

台灣上市資訊電子公司之股權結構、董事會特性與關係人交易對公司經營績效之影響

The Influences of Ownership Structures, Board of Directors' Characteristics, Related-Party Transactions upon the Operating Performance: a Case of Taiwan-Listed Info-Electronics Companies

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ABSTRACT

The purpose of this study is to verify and understand how the corporate operating performance of Taiwan-listed info-electronics companies is affected by ownership structures, the board of directors' characteristics, and related-party transactions. Convenience sampling was used to select elements of the population, made up of financial section chiefs or employees of higher levels at the afore-mentioned companies, for interviews based on statistics provided by the Taiwan Economic Journal (TEJ) database, namely the Return on Assets (ROA) and Earnings per Share (EPS). The linear Structural Equation Modelling (SEM) was used to verify the goodness-of-fit of the overall model, structural and measurement model. Findings from this study show that for Taiwan-listed info-electronics companies: (1) a sound ownership structure has an insignificantly positive influence on corporate governance; (2) the ideal characteristics of a board of directors have an insignificantly positive influence on corporate operating performance; (3) related-party transactions have a significantly negative influence on corporate operating performance.

Keywords: ownership structure, board of directors' characteristics, related-party transactions

1. Background and Purposes

The three major corporate governance issues in Taiwan are cross-holdings, related-party transactions, and the controlling shareholders resulted from a distinctive ownership structure. Not only do cross-holdings prevail among local companies, this study's author also found many company operators, or the hidden force behind them, unduly favour specific persons by way of related-party transactions and misappropriating company assets. Some of them use the capital and/or pledged shares of a listed company to manipulate stock prices, sending that particular company reeling from a financial crisis and the minority shareholders' equity decreasing (Chen, 2007).

To ease the agency problem between managers and shareholders, Agrawal and Knoeber (1996) in their study of ownership structures proposed policies involving the shareholding percentages of internal persons, the percentage of institutional investors, and the managerial labour market. At a publicly traded firm with a distributed ownership, shareholders are unable to directly and effectively monitor the managerial behaviour because of their large number and relatively small share-holding percentage. That explains why internal and external control mechanisms are required under distributed ownership, and the board of directors, among others, is the most important internal monitoring mechanism of a company. The board of directors in a typical U.S. company, especially the independent directors, mostly serves as a company's monitors. According to Article 202 in the Company Law of Taiwan that addresses the authority possessed by the board of directors, a company's operations may be conducted as per the decision of board of directors, unless otherwise required by the Company Law or company organizational rules to be determined by the shareholders' meetings. That

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explains why the a company's operating performance and stock prices are almost always affected by the structural qualities of board of directors, such as the share-holding percentage of directors/auditors, the percentage of external directors, the selection of internal directors based on the chairperson's professionalism and decision-making capability (Li, 2005).

In addition to the poorly overseen board of directors, the structural flaw of a company's income statements manipulated through related-party transactions for selfish reasons could be the real cause of the series of financial crises that ravaged Taiwan-based companies between 1998 and 2000, left big-name U.S. firms such as Enron, World com and Xerox panic-stricken during the 2001-2002 period, and at the same time took a serious toll on investors in America's slumping financial and stock markets. In addition to ownership structures and the board of directors' characteristics, the new dimension of related-party transactions is factored by this study's author into discussions of variables that may affect corporate operating performance.

In previous literature addressing the connections between ownership structures and company performance, or those between the makeup of board of directors and corporate operating performance, most researchers, in Taiwan and beyond, put forth theories, arguments and empirical studies with regard to the effects of agency problem, corporate ownership structures, and the makeup of board of directors on a company's operating performance. Empirically speaking, nevertheless, findings from such studies vary among industries, periods of time, and analysis approaches.

A highlight of Taiwan's industrial policy over the past decade or so, the high-tech electronics industry receives preferential treatments in either operating restrictions or business investments and, consequently, differs from the other industries when it comes to various aspects of ownership structures, such as the share-holding percentage of institutional investors and financial organizations, the shareholder-controlling or counterbalancing force within the board of directors, and the enhanced effectiveness of corporate governance mechanism. To begin this present study, a model was built to verify and understand how ownership structures, the board of directors' characteristics and related-party transactions affect a company's operating performance. The chief purposes of this present study include:

1. To verify and understand whether a sound ownership structure has a positive and significant influence on the corporate operating performance of Taiwan-listed info-electronics companies;
2. To verify and understand whether the ideal board of directors' characteristics have a positive and significant influence on the corporate operating performance of Taiwan-listed info-electronics companies;
3. To verify and understand whether related-party transactions have a significantly negative influence on the corporate operating performance of Taiwan-listed info-electronics companies.

