants to hold professional qualifications, which are highly valued in the financial industry.

##### *Work Experience Requirements in Different Industries*

The data from the 104 Job Bank revealed that about 38% of each industry required applicants to have work experience covering at least three years.

According to the findings gained from the interviews, business administration experience was valued at the managerial level, while practical experience was valued at the basic and middle levels. Based on the human resource capital theory, employers emphasised practical experience for basic-level workers. Notable statements from the interviews are quoted below:

- Live experience is very important. If a university student takes a job as manager, what he does is live service work plus administration and management. Employees graduating from two-year institutes of technology start their working life as a clerk. Without administration and management, there is no difference between the work of*

*university students and high school students. Therefore, this is an experience-oriented industry* (Table 3: R950918);

- *For management level, it is better to have an employee who used to study business administration to do the work, but I do not think it is mandatory to have them do the work of assistants or clerks, but it is suitable to have them do work pertaining to management. Having life experience is preferable* (Table 3: M950904);
- *I always emphasise our service, which presents our public face. This is the difficulty. Some people cannot wear smiles while working, so we have to educate them. As I said, follow me, follow me. Do what the managers are doing. I will not blame you if you do what I did not do or you made mistakes because you never did it before* (Table 3: C950916).

#### Analysis of Employment Requirements Pertaining to Different Occupational Types

Applicants' employment requirements in different occupational types are elaborated on below.

##### *Education Degree Requirements in Different Occupational Types*

The data gathered from the 104 Job Bank revealed that junior college and vocational/senior high education degrees were required in business, service and sales, and assistant and part-time jobs. University and junior college degrees were required at the managerial staff, professional or assistant levels. It was found that 43.2% of enterprises demanded that applicants be equipped with university degrees for work at the managerial level [31][32].

##### *Graduation Requirements in Different Occupational Types*

From the data in the 104 Job Bank, more than 70% of enterprises did not consider applicants' graduating majors as an employment requirement. In particular, 95% of service and sales employers and 81% of business and part-time or assistant employers did not consider majors as an employment requirement. Other business job vacancies only required a business background [31][33].

The data from the interviews showed that the graduating majors of applicants were not the main consideration when hiring. Enterprises placed emphasis on applicants who had acquired business administration knowledge. Furthermore, applicants graduating from business administration departments have more job opportunities. Students' basic skills and attitudes were emphasised. A relevant interview quote is as follows:

*Actually I think talents with business administration knowledge are applicable in many ways because they have a good sense of business and dabble in diverse fields, so many departments, including technical sectors, employ business administration talents as well* (Table 3: N950929).

##### *Professional Qualification Requirements in Different Occupational Types*

The data from the 104 Job Bank showed that the qualification requirements for those applying for business jobs was up to

12%; the majority focused on the certification of securities and futures. Qualifications for life insurance and cooking were in the minority [31].

#### Employment Requirements at Different Levels

##### *Work Experience Requirements*

The data from the 104 Job Bank showed that the work experience requirement is higher for managerial staff; in particular a requirement for five years' experience or over was up to 18%. The levels were 7% for mid-level cadres and 1% for basic-level workers. By comparison, the ratio of job vacancies that did not require applicants to have work experience was only 29% for managerial staff, 37% for mid-level cadres and 57% for basic-level workers; the percentage lessened as the level rose [31][32].

##### *Graduating Major Requirements*

According to the data, the percentage of job vacancies that did not require applicants to have work experience was 85% for the basic level with 10% requiring a business background; 76% for mid-level cadres with 13% requiring a business background; and 55% for managerial staff where 29% required a business background. Previous findings revealed that graduating majors were required more strictly in response to higher-level positions. In addition to graduating majors, the qualification requirement was highlighted in the securities and futures category, particularly for basic-level workers. The qualification requirement was higher for basic-level staff than for managerial staff [31].

#### Analysis of Employment Competences at Each Level of the Workforce

According to the data, enterprises had different requirements for workers at each level. In this study, the data were divided into three categories: generic skills, management skills and teamwork skills. This was done in order to explore the degree of importance of employment competence for each different level [27][33][34].

