



Corporate Governance, Professional Education, and Employee Bonus in High-Tech Industry- Evidence from Taiwan

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ABSTRACT

High-tech industry plays the role of motivator in the economic development in Taiwan, revealing that high-tech industry is not simply the most important breadwinner in Taiwan, but also the powerful backing of national competitive advantage under the globally competitive system. High-tech industry requires the engagement of excellent talents, but the staff turnover rate is commonly high. A lot of businesses therefore apply employee bonus and the high development of high-tech industry as the incentives to recruit and retain talents. In this case, it is important for high-tech industry understanding the factor in employee bonus and further discussing the relationship among current corporate governance mechanism, professional education, and employee bonus for the sustainable development. Taking domestic listed high-tech companies as the research objects, the database of Taiwan Economic Journal and Taiwan Patent Gazette are the data sources to collect the companies' financial statement, patent, and stock price data for the empirical research. The research results conclude the significantly positive correlations between 1) corporate governance and employee bonus, 2) professional education and corporate governance, and 3) professional education and employee bonus. Finally, conclusion and suggestions are proposed, expecting to assist high-tech businesses in promoting the employee bonus system.

Keywords: high-tech industry, corporate governance, professional education, employee bonus

INTRODUCTION

In order to reinforce national competitiveness to facilitate the industrial transformation in Taiwan, electronics industry is positively developed as the major niche of national competitiveness. Nevertheless, the development of high technologies requires abundant capitals and high-level manpower. Stock bonus, under the limited capital, is therefore applied to attract oversea talents returning for development. With the support of excellent talents and the government, electronics industry becomes the major power of national development. In the rapid advance of technology, internationalization is the objective pursued by domestic enterprises, and products should be diverse, individualized, and cheap to satisfy customer needs.

In face of the fiercely competitive environment, an enterprise has to constantly think of the coping method to maintain the competitive advantage. Without exceptions, domestic enterprises actively apply various management methods in past years to improve and enhance the business management and expect to adapt to the change of business environment and overcome the fierce competition in the international market for the

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State of the literature

- Corporate governance as the mechanism which could supervise an enterprise implementing internal and external auditing to ensure the enterprise conforming to the social norms, proceeding relevant businesses & activities, and paying attention to interested parties' benefits.
- All famous high-tech companies have regarded "profit sharing & stock ownership" as a part of employees' salary and consider that employee profit sharing & stock ownership could result in competitive advantage for the enterprise.
- To understand the factors in employee bonus and further discuss the correlations among current corporate governance mechanism, professional education, and employee bonus therefore become the key research motivation and objective in this study.

Contribution of this paper to the literature

- A high-tech could provide the work environment, which allows the employees develop what they learn in the professional education to enhance the professional capability being effectively applied.
- To enhance the competitiveness of a high-tech business, the corporate culture and value good for innovation should be formed and good communication channels and cooperation with members should be established in the organization to create the teamwork environment and facilitate the engagement of employees in various levels.
- A high-tech business should apply corporate governance to combine the business activities which require long-term investment for results, e.g. R&D and innovation.

development and sustainable management. The rapid development of high-tech industry in Taiwan presents critical status in global economic system. High-tech industry also plays the role of motivator in the economic development of Taiwan, showing that high-tech industry is the important breadwinner of Taiwan as well as the powerful backing of national competitive advantage in the globally competitive system. High-tech industry requires the engagement of excellent talents, while the turnover rate is commonly high. Under the shortage of novice and the continuous loss of internal staff, the businesses have tried to attract and retain the best talents in order to maintain the competitiveness. For this reason, a lot of businesses use employee bonus and the high development of high-tech industry as the incentives to recruit and retain talents. Nowadays, about all famous high-tech companies have regarded "profit sharing & stock ownership" as a part of employees' salary and consider that employee profit sharing & stock ownership could result in competitive advantage for the enterprise. To understand the factors in employee bonus and further discuss the correlations among current corporate governance mechanism, professional education, and employee bonus therefore become the key research motivation and objective in this study.