2. Literature Review

Literature regarding how the main dimensions of this study (namely the ownership structures, board of directors' characteristics, and related-party transactions) affect corporate operating performance is reviewed in the following passages respectively.

2.1 The variables for "ownership structures"

In a study dated 1984, Prowse (1992) divided the ownership structures of 734 Japanese companies into five categories: the top five shareholders (S5), financial institutions (F5), non-financial institutions (NF5), individuals (I5) and other agents or organizations/institutions (O5).

Jensen and Meckling (1976) integrated the agency theory, ownership theory and pecking order theory to develop their own theory of company ownership structures that defines agency costs while exploring the growing number of agency problems facing companies nowadays due to distributed ownership. Citing the three types of agency costs (i.e., the monitoring cost, bonding cost, and residual loss) they said a company would either increase the internal persons'

share-holding percentage to serve shareholders' interests, or increase that of the management-monitoring external shareholders. Either way, the ownership concentration provides a viable means to alleviating asymmetric information, cutting agency costs, and bolstering the firm value. Likewise, Kesner (1987) said directors/auditors controlling a larger part of a company tend to develop a strong dependence that prompts them to monitor it closely, hence the improvements in firm value and corporate performance (Liou, 2008).

Li (2005) proposed the following variables for ownership structures:

- (1) The degree of ownership concentration: It is measured with the Herfindahl Index, an economic approach to evaluating market shares, or the sum of squares of ownership held by shareholders in every category. Chang (1999) adopted the reference values of 0.2 and 0.7 to determine how large or small a Herfindahl Index value is. While a company with a below-0.2 Herfindahl Index value has a distributed ownership, a value exceeding 0.7 indicates a highly concentrated ownership. If the index value falls between 0.2 and 0.7, the ownership structure is considered moderately concentrated.
- (2) The share-holding percentage of majority shareholders: a majority shareholder controls more than 10% of a company's total shares.
- (3) The share-holding percentage of professional managers: it is the sum of annual averages of the percentage of shares held by mid-to-high level executives (with decision-making rights) during their tenure as directors.
- (4) The share-holding percentage of institutional investors: the number of a company's stocks held by institutional investors at the yearend divided by the number of outstanding shares of common stocks in the same period of time.
- (5) The share-holding percentage of financial institutions: the sum of share-holding percentages of financial institutions both at home and abroad.

In this study, the sub-dimensions of ownership structures are operationally defined according to the dimensions and definitions proposed by Li (2005).

2.2 The variables for "board of directors' characteristics"

Li (2005) proposed the following variables for the board of directors' characteristics:

- (1) The size of board of directors: it grows in reverse proportions to the directors' monitoring capability.
- (2) The percentage of independent external directors: it refers to a company's percentage of external directors/auditors who do not double as management staffers or employees.
- (3) Chairperson duality (or CEO duality).
- (4) The share-holding percentage of directors/auditors: the number of a company's stocks held by directors/auditors divided by total stocks outstanding at the yearend.
- (5) The ratio of shares pledged by directors/auditors: the number of a company's stocks pledged by directors/auditors at the yearend divided by their shareholdings in the same period of time.

Chiu (2008) concluded four variables that may affect the board of directors' characteristics: (1) the size of board of directors: the total number of directors on a company's board at yearend; (2) the percentage of independent directors: the number of independent directors on a company's board at yearend divided by the total number of directors; (3) the percentage of institutional investors on the board of directors: the percentage of representatives of external firms, publicly traded or not, sitting on the board of directors; (4) chairperson duality: it occurs when a company's chairperson serves also as the CEO at the yearend.

In this study, indicators that measure the variables for "board of directors' characteristics" are defined on the basis of measurement dimensions and indicators proposed by Li (2005).

2.3 The variables for “related-party transactions”

Li (2005) proposed the following variables for related-party transactions:

- (1) Related parties' receivables-payables ratio: the sum of accounts receivable/payable of related parties at yearend divided by that of the company in the same period of time.
- (2) Related parties' Book-To-Bill Ratio (B/B Ratio): it is the related parties' total orders received and purchase made at the yearend divided by that of the company in the same period of time.

Pan (2006) defined related parties as the internal persons usually considered as a part of the company. They are able to either profit by means of the company's internal information, to which they have greater access to than the other investors, or avoid losses beforehand. The related parties can be divided into real and nominal ones, which are antonyms of each other.

In this study, “related parties” and indicators that measure the corresponding variables are defined on the basis of measurement dimensions and indicators proposed by Li (2005).

2.4 The variables for “corporate operating performance”

According to Russo and Fouts (1997), the Return on Assets (ROA) and Return on Sales (ROS) are the most common indicators that evaluate a company's operating performance.