##### *Employment Competences for Basic-Level Workers*

According to the data analysis, employment competences for basic-level workers comprised generic skills, management skills and teamwork divided as follows:

- Generic skills included language ability, information application and key-in skills;
- Management skills included active attitude and behaviour, responsibility, working adaptation and learning ability;
- Teamwork skills were divided into teamwork ability and executive ability.

##### *Employment Competences for Mid-Level Cadre*

According to the data analysis, employment competences for mid-level cadres comprised generic skills, management skills and teamwork divided as follows:

- Generic skills included language ability, information application and key-in skills;
- Management skills included active attitude and behaviour, responsibility, working adaptation and learning ability;

- Teamwork skills were divided into teamwork ability and executive ability.

#### *Employment Competences for Managerial Staff*

According to the data analysis, employment competences for managerial staff comprised generic skills, management skills and teamwork divided as follows:

- Generic skills included language ability, information application and key-in skills;
- Management skills included active attitude and behaviour, responsibility, working adaptation and learning ability;
- Teamwork skills were divided into teamwork ability and executive ability.

Table 4 lists the employment competences and shows the most important abilities for the labour force in technical and vocational schools of commerce.

The findings of the study show that employers emphasised attitudes and generic skills. Basic business subjects were enhanced by professional ability. This finding is the same as in relevant studies. A majority of employers took attitude, communicative ability and previous work experience into consideration besides the education degree and academic performance. Moreover, they also agreed on the significance of generic skills [6]. Notable quotes from the interviews include the following:

- *The education degree is not the key point in practice. You find the service industry is a labour-intensive sector. Even employees with high education degrees have to work on site (Table 3: R950918);*
- *... as just mentioned, the information department, the accounting department, and the business and project departments will all employ talents with business administration knowledge (Table 3: N950929);*
- *We do not absolutely need applicants graduating from business administration departments to engage in financial work. As long as you have some basic knowledge of business, you have the possibility to be hired and accepted into internal training programmes (Table 3: M950904);*
- *Health is the basic ability in the retail industry. Health is, so to speak, normal people. You can understand my words, and you can accomplish an assignment. You will ask if you do not know how to do it. You are literate and you can work. You are diligent (Table 3: C950916).*

Table 4: Listing of employment competences showing the most important abilities for the labour force in technical and vocational schools of commerce.

| Level                              | Generic Skill, Attitude and Behaviour                        |  |
|------------------------------------|--|--|
| Institute of technology            | 1. English competence<br>2. Word<br>3. Excel                 | Passion, reaction, optimism, learning motivation and teamwork                        |
| Junior college                     | 4. Chinese typing<br>5. Active attitude<br>6. Responsibility | Passion, prudence, optimism, pressure resistance, learning motivation and leadership |
| Vocational high school of commerce | 7. Communication and coordination<br>8. Cooperation          | Interest, prudence, pressure resistance, originality, ambition and teamwork          |

## CONCLUSIONS

From the above analysis and discussion, it can be concluded that enterprises' employment terms include education degree, qualification, occupational category and work experience. Employment competences classified as generic skills, information application, personal management and teamwork are elaborated on below.

### Education Degree

Workers with education degrees from vocational/senior high schools were the main demand of business and the service industry. The finding is the same as the statistics of the Census Bureau, Directorate General of Budget, Accounting and Statistics (DGBAS), Executive Yuan, Taiwan [2-4]. Chou and Shen also pointed out that human resources in retail and social service industries are based on post-secondary school education, followed by junior colleges [35]. This phenomenon is contradictory to Taiwanese industrial trends. This is because when external environments alter, labour demands for junior college degree holders in secondary industries are better than in the first or third industries, showing the impact of economic recession that has resulted in declining demand for junior college education degree holders in businesses and the service industry [36].

Workers with junior college degrees dominated finance and insurance, international trade, management consultancy and the hospitality industry. This is reflected in Chiang's study [37]. In the labour market, the generation of human resource capital of junior college education degree holders is greater than for those with senior high school and university education degrees. From the perspective of human resource capital theory, employers in businesses and the service industry consider workers from junior colleges to be more flexible and better adjusted in labour force applications. Moreover, payroll expenses are less than for university degree holders. Consequently, applicants with junior college degrees have become the main source of labour for employers in businesses and the service industry.