LITERATURE AND HYPOTHESIS

Corporate Governance

Demirtas & Rodgers Cornaggia (2013) defined corporate governance as the mechanism which could supervise an enterprise implementing internal and external auditing to ensure the enterprise conforming to the social norms, proceeding relevant businesses & activities, and paying attention to interested parties' benefits. Madorran & Garcia (2016) divided the measuring variable of corporate governance into national level and corporate level. Hsieh & Wu (2012) indicated that national-level corporate governance involved in the protection of investors (minority shareholders and creditors) in Company Act and security-related regulations as well as the practice effectiveness of such regulations. Corporate-level corporate governance mainly concerned about the major shareholder's cash-flow right, the independence of the board of directors, and the transparency of information. Badolato et al. (2013) inferred corporate governance mechanism as the design and practice through systems, expecting to promote strategic management efficacy and supervision managers' behaviors to ensure the deserved remuneration of external investors (minority shareholders and creditors) and pay attention to other interested parties' (stakeholders) benefits. More specifically, corporate governance was to prevent agencies from damaging

corporate value and reinforce corporate competitiveness and management efficacy in order to guarantee the rights and interests of capital providers and other interested parties. Qian & Yeung (2015) explained the thinking direction of corporate governance mechanism as “how to ensure the investment of capital providers being able to acquire deserved remuneration”. In this case, corporate governance aimed to prevent managers from damaging corporate value and reinforce corporate competitiveness and management efficacy to guarantee the rights and interests of capital providers and other interested parties. There are some common rules for corporate governance; for instance, the corporate governance of Organization for Economic Co-operation and Development (OECD) contains shareholders’ rights, equal treatment to all shareholders, rights and interests of interested parties, information disclosure and transparency, and the responsibilities of the board of directors. Adams & Mehran (2012) considered that a company was composed of interested parties (stakeholders), such as shareholders, employees, creditors, managers, consumers, suppliers, government institutions, and financial institutions, and there were contracts based on the common benefits of all among such interested parties to correct and restrain the behaviors. In short, agency theory mainly discussed the occurrence of agent relationship and the management mechanism.

Referring to Chan et al. (2015), corporate governance in this study contains the following dimensions.

- (1) Manager holding: Van der Colff (2015) indicated that the more shareholding concentrating on the managers in a company, the more the managers’ decisions tended to the maximization of shareholders’ wealth.
- (2) Outside shareholder: Charles et al. (2016) showed two different opinions. “Efficient monitoring hypothesis” indicated that institution investors presented more professional knowledge and techniques to supervise managers than minority shareholders did, and the supervision cost was lower. The increase of institution investors therefore could effectively reduce agent problems, enhance business performance, and present positive intention on the acquisition beneficial to the enterprise.
- (3) Board of director size: Zagorchev & Gao (2015) regarded smaller board of director size could better effectively supervise CEO’s action.

Professional Education

Naiker et al. (2013) stated that professional education was the education proceeded in professional schools to cultivate professional talents. Professional education contained both pre-service education and in-service education. Erkens et al. (2012) mentioned that learners acquired professional theoretical knowledge and rational practical skills through formal and long-term professional education to cultivate the professional ethics stressing on service philosophy and customer benefits. Jizi et al. (2014) indicated that professional education, based on the practice and research, emphasized cultivating student capabilities of specialized knowledge application and sustainable development and the innovative awareness and critical awareness in the practical research. Professional education referred to all activities of an enterprise or an industry to enhance the employees’ knowledge, skills, and attitudes required for specific duties or to cultivate the problem-solving capability (Wang et al., 2012). Beaudoin et al. (2015) pointed out professional education as an organization assisting the employees in enhancing the work abilities through planned and organized measures. Simply speaking, professional education was the skills provided for novices or employees executing the work (Rao & Tilt, 2016). Professional education especially aimed at organizational needs to reinforce the match of needs, strategies, philosophy, and culture between employees and organizations to further promote the employees’ work performance and focus on personal objectives. Education allowed people preparing for various roles played in the future or individual development (Wankeun Oh & Seungho Park, 2015).

