MANAGEMENT TEAM CHARACTERISTICS: EVIDENCE FROM UNIVERSITY GOVERNANCE AND SCHOOL PERFORMANCE

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ABSTRACT

The paper examines cognition from the viewpoint of internal management teams of private universities against satisfaction with school performance, applying the SEM model. Empirical results show that the board's operational effectiveness and attendance rate for internal important meetings held on campus have a significantly positive relationship with implementing effectiveness and satisfaction with school administrative performance. The satisfaction with school administrative performance and school performance satisfaction showed a significantly positive relationship. The attendance rate for important internal meetings held on campus, the implementing effectiveness, and school performance satisfaction showed a significantly negative relationship. However, the intermediary effect enhances school performance satisfaction to achieve a positive effect, indicating the cognitive level of satisfaction for school administrative performance impacts school performance satisfaction.

JEL: I20, I29, C39

KEYWORDS: University Governance, School Performance, SEM model

INTRODUCTION

Development of information technology in the past ten years, changes in the socioeconomic environment, and competition among universities, have resulted in pressure for Universities to reform (Shattock, 1999; Amoral and Magalhães, 2002; Chevaillier, 2002; Salter and Tapper, 2002; Melo et al., 2010). Although the government has not abandoned control over higher education, it has changed to taking a supporting role. Governments encourage universities to take initiative through a more indirect approach in order to achieve the target efficacy and efficiency as well as the changes in social demand (Goedegebuure et al., 1994).

Governance is the structure and process which forms decisions in higher education (Sporn, 2006) University governance is further divided into external and internal governance mechanisms. External governance is mainly the supervision of universities and colleges from the Ministry of Education (MOE) and the specification of university laws. Currently, university laws specify that the selection of public university presidents should take place 10 months before the expiration of the term of the existing president. The school forms a president selection committee to choose the president through a public recruitment process, with the committee recruited by the MOE or subordinate local government. Presidents of private universities are chosen by a selection committee organized by the Board of Directors. The selection is submitted to the MOE for approval and recruitment. The internal governance mechanism is determined by the relationship between academic affairs meetings, board of directors, and the president. The academic affairs meeting is the highest decision-making meeting in the university. This decision model prevents arbitrary decisions. Although intentions are good, the actual implementation could cause unknown responsibilities and powers in the university as well as ineffectiveness (Chen Weizhao, 2002).

This paper examines internal university governance to discuss the relevance of the university governance mechanism for school performance. The university governance mechanism and school performance use recognition from supervisors of administrative and academic departments toward the operations of the university governance mechanism. It uses school performance in the internal management team of the university. School performance is the exhibition of school quality, which is therefore evaluation with

more objective measuring standards and multi-dimensions. The study applies dimensions such as administrative performance and external performance to evaluate the performance of universities. LISREL is the confirmed linear structural relation (LISREL) and combines factor analysis and path analysis. This technique can concurrently process the causality between multiple dependent variables and independent variables. This study applies SEM (Structural Equation Modeling) to verify the research assumptions for the efficacy of board of directors, meeting effectiveness, administrative effectiveness, administrative performance satisfaction and the variables of external performance satisfaction. This provides a reference for the establishment of university governance mechanisms and agencies of education based on objective empirical results.

The remainder of this study is organized as follows. In the next section, a literature review and hypothesis development is presented. The following section has an introduction to the study's methodology, along with a description of our sample and variable measures. The empirical results are then presented, and conclusions and implications are provided in the final section.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

University Governance

University governance includes external and internal governance; the former emphasizes the school and external stakeholders, including the relationship among the government, industry, and communities. The latter is concerned with the power distribution within the school, the decision-making process, and intentions. When the substantive and procedural degree of autonomy in universities remains sufficiently high, external stakeholders are unlikely to interfere with the university affairs. In contrast, when the substantive autonomy of universities remains low, universities are more likely controlled or interfered with by external stakeholders and autonomy is constrained by procedures (Dai Xiaoxia, 2007).

University governance aims to facilitate university development, assure effective innovation, pass on knowledge, and enhance education quality and competitiveness, in order to cultivate talents needed by society and to provide services for the society. The concept of university governance stresses that each university is obliged to pursue diversity and excellence under its criteria and environment, to develop outstanding education characteristics (Huang Zhengjie, 2008). Cheng Weizhao (2002) suggested that external governance mechanism, in terms of future development in university governance, refers to the incorporation of public universities and the repositioning of the relationship between the MOE and the universities. The internal governance mechanism is adjusted to the internal operational mode of universities by establishing a responsible-power-consistent decision-making system.

Stakeholder theory is about organizational management and commercial ethics, which is used mainly for solving ethical and value issues in organizational management. Stakeholder theory claims that all stakeholders must participate jointly in governance. The corporate manager must develop a strategy meeting the needs of different stakeholders in order to maintain sustainable development (Freeman, 1984). The Association of American University Professors constructed a joint governance theory based on the board of directors, administration, and faculty, which is based on stakeholder theory (Li Fuhua, 2007).