Li (2005) discussed financial performance, which is a common indicator that measures a company's operating performance, using the following variables:

- (1) Return on Equity (ROE): it is the after-tax, before-interest Return on Assets (ROA) that helps determine a company's financial performance, or the operating performance delivered when a company has used all resources available, as shown in the equation below:

$$\text{ROA} = \frac{\text{Income after tax} + \text{interest payment} \times (1 - \text{tax rate})}{\text{Average total assets}} = \text{Net profit ratio} \times \text{Asset turnover ratio}$$

- (2) Earnings per Share (EPS): it indicates a company's profit earned per share, as shown in the following equation:

$$\text{Weighted average EPS} = \frac{\text{Net profit after tax} - \text{dividend on preferred stock}}{\text{Average number of outstanding shares of common stocks}}$$

Jung (2009) adopted ROE, net profit margin, total asset turnover, and the Financial Leverage Multiplier (FLM) as measurement indicators.

In the massive number of studies addressing the measurement dimensions of organizational performance, financial performance is commonly adopted as a measurement indicator since the benefits of organizational performance eventually are reflected in financial results. In a rapidly changing market characterised by swiftly circulated information, however, companies nowadays shall never rely on financial performance as the sole means to survival and competitiveness. In other words, it is impossible to fully gauge organizational performance using financial performance as the only indicator (Ling and Hung, 2010).

Ling and Hung (2010) consider organizational performance the sum of achievements of businesses/units involved with an organizational goal, intended for a given stage or the entire program, during a determined period of time.

As noted by Kaplan and Norton (1996), a company aiming at a strategic goal should refrain from over-emphasizing financial efforts and make non-financial ones at the same time. That is, a company's financial performance is measured in the financial dimension and a non-financial one that includes (1) the customer perspective; (2) the internal-procedure perspective; (3) the learning and growth perspective.

Following the advice of Ling and Hung (2010), this study's author conceptually defined "corporate operating performance" as the sum of achievements of businesses/departments involved with an organizational goal, intended either for a particular stage or for the entire program, during a given period of time. In this study, a company's performance is measured in financial and non-financial dimensions, as mentioned by Kaplan and Norton from the Balanced Score Card (BSC) point of view. While ROE and EPS are indicators that measure the financial dimension of corporate performance, the non-financial dimension includes (1) the customer perspective; (2) the internal-procedure perspective and (3) the learning and growth perspective.

2.5 Literature concerning ownership structures and corporate operating performance

Ever since Berle and Means (1991) introduced the concept of company ownership being separated from business operations, the conflicts of interest between business operators and shareholders have become a bone of contention. There are three different viewpoints regarding the relationship between ownership structures and company performance: (1) the interest-convergence hypothesis: the more concentrated the ownership, the higher degree of convergence of interests and costs, and consequently the better the corporate performance (Jensen and Meckling, 1976); (2) the conflict of interest hypothesis: the more concentrated a company's ownership is in the board of directors or a few internal directors, the higher likelihood of successful anti-takeover behaviour and the greater protection a corrupt manager receives, which fuels privilege abuse and excessive consumptions of management, and eventually hurts the corporate performance (Jensen and Ruback, 1983). (3) the irrelevance between ownership structures and corporate operating performance: people who adopt this point of view believe a company's performance is determined in the managerial labour market and has nothing to do with ownership structures (Fama, 1980). The three viewpoints have been discussed in studies worldwide and generated varying empirical findings (Deng, 2009).

Lemmon and Lins (2003) studied 800-odd publicly traded firms in eight East-Asian countries and found the internal shareholders (i.e., controlling shareholders and managers) of publicly traded firms with overly concentrated ownerships would tighten control over the company by ways of a pyramid structure, cross-holdings, or participation in the management. Such shareholders may exert controlling power vastly deviating from their claims over cash flow, make investments that serve their own interests, or embezzle company assets to lower the firm value.

An empirical study conducted by Huang (2004) shows that a well-governed company tend to enjoy greater profitability. That is, the controlling shareholders are more motivated to misappropriate company resources when their controlling power deviates considerably from their right to distributed dividends and their number of board seats.

Echoing the interest-convergence hypothesis, Hung (2004) researched Taiwan-listed firms between the years 1989 and 2002 and concluded that the share-holding percentage of internal persons (e.g., directors, auditors, managers, and majority shareholders) is positively correlated with the corporate performance. Unlike the interest-convergence hypothesis, however, the entrenchment hypothesis suggests a negative connection between the management's share-holding percentage and company performance.

Salancik and Pfeffer (1980) believe that the degree of ownership concentration is negatively linked to the graveness of information asymmetry yet positively linked to the shareholders' capability to replace incompetent managers, which forces the management to consider the shareholders' equity when selecting operating strategies. On the other hand, the difficulty for resource-strapped shareholders to work in coordination with one another under a distributed ownership makes it unlikely to threaten the management with a united front of shareholders, hence greater chances of decreased shareholders' equity.

