EXPLORING THE FACTORS AND WEIGHTS THAT AFFECT THE SALARY OF ACCOUNTING STAFF

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Abstract: Based on the analysis of public opinion, the sensitivity of the general public to salary has been quite high in recent days. From the recent big data information, it can be seen that most people's comments on salary are negative, which has led researchers to seek the main reasons for the impact on salary.

This study explores the factors and weights affecting the salary of accounting staff and discusses the impact of each factor on salary levels. Based on the literature review and expert questionnaire survey of this study, the factors and weights affecting the salary of accountants are summarized. The results show that there are six factors at the first level and 23 sub-facets at the second level.

Keywords: Accounting staff, Salary, Factors, Weights, AHP

Introduction

Since the financial tsunami in 2008, the overall economic climate has been weak in Taiwan. However, due to the increasing demand for corporate governance and financial transparency, enterprises have paid ever more attention to accounting in recent years. One of the characteristics of accounting work is that the longer the relevant work experience, the greater the mastery of various professional knowledge. Furthermore, the stronger the work ability, the higher the salary. Compared to other jobs, the nature of accounting work is stable and not easily replaced; accounting-related work also attracts many non-accounting graduates. Due to the considerable differences in the professional quality of employees, salary in the accounting field has greatly fluctuated.

Based on the analysis of public opinion, the sensitivity of the general public to salary has been quite high in recent days (Figure 1). From the bar chart in Figure 2, it can be seen that most people's comments on salary are negative, which has led researchers to seek the main reasons for the impact on salary.
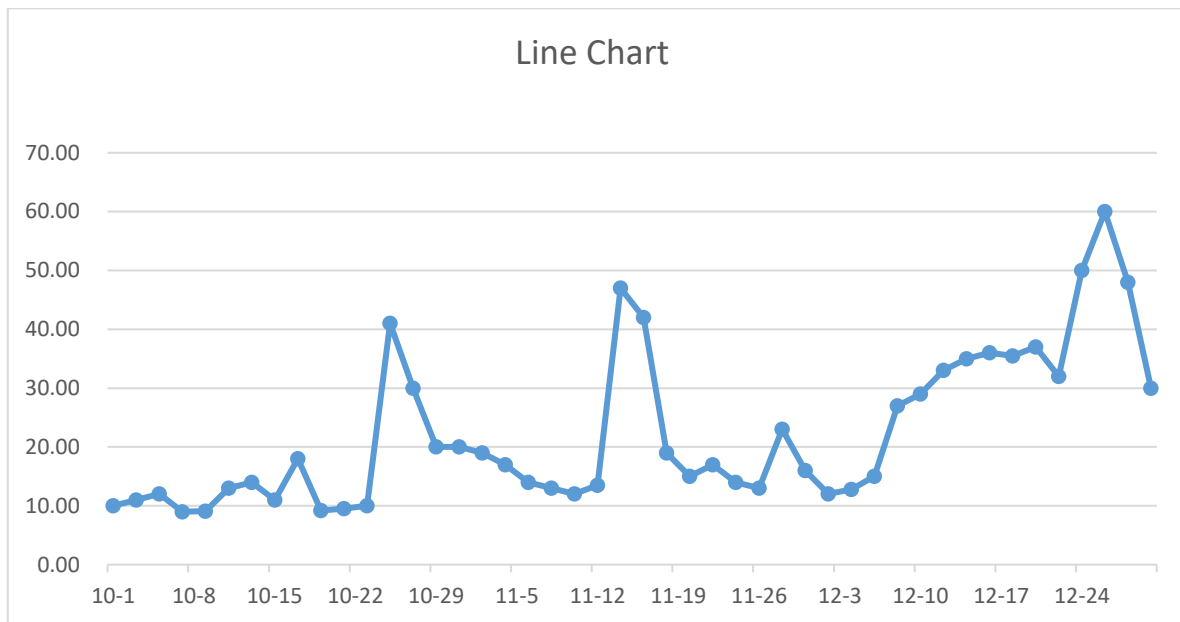
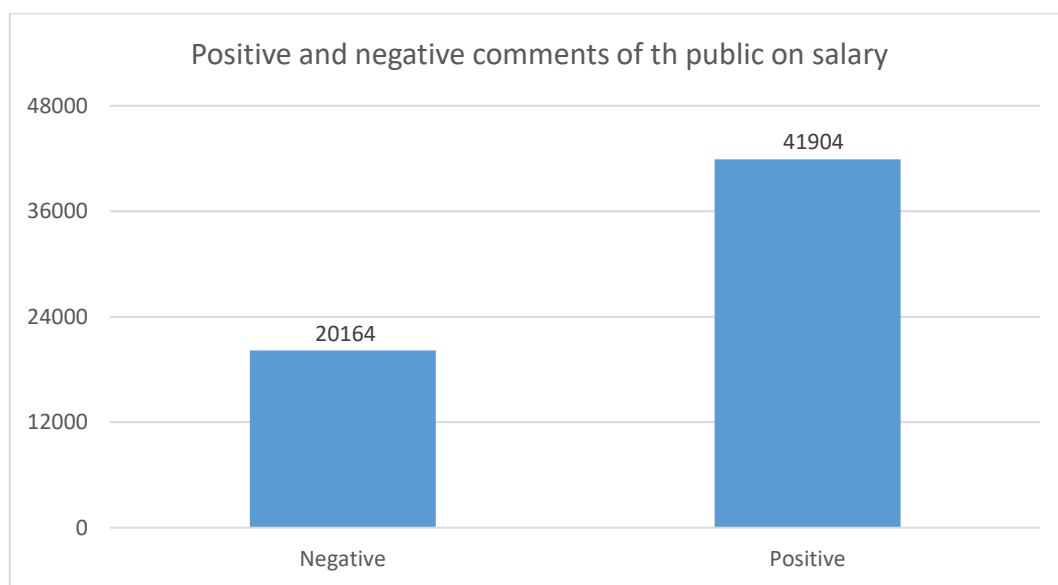Figure 1. People's sensitivity to salary from October to December 2017