Referring to Cho et al. (2013), employees’ professional education generally contains the following dimensions.

- (1) Workplace education: also named employee education, aiming to reinforce employees’ competency and skills and cultivate the excellent occupational attitude and professional knowledge.

- (2) Continuing management education: The middle-level supervisors selected from various departments would take turns for the education so as to deeply know the department businesses and accumulate the management experience to become high-level supervisors in the future.

Employee Bonus

Blaylock (2012) explained bonus as an enterprise allocating certain percentage of profit distribution as the remuneration to the employees; such remuneration was set the allocation ratio in advance according to free agreement; once the ratio was decided, it could not be randomly changed by the employer. Cohen et al. (2014) defined bonus plan that bonus was a part of profits beyond the normal salary of employees (Tan, 2012). Khan et al. (2013) stated that an enterprise shared the profit, according to certain percentage, with employees participating in and operating management, aiming to have the business organization and the employees commonly share the gradual economic interests of the company, i.e. sharing parts of organizational profits with the employees. Aebi et al. (2012) proposed that the premise to practice bonus plans lied in a company being able to objectively measure the organizational output and allocating profits according to the enhanced productivity or reduced costs of employees; the basic concept assumed that the overall business efficiency of the company was related to the common efforts of all employees in the enterprise.

Referring to Lee et al. (2015), employee bonus in this study is measured by the following dimensions.

- (1) Bonus plan: also named profit sharing (or bonus), i.e. sharing profits.
- (2) Ownership plan: also named stock ownership or employee stock ownership plans (ESOPs). Oikonomou et al. (2014) stated that such a system having employees become the shareholders of an enterprise would have the employees undertake more responsibilities of enterprise profit and loss after employee stock ownership plans were practiced for few years. In other words, the employees undertook more risks of the business success and the employees could acquire dividends for the efforts.
- (3) Profit sharing & stock ownership: Filbeck et al. (2013) indicated that profit sharing & stock ownership was the system with bonus and share, connecting bonus plans with ownership plans. The meaning was to divide employee bonus into cash directly given to employees and the distribution of shares (or rights and interests). Profit sharing & stock ownership presents the meaning of bonus and share, allowing employees sharing the profits of the enterprise and acquiring the shareholding to commonly undertake the success of the business that it presents the dual meanings of bonus plan and ownership plan.

Research Hypothesis

Liang et al. (2012) pointed out the higher employees' bonus and allotment, the more directors' remuneration. Chan et al. (2015) indicated the commonness in Taiwan that directors in electronics industry held a concurrent post of manager. Since the directors could simultaneously receive director remuneration and employee bonus, it was considered that a director's remuneration should be positively correlated with employees' surplus bonus. Agrawal & Knoeber (2012) mentioned that a lot of electronics companies regarded employee bonus as the weapon of an enterprise competing with others for talents; some enterprises even set the employee bonus up to 15% of surplus. It therefore appeared the worry of "beneficial for employees, but difficult for shareholders". Qian & Yeung (2015) discussed the positive correlation between employee bonus and corporate governance and discovered that the higher employee bonus would have a company tend to giving more stock dividends and therefore reduce the percentage of cash dividends. For this reason, the following hypothesis is proposed in this study.

H1: Corporate governance shows significantly positive correlations with employee bonus.

Rao & Tilt (2016) regarded professional education as the education based on research, in which professional knowledge was constantly expanded and theories were transformed into practice to enhance the

continuous development of profession. Habib et al. (2013) stated that professional education had the cultivation of management talents not simply stress on the unification of knowing and doing or the unification of theory and practice, but emphasize the cultivation of professional ethics, broad knowledge, and critical thinking and capability to comprehensively enhance the application of talents in the corporate governance. Cho et al. (2013) argued that professional education with stronger professionalism of the professional post required the cultivation with longer time and higher level to complete the compound management talents with production, management, operation, and service. Apparently, professional education was the cultivation of corporate governance aiming at management talents in an enterprise (Wang et al., 2012). The following hypothesis is then proposed in this study.