### Study Major

Requirements according to study majors are considered less important for enterprises. This is probably because learning content is homogeneous in business subjects and graduates from business departments are likely to be engaged in businesslike jobs. The study of the National Center on the Educational Quality of the Workforce in 1995 pointed out that general skills are built up as fundamentals in business departments [38].

## Qualifications

The findings indicate that a professional qualification requirement is higher for employees in the securities and futures industry and for basic-level staff. Employers' reasons for demanding a qualification are divided into professional and businesslike demands. The former is more recognised for professional certification, such as futures clerks for the Ministry of Economic Affairs; the latter refers to business qualifications issued by the Bureau of Employment and Vocational Training or key-in certifications issued by the Computer Skills Foundation. The financial industry is involved in the legitimate running of businesses, so qualifications are required for basic-level staff to prove their capabilities. Diplomas and certifications have no direct or close link with the position in the labour market but are still criteria impacting on the selection.

## Occupational Category

Assistant professionals comprise the majority in the national occupational categories. In particular, business, service and sales oriented, assistant or part-time jobs are based on junior college and senior high school degrees. Small and medium-sized enterprises, which dominate Taiwan's industrial structure, contribute to this result. Consequently, basic-level workers, such as assistants, technicians and operators in assembly lines, are the main labour sources introduced by employment institutions [35][38][39].

## Work Experience

Around 40% of employers require applicants to have work experience. A work experience requirement is lower in the financial industry, firstly because qualification requirements are considered as a selection device and secondly because financial industries provide comprehensive pre-service training programmes in order to complement an insufficiency of work experience. In the same way, Chao and Yen pointed out that enterprises select applicants mostly by their education degrees, past experience, language capabilities and personal (including personality) traits [40][41]. They do not exclusively consider work experience. In selection theory, education degree and language capability requirements become selection devices in the labour market via the education system. In human resource capital theory, work experience, practical experience and salary are in a direct ratio, also as a part of human resource capital. The professional capability requirements for employers in businesses and the service industry are based on graduating majors and work experience.

## Employment Competence

Generic skills, information application, personal management and teamwork were found to be the main employment competences for human resources in businesses and the service industry.

The findings in this study are proximate to those of Levy and Murnane, Haste, Berman and Ritchie, and Weinert [42-45]. Berman and Ritchie found significant correlations between student personal characteristics, student background characteristics, and their work-related competences [44]. However, Levy and Murnane listed emotional quotient in generic skills with respect to economic theory [42]. Weinert listed metacognitive ability as an employment competence.

This differs from the findings of this study [45]. Regarding the aspects of personal management and teamwork skills, the study's findings are close to those of Canto-Sperber, Dupuy and Murnane [43][46]. Nevertheless, Canto-Sperber and Dupuy, looked from a philosophical viewpoint, thought normative competences and narrative competences affected personal interaction attitudes [43]. Perrenoud, in his book, from the angle of sociology, considered resource management, developing strategies and systematisation to be generic skills in community operation, differing from this study's findings [47].

## COMMENTS AND SUGGESTIONS

Key findings are detailed below regarding employment requirements and employment competences in businesses and the service industry, the influence of vocational and technical education upon cultivating talent in businesses and the service industry, and potential strategies.

High homogeneity in workforce requirements for vocational high schools of commerce and senior high schools disadvantages graduates of vocational high schools of commerce entering the labour market. As such, it is necessary for vocational high schools to adjust their subjects and courses.