Figure 2. The positive and negative comments of the public on salary

Research Questions and Objectives

It is generally believed that gender, job content, job position, job qualifications, corporate background, and obtaining relevant licenses account for the significant difference in salary. According to the Payroll Survey in Job Category (2013-2017) by the Labor Bureau, in recent years, the general salary at all levels with accounting-related occupations, except for managers and supervisors, has gradually decreased. "Modern Insurance News Network RMIM NEWS" (2019) indicated that the phenomenon of high living prices and low wages formed due to the

impact of long-term low interest rates in Taiwan. The survey has shown that food prices rose by 22.9%, while recurrent wages of industry and services only increased by 14.9% in a ten-year period, from 2009 to 2018.

In addition, due to the factors of global production and supply, if foreign labor is cheaper than domestic, the cost and price of its products will be lower and the market will be snatched. Domestic manufacturers may also shift production outside to reduce costs, so production in Taiwan is decreasing and demand for labor is decreasing. Furthermore, the imbalance between supply and demand in the market will cause the salary levels to fall.

According to the "Daily News" (2018) over-education depreciates academic qualifications; the number of universities in 2018 was as high as 157, and the number of graduates with university degrees or above totaled nearly 300,000 per year, resulting in too many college students, so that employers cannot identify employee quality via academic qualifications. As a result, those who are new to the workplace may start at very low wages. Therefore, it has become important to explore the factors affecting salary.

Research Objects

This study explores the factors and weights affecting the salary of accounting staff and discusses the impact of each factor on salary levels. The expert questionnaire is a way to obtain the research data. Therefore, the research objects of this study are the experts defined as the supervisors or senior executives in human resource departments.

Research process

First of all, the researchers analyzed the public's sensitivity to salary by poll analysis. Because of its high sensitivity, researchers have found that salary has always been a topic of great concern to the general public.