University Governance Mechanism

The basis of laws and regulations for university governance (ROC) is the private school law. According to Article 31 of the ROC, the board of directors meeting shall be convened in accordance with the Articles of Association. Article 41 of ROC specifies: "The president shall process the academic affairs in accordance with the laws and articles of association to execute resolutions reached by the board of directors, who are subject to the supervision and assessment on behalf of the school within the scope of job tasks." The specification of private university law shows that the governance structure of private universities is similar to company governance with the exception of shareholder meetings. Private universities treat the board of directors as the decision-making agency while the president serves as the

general manager of a company. The president executes academic affairs and is held responsible for school performance.

School Performance

The implementation of university governance must be operated through the school organization framework, and therefore school performance is also exhibited through operation of the organizational framework. Performance refers to measurement of the degree of achievement for organizational objectives, using indicators and measurement methods to present the degree of achievement for plans in terms of mission, objectives, and purposes (Duquette and Stowe, 1993). It could also reflect behaviors taken by individuals to achieve organizational objectives, guiding the resource allocation of the future organization (Campbell, 1990). The measurement indicator of performance is no more than efficiency, efficacy, and quality (Browning, 1997; Elizabeth, 1996; Donna, 1996). Running a school with efficacy not only requires appropriate curricula and sufficient equipment but also skillful teachers. The efficacy of the president can affect teacher efficacy and teacher efficacy will directly affect student efficacy (Wu Qingshan, 1998). Chang Kuopao (2003) divided the factors of school efficacy into 1. Education Objectives: School vision, education objectives, development and planning of key and characteristics. 2. Education Input: Education resources, strategies, courses, organization, environment, and supportive growth. 3. Education Process: Leadership, teaching, research, development, marketing, mobile solutions, learning atmosphere, teacher-student participation, and interaction, school, parent and community relationship. 4. Education Output: School efficacy, reform, progress, and performance, teacher efficacy; teaching quality, work satisfaction, student efficacy; learning behavior, quality of learning performance, and administrative efficacy; legalization, efficiency, administrative communication, and presidential leadership.

School performance requires additional evaluation mechanisms in addition to the measurement of internal administrative management system. The purpose of higher education assessment is to enhance the teaching, research and management quality of higher education institutions, which can be divided into internal and external assessments. The purpose of internal assessment is to establish the self-control mechanism to improve the education quality of the institution. External assessment, on the other hand, requires an external group or team to execute the assessment based on external certification or accrediting requirement, in order to comply with the performance requirement as the main purpose (Su Jinni, 1997).

The Higher Education Evaluation & Accreditation Council of Taiwan (hereinafter referred to as HEEACT) accepts a commission from the MOE to conduct an evaluation to enhance quality in higher education. Based on the premise of university autonomy and separation between evaluation of academic affairs and subject professional evaluation, the evaluation works includes: (1) Evaluation of Academic Affairs: evaluation of academic affairs adopts a quality audit system to assist the universities with the planning and implementation of a university self-evaluation mechanism in addition to reviewing the self-evaluation report submitted from all schools. (2) Evaluation of Departments and Colleges: The evaluation methods include self-evaluation and peer in-field visit evaluation, followed by visiting evaluation committees to judge the accredited status of department quality. The accreditation status is divided into "passed," "to be observed," and "failed." (3) Performance Statistics Analysis: The university performance statistics emphasize the performance output of universities with focus on both quality and quantity, as well announcing in priority ranking. The purpose aims to recognize quality universities with excellent performance (HEEACT, 2010).

The evaluation of vocational colleges is commissioned by the Ministry of Education to the Taiwan Assessment and Evaluation Association (TWAEA) for organization. Assessment results are divided into administration, professional colleges and professional departments for announcement. The assessment results are divided into "Class 1 (Excellence), Class 2 (Good) and Class 3 (To be improved)." To continue the follow-up of assessment of subsequent teaching quality improvement for various schools, the three assessment classes for departments (colleges) organize the counseling visits and follow-up assessment, while other schools re-organize comprehensive assessment for other schools in 4 years (TWAEA, 2005).

Due to international competition and poor domestic finance, the Ministry of Education applied its limited resources to universities with the most potential for development to maintain quality in higher education by formulating competitive educational funding. Universities compete in the evaluation and the schools that outperform others receive grants (Liu Arong, 2009). Competitive research funds can only be allocated according to school performance using assessment classification (Gai Zhesheng, Liu Xiuxi, 2006; HEFCE, 2000). To guide the university with classified development, the MOE corrected university inclination toward over emphasis on research and less on teaching by improving the teaching quality in universities. The Ministry started implementing the application for "Incentives for University Teaching Excellence Program" (hereinafter referred to as Teaching Excellence Program) in 2004 and announced the awarded schools and grant amounts in 2005. The MOE follows the development overview of the school and their program when giving teaching excellence program grants determined through in-field visits from the committee. Hence, whether if the universities are awarded with grants and the amount of grants, are regarded as the evaluation results from the Ministry of Education towards the development research or teaching from the school. Hence the Teaching Excellence Program grant can be used as the objective standard for evaluating school performance.