Employers emphasise the generic skills and attitudes of graduates from vocational/senior high schools in the employment market; by comparison, graduates from vocational high schools entering the labour market cannot display their professionalism in businesses and the service industry due to the high level of homogeneity with graduates from senior high schools. As a result, segmenting heterogeneous demands for the vocational/senior high school labour force needs to be considered when vocational high schools of commerce undergo a transformation. The rising demands for a labour force with a business knowledge background will facilitate the employment of graduates and the transformation of schools. Therefore, the authors list the following three concrete solutions to adjust vocational business subjects and courses:

- *Enhance students' academic and vocational abilities:* in addition to cultivating general academic knowledge, schools should also provide corresponding preparation for students to pursue higher education to further their abilities in response to employers' demands, and advance their career plans;
- *Make academic ability the first priority and career plans second:* students take general subjects in the first grade and take categorised classes or programs in different tracks with the purpose of gaining skills in businesses and the service industry;
- *Set core abilities to be the principal axis:* in response to students' uncertainty in their aptitudes and career plans, schools should design curricula based on a basic curriculum plus a professional core curriculum to meet students' needs for further study and employment.

Employment requirements are beneficial to workers with junior college degrees. People with business backgrounds are the favourite in businesses and the service industry. Junior colleges of commerce have room to develop and reset their roles in businesses and the service industry.

Workers with junior college degrees dominate the finance and insurance, international trade, management counselling, and hospitality industries. These are the same results as Chiang's

study [37]. In the labour market, the generation of human resource capital from junior college education degrees is greater than both senior high school and university education degrees. From the perspective of human resource capital theory, employers in businesses and the service industry consider graduates from junior colleges to be more flexible and generative in labour applications, with lower payroll expenses than for workers with university degrees. Consequently, applicants with junior college degrees have become the main labour source to meet employers' demands in businesses and the service industry. National studies have also noted that females with junior college of commerce education degrees obtained higher pay at the same level as vocational education degree holders; graduates from junior colleges and universities were paid higher than senior high school students. In particular, groups from junior colleges of commerce have the most remarkable pay benefits, but the value of the labour participation rate was lower for graduates from agricultural, industrial and junior colleges of commerce than for senior high school graduates [25][48][49].

For the securities and futures category, work experience, study major and qualifications were the main employment requirements for workers with junior college degrees in businesses and the service industry. It was found that employment requirements differed between industries. Experience requirements were usually less than three years. The financial industry demanded the fewest requirements, probably because employers provide comprehensive pre-service training programmes. Employment requirements changed according to the education degree and ranking in the organisation. Part-time assistants had noticeably fewer employment requirements.

Regarding applicants' graduating major requirements in different industries, employers with an institute of technology background were prone to hire graduates from institutes of technology, employers with junior college backgrounds were prone to hire graduates from business departments, and employers with vocational senior high school backgrounds were likely to hire graduates from senior high schools. Graduating majors were enhanced by an institute of technology education degree and were used to estimate professional abilities in accomplishing tasks. By comparison, graduating majors were not emphasised for graduates of junior colleges or vocational high schools, especially for basic-level work. As for qualifications, employers in businesses and the service industry did not consider a qualification as a main employment requirement, but in the futures and securities sector, qualifications were required.

Generic skills, information application, personal management and teamwork were found to be the main employment competences for human resources in businesses and the service industry. Employment competences can be classified as generic skills, individual management and teamwork. Consequently, the above-mentioned abilities should be integrated into present courses so as to enhance students' employment competences. Employment requirements and employment competences for the labour force at each level are as follows:

- For basic-level staff, mid-level cadres and senior managerial staff: the major nine abilities were English language competences, familiarity with software programs like *Word*, *Excel* and Chinese typing, an active attitude, responsibility, communication coordination, and

cooperation; the less important abilities were fluency in Taiwanese, familiarity with software programs like *PowerPoint* and *Outlook*, English typing, diligence, and executive ability;

- For basic-level staff: the six major abilities were interest, prudence, ability to cope with pressure, originality, ambition and teamwork; the less important abilities were self-confidence, passion, amiability, optimism, reaction, learning motivation and leadership;
- For mid-level cadres: the major six abilities were passion, prudence, optimism, ability to cope with pressure, learning motivation and leadership; the less important abilities were personality, interest, amiability, originality, reaction, ambition and teamwork;
- For senior managerial staff: the five major abilities were passion, reaction, optimism, learning motivation and teamwork; the less important abilities were interest, prudence, ability to cope with pressure, patience, ambition and leadership.

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