Next, the researchers found relevant factors affecting salary from the previous literature and designed a questionnaire consistent with AHP research method. The returned questionnaires were analyzed by Expert Choice to verify consistency and data integration, conclusions were drawn and further discussions proposed.

Literature Review

Factors affecting salary

Jiang (2008) have pointed out that labor can obtain higher salaries by earning professional licenses related to occupations. According to Xiao (2009), it is not difficult for students in the business category to hold financial licenses. Therefore, it can be clearly seen that lower-level licenses will not affect salary; only professional identification has an impact on the salary.

Zhang and Luo (2011) pointed out that the situation of gender discrimination is more serious in Central and Southern Taiwan, and especially in small and medium accounting firms. However, for the accountants with 5 to 20 years of work experience, it will make less difference.

Technews (2018) mentioned that personality affects income; the age of 30 is the key. According to the 2015 Truity Psychometrics survey, men with extroversion, conscientiousness, difficulty in getting along, organized and hardworking are better than none. Men with these qualities are more likely to have higher incomes, but since they are difficult to get along with and have a bad temper, they are more likely to lose their jobs than men with good temper.

Huang (2016) pointed out that accounting firms allowing employees to participate in professional training on a regular basis can increase the income of employee. Based on the above-mentioned references related to salary, the factors affecting the salaries of accounting personnel can be summarized as: gender, region, seniority, professional training, professional license and company size, while low-level license has little effect on salary.

The correlation between public opinion and salary

Due to the current high internet penetration rate of community in Taiwan, according to "Community Big Data: Internet Word of Mouth and Public Opinion Analysis", Yang (2017) indicated that most people use the community as the main source of receiving information, and express their opinions online, accounting for 96.1% coverage of young and middle-aged people. The online community is spreading rapidly and has a great influence. Therefore, in this high-tech era, the analysis of big data on any topic cannot be ignored.

Compared with the public opinion analysis method, because the traditional survey needs to design the questionnaire and test whether the questionnaire is reasonable, its execution time and cost are high, and the processing procedures are more complicated. In the virtual community, with the public opinion analysis method, the keyword search can be used to instantly filter public feedback and personal opinions on major social networking sites. Because it meets the characteristics of timeliness and large amount of data, its analysis can be highly accurate. Table 1 compares the differences between community public opinion analysis and traditional survey methods.

Table 1. Differences between public opinion analysis and traditional investigation

	Public opinion analysis	Traditional investigation
Principle	Non-interfering content observation.	Sample survey after designing the questionnaire.

	Observing the parent under big data.	Sampling and interference errors.
Accuracy	High	High
Timeliness	High	Low
Data volume	Huge	1068 samples
Perspective formation	Comments can be analyzed in depth.	● Quantify into options
Easy to implement	Automated tools. Easy to implement.	Multiple operating procedures.

This study used the database of the OpView community word-of-mouth to confirm that the public is highly sensitive to payroll concerns, and therefore decided to further analyze the factors affecting payroll.

Research method

Analytic Hierarchy process

Analytic Hierarchy Process (AHP) was developed by Professor Thomas L. Saaty of the University of Pittsburgh in 1971. It is mainly used in uncertain situations and decision problems with most evaluation criteria. Liang (2017) pointed out that AHP can help researchers find the weights of many important factors, and then make decisions to achieve research goals. The main features are described as follows:

(1) Use of individual elements to form hierarchical forms.

(2) AHP applies to situations where there is uncertainty and subjective information and allows logical use of experience, insight and intuition.

(3) It is helpful to describe the degree of influence of high-level elements on low-level elements.

(4) The structure and function of the entire system can be described in detail.

This article discusses the factors and weights that affect the salary of accounting personnel. Due to AHP having the above characteristics, it is very suitable for the research method based on AHP.

This study uses brainstorming and literature review methods to first summarize the factors that affect salary, and then uses the hierarchical structure to systematically decompose the problem, and establish a hierarchical structure questionnaire that complies with the AHP method.