In a study of 345 Taiwanese firms, listed or not, in the years 1999 and 2000, Yeh, Lee and Woidtke (2001) found 75.96% of the companies were family-controlled, despite the non-linear relationship between family control and company

performance. In other words, companies tend to perform well when the majority shareholders' shareholding percentage is higher, or when the family controls less than 50% of the board seats.

Comparing the ownership structures in Japanese and U.S. companies, Prowse (1992) said Japanese company ownerships were highly concentrated on majority shareholders, who play the most important role in a financial institute. He also mentioned a positive link between the rewards for ownership concentration and that for a greater controlling/management power at the relatively independent Japanese firms.

This study's author boldly derived the following hypothesis from studies mentioned above, even if they neither agree in empirical findings regarding the influence of ownership structures on corporate operating performance, nor address Taiwan-listed info-electronics firms:

Hypothesis 1 (H₁): A sound ownership structure has a positive and significant influence on the corporate operating performance of Taiwan-listed info-electronics companies.

2.6 Literature concerning the board of directors' characteristics and corporate operating performance

Most studies about the functions of a board of directors are focused on how corporate performance is affected by the board's characteristics, namely the percentage of external directors/auditors, CEO duality, the size of board of directors, and the percentage of shares pledged by directors/auditors. A majority of the literature review supports the assumptions that the percentage of external directors/auditors is positively linked to corporate operating performance, that the ratio of shares pledged by directors/auditors is significantly and negatively related to company performance, with that negative relationship intensifying amid financial crises or other forms of bear market (Deng, 2009).

Ideally speaking, Bacon (1973) said directors and auditors should come from varying backgrounds with different personal qualities, so they could give the company advice through brainstorming and help it make better decisions.

Lipton & Lorsch (1992) support restrictions on the size of board of directors for efficiency reasons. After all, a larger board often leaves the managers less monitored and agency problems worsened.

Li (2005) noted that the firm value grows along with a company's percentage of external directors/auditors. Since independent directors/auditors tend to make objective evaluations of the business operators' performance (from the company's viewpoint) and readily replace any incompetent one, the operating staff is prompted to improve the company's performance and competitiveness, hence the greater chances of sustainable operations. In bullish times, the number of shares pledged by directors/auditors and corporate performance have something to do with the purpose of directors/auditors' share pledging, while the relationship between share pledging and stock-price fluctuations reflects investors' predictions of such purposes. In a bear market, however, share pledging usual causes the agency problem to worsen as the tumbling stock price imposes a financial pressure on share-pledging directors/auditors, making their interests more likely to supersede those of the external shareholders (i.e., the agency conflict intensifies between controlling shareholders and external investors), which in turn sends the company's performance declining.

Citing the interest-convergence hypothesis, Morck, Shleifer and Vishny (1988) argued that directors/auditors controlling a larger part of the company tend to share much the same interest with shareholders, which prompts them to serve as a dedicated monitoring force that drives up corporate performance, in hopes of winning shareholders' support and approval.

For the board to achieve optimal functions, Fama and Jenson (1983) advised that it should comprise internal directors with the other experts, academia representatives or retired CEOs hired as external directors.

Donaldson and Davis (1991) found it easier, faster and more effective for a CEO-chairman to execute company strategies. A CEO is held accountable for corporate performance with a good understanding of, and control over, the company's internal information, therefore he/she would spare no effort in running the company while offering assistance to

the monitoring mechanism, in order to increase both the firm value and shareholders' wealth.

After studying randomly selected companies during the years between 1988 and 1992, Sridharan and Marsinko (1997) found a company characterised with CEO duality performs better in both operating margin and asset productivity, with the improved performance reflected in firm value and subsequently the market response.

Disagreeing with Sridharan and Marsinko, Core, Holthausen and Larcker (1999) found a negative connection between the effectiveness of corporate governance mechanism and the amount of rewards earned by a CEO. Also, they noted a significantly negative relationship between ownership structures and the consequent operating performance (or stock returns).

This study's author boldly derived the following hypothesis from the literature mentioned above, even if it neither agrees in empirical findings regarding the influence of board of directors' characteristics on corporate operating performance, nor address Taiwan-listed info-electronics firms:

Hypothesis 2 (H₂): The ideal board of directors' characteristics have a positive and significant influence on the corporate operating performance of Taiwan-listed info-electronics companies.

2.7 Literature concerning related-party transactions and corporate operating performance

Ho, Chiu and Yeh (1997) considered related-party transactions a potential cause of equity-related agency problems. Moreover, Yeh, Ko and Li (2002) in their empirical study said an increase in the related parties' receivables-payables ratio or BB Ratio affects corporate operating performance in a negative way.