H2: Professional education presents remarkably positive correlations with corporate governance.

Lee et al. (2015) indicated that an enterprise providing professional education could enhance the employees' coherence and organizational commitment. Harjoto et al. (2015) further proposed that an employee would enhance the productivity and professional capability after receiving professional education. Since professional education presents much assistance in employees that employees receiving more diversified professional education and training hours would show better effectiveness of professional education and work performance, and the received employee bonus was more satisfactory. Zagorchev & Gao (2015) indicated that an employee would present better responsibility and devote more to the work performance after receiving professional education and having better understanding of work contents. In this case, an employee participating in professional education could help the work performance and employee bonus. The following hypothesis is then proposed.

H3: Professional education reveals notably positive correlations with employee bonus.

RESEARCH METHOD

Method Model

The test of goodness-of-fit in LISREL is generally measured with overall model fit (i.e. external quality of model) and internal quality of model. Regarding the test of overall model fit, the evaluation indicators contain (1) " χ^2 ratio" (Chi-Square ratio), standing for the difference between actual theoretical model and expectation value, which is better less than 3, (2) goodness of fit index (GFI) and adjusted goodness of fit index (AGFI), showing the better goodness-of-fit when closer to 1, (3) root mean square residual (RMR) reflecting "variance of fit residual/covariance mean", which is better less than 0.05, and (4) incremental fit index (IFI), revealing good model fit when being larger than 0.9.

The common evaluation indicators for the internal quality of model in LISREL contain (1) SMC (square multiple correlation) of individual manifest variables, as R^2 of manifest variables and latent variables, which should be larger than 0.5, (2) component reliability (ρ) of latent variables, as the Cronbach's α of observation indicator of latent variables, which is better larger than 0.6, (3) average variance extracted of latent variable, calculated by the sum of manifest variables R^2 of a latent variable divided by the number of manifest variables, revealing the percentage of the latent variable being measured with manifest variables, which is better larger than 0.5.

Research Sample and Object

Domestic listed high-tech companies are selected as the research objects, and the database of Taiwan Economic Journal and Taiwan Patent Gazette are the data sources to collect the financial statement, patent, and stock price data for the empirical research. Manufacturers with the major businesses in semiconductor manufacturing, passive component manufacturing, and other electronic part and component manufacturing are covered, such as Taiwan Semiconductor Manufacturing Company, United Microelectronics Corporation, and Lite-On Technology Corporation.

Table 1. Analysis of model

	Evaluation indicator	Criteria	Result
Overall fit	<i>p</i> -value	<i>p</i> -value > 0.05	0.000
	$\chi^2/d.f.$	< 3	1.183
	GFI	> 0.9	0.976
	AGFI	> 0.9	0.923
	CFI	> 0.9	0.931
	RMR	< 0.05 and lower than 0.025 Excellent	0.011
	RMSEA	0.05~0.08 Good < 0.05 Excellent	0.034
	NFI	> 0.9	0.942
	IFI	> 0.9	0.907

Table 2. SMC between variable and dimension

Corporate governance		
manager holding	outside shareholder	board of director size
0.71	0.73	0.77

Table 3. SMC between variable and dimension

Professional education		Employee bonus		
workplace education	continuing management education	bonus plan	ownership plan	profit sharing & stock ownership
0.75	0.81	0.82	0.84	0.87

Test of Reliability and Validity

Validity refers to the scale of measure which could actually measure the degree of something which a researcher intends to measure. The common types of validity include “content validity” which tends to qualitative test, “criterion validity” which uses the considered external criterion and the correlation coefficient in this test, and “construct validity” which is used for evaluating the consistency of a measurement with other observable variables. The questionnaire in this study is designed based on the past theories and referred to the actual conditions of research objects to ensure the content validity by truly expressing the essence of things and the complete representativeness. Besides, the final communality estimation of Factor Analysis is applied to test the construct validity of questions, where the validity appears in 0.8~0.9, revealing the favorable validity test of the questionnaire.