Because the purpose of this research is to explore the factors that affect accounting personnel's salary, the experts referred to as the research object are defined as the supervisors or senior executives in human resource departments. The structure of the questionnaire is shown in Figure 3. The collected questionnaires must first be checked for consistency, and those who pass the check can further be used to analyze the weights of the salary elements in order to arrive at the desired research conclusions.
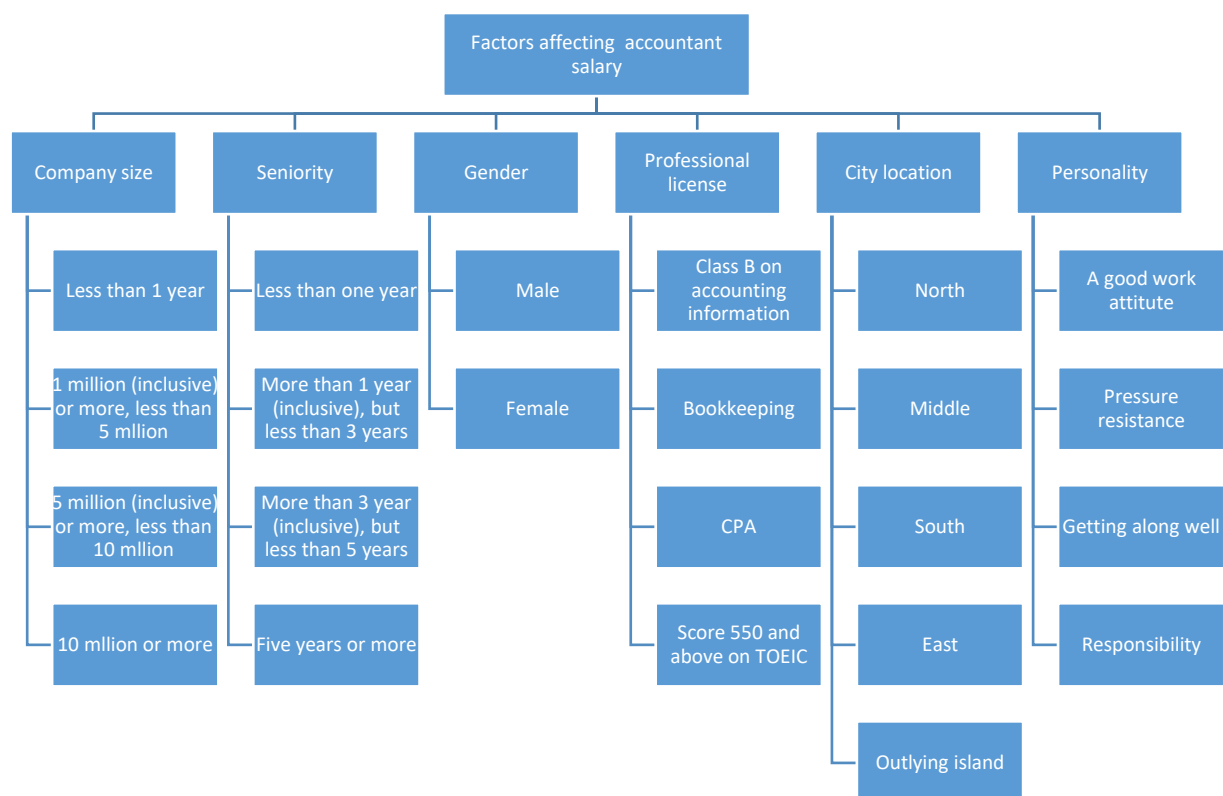

Figure 3: Questionnaire Structure

Research results and analysis

Sample Data

This study was conducted using expert questionnaires. The supervisors or the senior

executives in human resource departments were the main distribution target. A total of 27 samples were distributed. Yang and Huang (2015) mentioned that the AHP method does not require a large number of samples, but they should be representative. After deducting the number of invalid and incomplete questionnaires, the valid number was 20 and the recovery rate, 74.1%