According to Li (2005), a company tends to lie about operating revenues or accounts receivable when there are too many related-party transactions in its accounts receivable, especially in the case of excessive and frequent transactions with overseas subsidiaries, combined with surplus funds used in transactions with related parties (or an exorbitant BB Ratio of the related parties). Given the usually longer collection period for accounts receivable in this kind of transactions, extra attention should be paid to the accounts receivable turnover ratio.

This study's author boldly derived the following hypothesis from the literature mentioned above, even if it does not address issues about Taiwan-listed info-electronics firms:

Hypothesis 3 (H₃): Related-party transactions have a significantly negative influence on the corporate operating performance of Taiwan-listed info-electronics companies.

2.8 Research framework

A research framework is derived from the research purposes, hypotheses and literature review above, as shown in Figure 1:

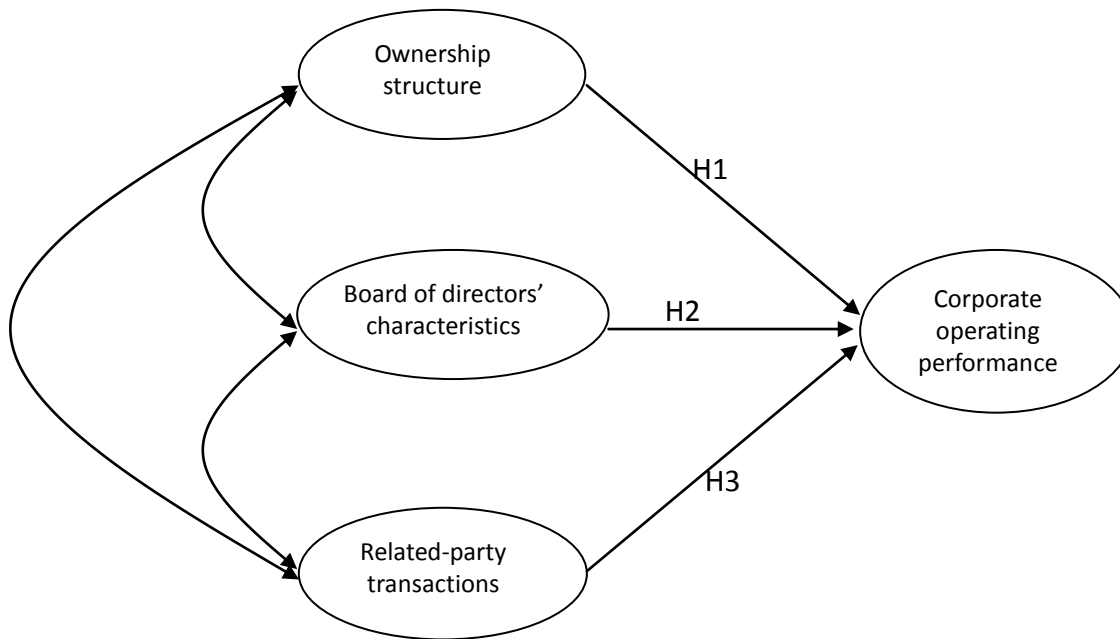


Figure 1 Research Framework

3. Methodology

3.1 Selecting elements from the target population and designing the questionnaire

In this study, copies of questionnaire were given out to managers at Taiwan-listed info-electronics companies, selected using the convenience sampling method. To bolster the content validity and reliability, copies of expert questionnaire were given out before the pilot-test, followed by a revision/removal of inappropriate items and a post-test, where 230 copies of questionnaire were sent to managers at Taiwan-listed info-electronics companies. The return rate was 83.5% as 192 out of the 230 copies were returned valid. Table 1 shows the number of questionnaire items under each variable for the main dimensions (i.e., conceptual dimensions) and sub-dimensions (i.e., operational measurement dimensions). Something worth noting about the questionnaire is that the measurement indicators for “ownership structures”, “board of directors’ characteristics”, “related-party transactions” and “corporate operating performance” are created according to the measurement variables in a questionnaire presented by Li (2005).

3.2 Processing the questionnaire data and the measurement system

To verify the proposed research framework, the Structural Equation Modelling (SEM) was used in this study to conduct a Confirmatory Factor Analysis (CFA) of the research model. The questionnaire was built on four latent variables (i.e., ownership structures, board of directors’ characteristics, related-party transactions and corporate operating performance), each containing several observable/explicit variables, as stated in the Table below. Categorized under each observable/explicit variable are a number of questionnaire items. The collected survey data was then processed to build a primary database. Even though the questionnaire was designed on the basis of Multi-Dimension Measurement, the “Double Measurement” approach was adopted to ensure smooth data processing by computer software (Chen, 2010). Table 1 shows the number of questionnaire items under each implicit and observable variable, as well as the references.