EMPIRICAL RESULT ANALYSIS

Test of Model Fit

“Maximum Likelihood” (ML) is utilized in this study for the estimation, and the analysis results achieves the convergence. Overall speaking, the indicators of overall model fit pass the test, **Table 1**, thoroughly reflecting the favorable external quality of model.

Test of Path Relationship

In terms of the test of internal model quality, the square multiple correlation (SMC) of manifest variables is higher than 0.5 (**Table 2, 3**), revealing the good measures of latent variables. Furthermore, the component reliability of latent variables, i.e. corporate governance, professional education, and employee bonus, is higher than 0.6, and the average variance extracted of dimensions is higher than 0.5 (**Table 4**). It apparently shows the good internal quality of model.

Table 4. Component reliability and average variance extracted of variable

Item	Corporate governance	Professional education	Employee bonus
component reliability	0.853	0.844	0.868
average variance extracted	0.85	0.82	0.89

Table 5. Analysis of Linear Structural Relations Model

Evaluation item	Parameter/evaluation standard	Result	t
intrinsic fit	corporate governance→employee bonus	0.862	17.51**
	professional education→corporate governance	0.848	10.63**
	professional education→employee bonus	0.853	12.44**

Table 6. Hypothesis test

Research hypothesis	Correlation	Empirical result	P	Result
H1	+	0.862	0.00	Supported
H2	+	0.848	0.00	Supported
H3	+	0.853	0.00	Supported

From the model analysis in **Table 5**, corporate governance presents positive and significant correlations with employee bonus (0.862), professional education shows positive and remarkable correlations with corporate governance (0.848), and professional education appears positive and notable correlations with employee bonus (0.853) that H1, 2, and 3 are supported. The test results of hypotheses are shown in **Table 6**.

CONCLUSION AND SUGGESTION

The research results reveal that corporate governance could affect and further enhance corporate performance, and the proportion of employee bonus issued is affected by business performance of the company. Consequently, it is considered in this study that a company with better corporate governance would increase the proportion of employee bonus. Professional education is the easiest and time-saving way to make changes; besides, promoting professional capability through professional education could enhance employee bonus. Accordingly, employees could actively participate in professional education offered in high-tech businesses and make what they learn become the professional skills so as to effectively enhance the employee bonus.

By organizing the results and findings, practical suggestions are proposed as below.

1. When proceeding professional education, a high-tech business should provide the employees with multiple choices and opportunities to participate in pluralistic education. Furthermore, a high-tech could provide the work environment, which allows the employees develop what they learn in the professional education to enhance the professional capability being effectively applied. In this case, the employees could effectively promote the capability, enhance the satisfaction with the professional education system, and assist the high-tech business in enhancing profits and increasing employee bonus.
2. In the knowledge economy era, the importance of innovation is increasing. To enhance the competitiveness of a high-tech business, the corporate culture and value good for innovation should be formed and good communication channels and cooperation with members should be established in the organization to create the teamwork environment and facilitate the engagement of employees in various levels. To enhance the communication and cooperation in a high-tech organization to promote individual and overall innovation capability, it is suggested in this study that a high-tech business

should cope with the required innovation characteristics, provide diverse professional education, enhance the basis of corporate governance, and establish effective employee bonus mechanisms to induce employees' creativity to further reflect on the performance.

3. A high-tech business should apply corporate governance to combine the business activities which require long-term investment for results, e.g. R&D and innovation, with the long-term incentive system, e.g. employee bonus, to ensure the employees being willing to permanently and continuously devote to the business performance, rather than sacrificing long-term benefits for short-term interests. Particularly, well applying the long-term incentive characteristics of bonus plans would have a high-tech business, which requires R&D, innovative, and high knowledge talents, create better innovative performance.

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