I. Examining the overall consistency of the first level

The overall consistency verification formula is $C.R.H. = \frac{C.I.H.}{R.I.H}$

First level

$C.I.H.1 = 1*0.002 = 0.002$

$R.I.H.1 = 1* 1.260 = 1.260$

Second level:

$$C.I.H.2 = (0.294\ 0.112\ 0.221\ 0.042\ 0.215\ 0.117) \begin{pmatrix} 0.007 \\ 0.004 \\ 0.000 \\ 0.000 \\ 0.002 \end{pmatrix} = 0.003$$

$$R.I.H.2 = (0.294\ 0.112\ 0.221\ 0.042\ 0.215\ 0.117) \begin{pmatrix} 0.900 \\ 1.120 \\ 0.900 \\ 0.000 \\ 0.900 \\ 0.900 \end{pmatrix} = 0.888$$

$C.R.H. = (0.002+0.003)/(1.260+0.888) = 0.002 < 0.1$, meets the consistency.

In this study, the relevant literature and interview opinions of 20 supervisors in the accounting department or human resources department were summarized. Through applying the AHP method, the overall consistency was examined. A result of CRH $= 0.002 < 0.1$ means that the responses meet logical consistency. In terms of factor selection or weight distribution, it should have met the requirements of representative opinions. It is enough to provide objective and effective research results for students in universities and those who want to enter the

accounting industry for employment, and it is an important basis for further application and research.

I. Overall level consistency check

Consistency check (C.R.H.) at the entire level:

The overall consistency test formula is C.R.H. = (C.I.H.) / (R.I.H)

C.I.H. $\square\square\square$(feature vector at each level) $\square\square$(value of C.I. at each level)

R.I.H. $\square\square\square$(feature vector at each level) $\square\square$(value of R.I. at each level)

First level:

C.I.H .1 = 1 * 0.002 = 0.002

R.I.H .1 = 1 * 1.260 = 1.260

Second level

C.I.H .2 = (0.294 0.112 0.221 0.042 0.215 0.117) = 0.003

R.I.H .2 = (0.294 0.112 0.221 0.042 0.215 0.117) = 0.888

C.R.H. = (0.002 + 0.003) / (1.260 + 0.888) = 0.002 <0.1, meets the consistency.

II.   The affecting factors and weights at each individual level

Table 2   The weight and ranking of first level factors

Factor	Weight	Ranking
Personality	29.4%	1
Professional license	22.1%	2
Seniority	21.5%	3
Company scale	11.7%	4
City location	11.2%	5
Gender	4.2%	6
Total	100.0%	

The purpose of this study is to explore the factors and weights affecting the salary of accountants. First of all, we calculate the weights and sort the importance ranking of six facets at the first level. The facets of the first level are used as the basis for division, and the weight calculation and importance ranking of the "influencing factors" at each level are separately

performed. That is to say, we look at the six "facets" separately, the sum of the weight values of "facets" is 1, and the sum of the weight values of "influencing factors" is also 1.

The results show that the respondents believe that personality is the most important facet of the of six factors, and the gender is obviously at the end. The importance of the factors is arranged in order as follows (shown as Table 2).

This study synthesizes the weights of the facets and influencing factors at each level, and Table 3 is compiled.

Level 0 Research purpose	Factors Level 1 weight/ranking	Level 2- Facets	Weights	Ranking
Factors and weights affecting the salary of accountants	Personality A1 0.294/ 1	A21 A good work attitude	0.101	1
		A22 Pressure resistance	0.072	3
		A23 Getting along well	0.037	4
		A24 Responsibility	0.083	2
	City location B1 0.112/ 5	B21 North：New Taipei City, Taipei City, Taoyuan, Hsinchu, Miaoli	0.037	1
		B22 Middle: Taichung, Changhua, Nantou, Yunlin	0.028	2
		B23 South：Chiayi, Tainan, Kaohsiung, Pingtung	0.026	3
		B24 East：Yilan, Hualien, Taitung	0.011	4
		B25 Outlying island ：Penghu, Kinmen, Lianjiang	0.009	5
	Professional license C1 0.221/ 2	C21 Class B on accounting information	0.021	4
		C22 Bookkeeping	0.052	2
		C23 CPA	0.100	1
		C24 Score 550 and above on TOEIC	0.049	3
	Gender	D21 Male	0.022	1