Table 1 Total Number of Question Items and Questionnaire Structure

Main Dimensions (Latent variables)	Observable dimensions/measurement indicators	Number of Items	References
Ownership Structures	Ownership concentration	2	Li (2005)
	The share-holding percentage of majority shareholders	2	
	The share-holding percentage of professional managers	2	
	The share-holding percentage of institutional investors	2	
	The share-holding percentage of financial institutions	2	
Board of directors' characteristics	The size of board of directors	2	Li (2005); Chiu (2008)
	The share-holding percentage of independent external directors	2	
	Chairperson duality	2	
	The share-holding percentage of directors/auditors	2	
	The ratio of shares pledged by directors/auditors	2	
Related-Party Transactions	Related parties' Receivables-Payables Ratio	2	Li (2005);Pan (2006)
	Related parties' Book-To-Bill Ratio (B/B Ratio)	2	
Corporate operating performance	EPS and ROA	4	Kaplan & Norton (1996); Ling and Hung (2010); TEJ database
	The customer perspective	4	
	The internal-procedure perspective	4	
	The learning and growth perspective	4	

3.3 Linear structure model

The CFA, an analytical approach opposite to the Exploratory Factor Analysis (EFA), was conducted in this study by pairing every two of the four main dimensions (i.e., "ownership structures", "board of directors' characteristics", "related-party transactions" and "corporate operating performance"). The SEM comprises structural and measurement models to effectively solve the cause-effect relation between implicit variables. Moreover, this study's author intended to verify the models in three different ways: (1) whether the overall model's goodness-of-fit conforms to the goodness-of-fit indices; (2) the goodness-of-fit of measurement model; (3) the goodness-of-fit of structural model.

4. Analyses and Results

4.1 Test results regarding fit of the overall model

A framework was constructed for the overall model following the literature review and a factor analysis of sample data. As recommended by Hair et al. (1998), the fit of the overall model was measured in three different ways: the Measures of Absolute Fit, the Incremental Fit Measures, and the Parsimonious Fit Measures. Table 2 shows the test results concerning fit of the overall model (Chen et al., 2008).

Table 2 Analysis of Fit of the Overall Model

Goodness-of-fit Indices		Standards for Evaluation	Results
Measures of Absolute Fit	GFI	>0.9	0.921
	AGFI	>0.8	0.903
	RMR	<0.05	0.021
Incremental Fit Measures	NFI	>0.9	0.912
	CFI	>0.9	0.901
Parsimonious Fit Measures	PNFI	>0.5	0.732
	PGFI	>0.5	0.713

4.2 Measurement System in the Model

The factor loading of each item under the latent/implicit variables (or main dimensions) and manifest/explicit variables (or sub-dimensions) mostly measures the intensity of linear correlation between each item under the explicit variables and latent/implicit variables. The closer the factor loading is to 1, the more capable the measurement variable, or sub-dimension variable, is of measuring the main dimensions. This study proves reliable with above-0.7 factor loading in all sub-dimensions. In other words, all sub-dimensions (or explicit variables) in the model's *measurement system* appropriately measure all the main dimensions (i.e., implicit variables). The Average Variance Extracted (AVE) calculates an implicit variable's explanatory power of variance regarding each measurement variable; a higher VE indicates greater reliability and convergent validity of the implicit variable. It usually takes an above-0.5 VE to show the explanatory variance of dimensions exceeds the measurement error (Fornell and Larcker, 1981). Because all AVEs are larger than 0.5 in this study, the latent/implicit variables have excellent reliability and convergent validity (See Table 3 and Figure 2).

Table 3 Judgment Indicators in the Measurement Model

Main Dimensions	Double Measurement Indicators	Factor Loading	Cronbach's α	Average Variance Extracted
Ownership Structures (S)	S1	.81	.82	.67
	S2	.83	.83	.66
Board of Directors' Characteristics (B)	B1	.82	.83	.61
	B2	.83	.84	.62
Related-party Transactions (R)	R1	.81	.82	.63
	R2	.83	.83	.64
Corporate Operating Performance (Y)	Y1	.89	.88	.82
	Y2	.88	.89	.81

4.3 Coefficient of Determination

The Coefficient of Determination, also known as Squared Multiple Correlation (SMC), is the independent variables' explanatory power regarding the dependent ones under each latent variable. The R^2 value shown in Table 4 indicates that the implicit independent variable has adequate explaining ability on the implicit dependent variable respectively.

Table 4 Path Coefficient of Determination

Coefficients of Determination	R ²
Ownership Structures (S) → Corporate Operating Performance (Y)	0.79
Board of Directors' Characteristics (B) → Corporate Operating Performance (Y)	0.77
Related-party Transactions (R) → Corporate Operating Performance (Y)	0.76

4.4 Path Coefficient of Implicit Variables in the Model

Table 5 shows the estimates of standardized path coefficient and Critical Ratio (C.R.) between latent/implicit variables, following an internal goodness-of-fit test of the model. Figure 2 is an illustration of the path analysis results.

Table 5 Parameter Estimates for Implicit Variables

	Estimate	S.E.	C.R.	P
Ownership Structures (S) → Corporate Operating Performance (Y)	.113	.063	1.794	
Board of Directors' Characteristics (B) → Corporate Operating Performance (Y)	.103	.057	1.807	
Related-party Transactions (R) → Corporate Operating Performance (Y)	-.432	.134	-3.224	***

Note: ***indicates a statistically significant C.R. value ($\alpha=0.001$)

The following conclusions were derived from afore-mentioned analyses:

1. Ownership structures exert a positive yet insignificant influence on the operating performance of Taiwan-listed info-electronics companies. H₁ is supported with an estimated 0.11 standardized path coefficient (Hypothesis partially substantiated);
2. The board of directors' characteristics exert a positive yet insignificant influence on the operating performance of Taiwan-listed info-electronics companies. H₂ is supported with an estimated 0.10 standardized path coefficient (Hypothesis partially substantiated);
3. Related-party transactions have a significantly negative effect on the operating performance of Taiwan-listed info-electronics companies. H₃ is supported with an estimated -0.43 standardized path coefficient (Hypothesis substantiated).

5. Conclusions and Suggestions

This chapter presents conclusions according to above-mentioned analyses and results, followed by the contributions of this present study. Finally, advice for future researches is offered, with limitations facing the author during research process explained.