D1 0.042/ 6	D22 Female		0.020	2
Seniority E1 0.215/ 3	E21 Less than one year		0.019	4
	E22 More than 1 year (inclusive), but less than 3 years		0.042	3
	E23 More than 3 years (inclusive), but less than five years		0.069	2
	E24 Five years or more		0.086	1
Company size (Annual revenue) F1 0.117/ 4	F21 Less than 1 million		0.010	4
	F22 1 million (inclusive) or more, less than 5 million		0.023	3
	F23 5 million (inclusive) or more, less than 10 million		0.039	2
	F24 10 million or more		0.045	1

Table 3. The overall weight and ranking of each individual level

Conclusions and Suggestions

Research conclusions

Based on the literature review and expert questionnaire survey of this study, the factors and weights affecting the salary of accountants are summarized. The results show that there are six factors at the first level and 23 sub-facets at the second level. The research conclusions are summarized as follows:

Among the factors and weights that affect the salary of accountants, the first-level factors are divided into six; the ranking from the highest to the lowest according to the weight distribution is: "personality" (29.4%), "professional licenses" (22.1 %), "seniority" (21.5%), "company size" (11.7%), "city location" (11.2%), and "gender" (4.2%).

It is known from this study that the first-level facets of the factors that affect accountants' salaries rank first in terms of "personality." Personality traits have always been a widely discussed issue in human resources. Different types of work require different personality traits, and different industrial categories or work characteristics have their own suitable personality

traits (Chi, Lee & Chen, 2008). The results of this study show that accountants with a sense of responsibility, pressure resistance and good work attitude receive higher salaries than the others. Among these elements, the impact of good work attitude accounting for 34.3% is the most significant; it can indicate that work attitude is the personality trait that senior executives value most.

Many of us want to baseline and benchmark how our salaries compare to those of others, especially in these volatile times. Many ask why they should spend the time studying and acquiring the certification. Hutchins (1999) pointed out what certifications can do for you: 1. Certifications pay and result in professional recognition. 2. Certifications implies credibility and marketability. 3. Certifications ensures quality literacy and helps you keep up with changes in profession. 4. Certifications increase your organizational exposure and effectiveness. In terms of professional licenses, according to Human Capital Theory (Becker, 2010) and Screening Theory (Spence, 1973), both researchers believe that workers can obtain higher salaries by obtaining professional licenses. According to an analysis on the impact of salary (Xin & Jiang, 2011), the professional licenses held by workers will be reflected in higher salary levels. The different types of professional licenses have different effects on workers' salaries. According to the "Effects of Holding Certificates of Graduates from Tertiary Institutions in Taiwan on Initial Jobs and Salaries" (You, 2008), the professional licenses examined by governments are advantageous in terms of job promotion and high salaries. The effect is not limited to the public sector, and is helpful to the private sector and self-employed. Most employers prefer employees with professional licenses.

The results of this study for professional licenses show that the most important license for accountants is the "Certificate of Public Accountant" (CPA) (45.1%). In addition to the TOEIC certificate that proves language skills, holding the CPA license is more important than the others. It is a credible certificate in the job market, and can prove that the person possesses

highly professional ability.

In terms of seniority and the impact of work experience on wages in the labor market in Taiwan (Tsai & Lin, 2002), the laborer's professional experience means earning better wages than others receive in the same company. Years of experience in the same profession can have a cumulative effect. In Bundy and Norris (1992) study, students with previous accounting experience appear to be more inclined to reply on the opinions of others in choosing a job and paid higher than students without similar experience. This research's results show that the higher the seniority, the higher the percentage of salary increase, which is close to the research results obtained in the previous literature.