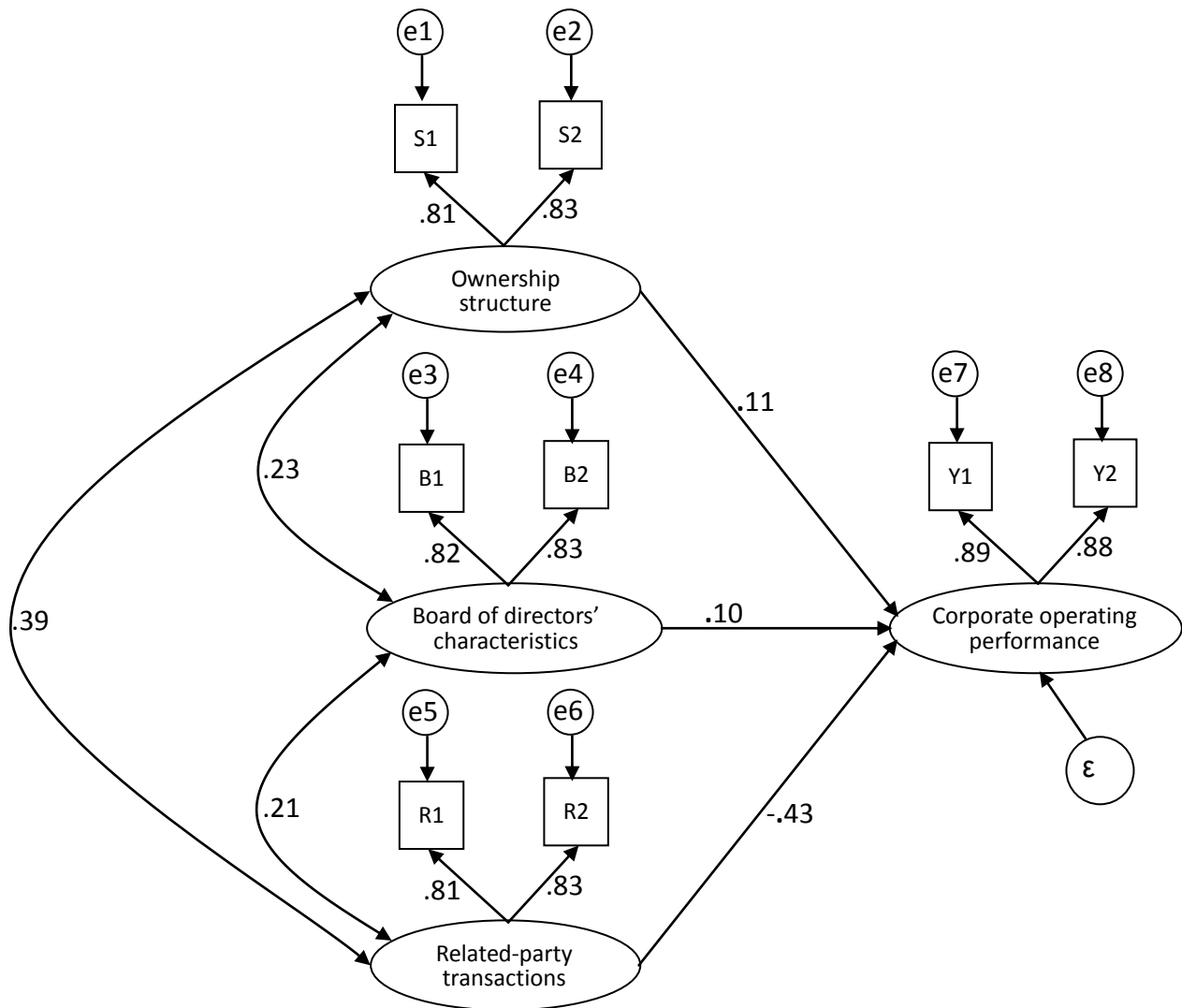


Figure 2 Standardized Results of SEM Analysis

5.1 Conclusions

In summary, this present study surveyed managers at Taiwan-listed info-electronics companies, with an SEM built out of primary data obtained from the TEJ database to verify the influence of ownership structures, the board of directors' characteristics and related-party transactions on corporate operating performance. The conclusions are specified as follows:

5.1.1 The influence of ownership structures on corporate operating performance

The research findings show a substantiated H_1 (i.e., a sound ownership structure has a positive influence on corporate operating performance), which to a certain degree agrees with some researchers mentioned in the literature review, such as Jensen and Meckling (1976), Jensen and Ruback (1983), Lemmon and Lins (2003), Deng (2009), Huang (2004), Hung (2004), Salancik and Pfeffer (1980), Yeh, Lee and Woidtke (2001) and Prowse (1992). However, H_1 does not fully match the literature probably because the empirically results tend to vary among industries, periods of time, or analysis methods (for example, CFA is focused on the overall outcome concerning latent variables).

5.1.2 The influence of board of directors' characteristics on corporate operating performance

The research findings show a substantiated H_2 (i.e., the ideal board of directors' characteristics have a positive yet insignificant effect on corporate operating performance), which to a certain extent agrees with some researchers mentioned in the literature review, such as Bacon (1973), Deng (2009), Lipton (1992), Li (2005), Morck, Shleifer & Vishny (1988),

Fama and Jensen (1983), Donaldson and Davis (1991), Sridharan and Marsinko (1997) and Core, Holthausen and Larcker (1999). However, H_2 does not fully match the literature probably because the empirically results tend to vary among industries, periods of time, or analysis methods (for example, CFA is focused on the overall outcome concerning latent variables).

5.1.3 The influence of related-party transactions on corporate operating performance

The research findings show a substantiated H_3 (i.e., related-party transactions have a significantly negative effect on corporate operating performance). Generally speaking, related-party transactions are always negatively linked to corporate operating performance, with the company size growing over time. The companies surveyed display an increase in the financial leverage ratio, or debt-to-equity ratio, which matches the statements of Yeh, Ko and Li (2002) and Li (2005).

All in all, the three conclusions indicate a satisfying goodness-of-fit of the model established by this study's author.

5.2 Contributions of study

1. This study is expected to yield exciting outcomes that empower companies to enhance corporate performance through a well-structured ownership, as well as a good understanding of the board of directors' characteristics and related-party transactions. That way, the companies will keep growing with a bolstered potential of sustainable development.
2. This study's author performed modelling following a literature review, which suggests the greater importance of EFA, and verified the model's goodness-of-fit to find out if it has satisfying fit-of-goodness effects. This study is a CFA-based one that addresses a crucial business-practice issue worth further research efforts.
3. The indices built and verified in each dimension of this study are key factors for a company's sustained competitiveness; they offer guidance to corporate managers in decision making.

5.3 Limitations

Considering the limited amount of research resources, the non-probability, convenience sampling method was adopted in this study for convenience purposes, with all samples selected on the bases of "proximity" and "measurability" only, hence a noticeable sampling bias and unsatisfying reliability. The future studies are advised to use simple random sampling or stratified random sampling instead.

5.4 Suggestions for researchers

In fact, discussions of relations among ownership structures, board of directors' characteristics, related-party transactions and corporate operating performance are applicable to companies other than Taiwan-listed info-electronics firms. Since researchers disagree over how KM and intellectual capital are defined, and also over the measurement indicators for the four aspects mentioned above, this study's author focused solely on managers at Taiwan-listed info-electronics companies. To ensure extensive data collection or innovations, researchers may conduct similar studies on the operating performance of companies of disparate natures or non-info-electronics firms, so as to identify the qualities of a well-performing firm while making cross-industry analyses.

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