In terms of company size, Tian (2008) indicated that university graduates who work in larger companies with more than 30 employees have higher salary levels (1.8% more) than employees in the companies with fewer employees. The results of this study echo the above literature and show that the larger the company size, the greater impact on salary.

Regarding city location, it was also mentioned in Tian's (2008) study that university graduates working in the northern region have the highest salary, approximately 12.7% higher than that of university graduates working in other regions such as the east. However, the salary of employees working in the northern region is not significantly different than university graduates working in the southern region. This result is similar to those of previous studies.

The existence of a salary differential between men and women who are accountants has been noted in many countries (Stedham and Yamamura, 2000). Men who were accountants in Australia were likely to have a higher level of education and more experience than women. In the US, female accountants were marginally less satisfied with their salary than male accountants. Significant differences in culture, however, between Japan and the western countries that it trades with may make gender equality more difficult to achieve (Stedham, Yamamura, and Satoh, 2006). In terms of gender, the results of this study show that although

men's salary is slightly higher than women's, the impact of gender on accountants is not significant. However, according to "Factors Affecting Salary Changes" (Lin, 2015), from the perspective of gender, no matter whether one year, three years or five years after graduation, men are paid more than women, confirming that there is indeed a gender pay difference between men and women in the labor market in Taiwan. According to the above arguments, although the gender influence in the accounting industry is not large, in other industries, gender is indeed one of the factors affecting salary.

From the above conclusions, it is clear that in terms of personal characteristics, a good work attitude is obviously more important than the other influencing facets; in terms of city location, salary in the northern area is significantly higher compared to the other four areas; in terms of professional licenses, the CPA license is significantly more important than the other three licenses; in terms of gender, males are paid more than women; in terms of seniority, professional work experience of five years or more has a more significant impact than the other three influencing facets; in terms of company size, companies with annual revenue above 10 million (inclusive) clearly pay higher salaries than those with annual revenue of more than 1 million (inclusive) and less than 5 million, and annual revenue less than 1 million.

Through the establishment of the content of the influencing factors and the ranking of the relative weights, each of the influencing facets under the six factors is clearly presented, and the weight of the influencing factors is shown to help those engaged in the accounting industry to effectively grasp the influence factors of accountant salary, so as to enhance their ability, cultivate personal characteristics, and as a reference to achieve the goal of increasing salary.

Research recommendations

I. Suggestions for university students and those who want to enter the accounting profession

Filling a position means carefully matching the individual to your precise requirements. Students expect adequate training and adequate staffing of professional engagements (Carcello,

Copeland, Hermanson, and Turner, 1991). According to the results shown in this study, since personal characteristics have the highest weight among the six factors to get a higher salary, university students and those who want to enter the accounting profession must first develop a good working attitude, have a high resistance to stress, and then obtain professional certification. Accounting practitioners need to obtain accounting-related certificates as much as possible to prove that they have the relevant majors and draw up learning plans to improve their foreign language skills. At the same time, incumbents can use the extra time to seek the support of the accounting professional growth channels, continue to improve their professional quality, strengthen the professional image of accountants, and accumulate a considerable amount of work experience to enhance their own remuneration.

II. Suggestions for schools and companies

According to the results of this study, students can be counseled to obtain relevant certificates to enhance their professional ability and cultivate the relevant traits required by their professions, to increase the employment rate of students and raise their salary levels. On the company side, on-the-job training courses can be set up to counsel employees to further improve their professional quality.

III. Suggestions for further research

Since this research utilized subjects who had matriculated at just 20 experts, the ensuing results are not generalizable to entire population in Taiwan. I hope that in the future, the limitations of the scope can be overcome. Computers or the Internet may be used to solve data collection problems. As for the personal traits, it is suggested that they can be classified in more detail according to the five-factor theory of personality (McCrae & Costa,1999), so that the traits can be more clearly distinguished.

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