Coccari and Javalgi (1995) summarized the literature on how students choose schools through explorative research and proposed 20 determinants: faculty quality, course level, tuitions, convenience in life, teaching quality, curriculum arrangement, school locations, student-faculty ratio, faculty-student interaction, scholarship, admission permit, teaching equipment, course counseling, sport class, employment services, university libraries, computer equipments, health insurance service, barrier-free environment, and campus safety.   It is clear the factors students take into consideration diverse. Changes in student numbers can explain the comprehensive results The changes in recruitment and student numbers are the focus of attention for universities under the currently competitive environment. For this reason, this study applies the effectiveness of school recruitment as the external performance index for measuring the school performance of schools.

This study consists of the supervisors of the internal administrative units and the teaching units of the university and their cognition to the university governance system operation and school performance. Such dimension divides school performance into two aspects, including MOE grants and assessment projects as well as the recruitment effectiveness.

University Management Team and School Performance

The next sections discuss the cognition from the supervisors of the administrative units and academic units inside the school toward university governance mechanism operation and the relevant school performance.

Administrative Performance

In addition to BOD supervision, the internal administrative operational effectiveness of private universities take into consideration university governance in terms of confirmation, decision, and resource allocation of the university internal values, mission, and objective, authorization and hierarchical system model. It also considers the different academic fields inside the university, and the relationship with external units such as government, enterprise and communities (Edwards, 2003). University governance is the framework and process of authorized decision-making, which has equivalent importance for the intrinsic and extrinsic university stakeholders (Gayle et al., 2003).

According to stakeholder theory, all involved with interests should jointly participate in governance. The interested affiliated persons to the university can be divided into four layers: 1. First Layer: Core stakeholders, including faculty, students and administrators. 2. Second Layer: Important stakeholders, including alumni and financial allocation. 3. Third Layer: Indirect stakeholders, including affiliated person having contract with the school, such as the scientific research fund providers,

industrial-university cooperation, loans providers. 4. Fourth Layer: Marginal stakeholders, including the local communities and social public (Boatright, 2002). Birnbaum (1991) suggested that in school governance, the senate is efficient, depending on the type of organizational model the university is attributed to. These findings suggest the influence of university administrative performance is subject to the administrative effectiveness of the administrator, while the effectiveness of teachers participating in administration is affected by the effectiveness of various meetings held in universities.

In sum of the aforementioned, the major stakeholders of administrative performance satisfaction consists of faculty and administrators related to core stakeholders, because the members participating in decision and meetings in school consists of teachers and school administrative supervisors. The following hypotheses are drawn: The school BOD is the highest decision-making authority with supervision over key school issues such as development in academic affairs, financial management, fund implementation, and president school effectiveness. The BOD have influence on the administrative performance through the president's execution of academic affairs. Hence, the administrative performance satisfaction is subject to influence from the BOD effectiveness, meeting effectiveness, and administrative effectiveness. Administrative satisfaction is measured on two dimensions: administrative operation satisfaction and meeting effectiveness satisfaction. BOD effectiveness is divided into planning and degree of investment required from the BOD for the development of academic affairs and financial management, as well as the administrative supervision on the academic affairs. Meeting effectiveness is divided into procedural performance of important meetings, attendance rate and the efficacy of president hosting the meetings. Administrative performance is divided into degree of requirement for the effectiveness of administrative affairs in individual administrative supervisors and other administrative supervisor.

H1: The BOD effectiveness has direct impact on the administrative performance satisfaction

H2: Meeting effectiveness has direct impact on the administrative performance satisfaction

H3: Administrative effectiveness has direct impact on the administrative performance satisfaction

Administrative Performance Satisfaction and External Performance Satisfaction

The quality of school performance requires an external evaluation mechanism apart from the measurement of internal administrative management systems. Under the certification or accreditation requirement, external assessment is conducted by external groups or teams in compliance with the performance requirement (Su Jinni, 1997). School performance is measured by external evaluation mechanism. School performance in this study is defined as external performance that includes assessment performance, MOE grants and teaching excellence grants and recruitment effectiveness. To promote the development of various universities, the MOE should periodically organize the assessment and announce the results as the reference for government grants. Hence, the assessment mechanism of MOE undergoes involves an in-field visit and evaluation of universities through professional assessment agencies, prepared in the form of assessment report. The administrative performance satisfaction for each school not only affects the smoothness of daily operations of academic affairs but also the effectiveness of in-field assessments. Hence, the administrative performance satisfaction affects the assessment of external performance.

The main personnel related to administrative satisfaction consist of faculty and administrators because members participating in decision-making and meetings in school include faculty and on-campus administrative supervisors. Administrative performance satisfaction is subject to influence from BOD effectiveness, meeting effectiveness and administrative effectiveness. External performance such as the MOE grant and assessment project evaluation provide a basis for fund allocation and evaluation through the various assessment mechanism. The recruitment effect is the index for comprehensive school performance. Moreover, external performance satisfaction is affected by administrative effectiveness inside the school. School administration is subject to monitoring from the school BOD and supervision from competent authorities, which could be represented or affected by administrative performance

satisfaction. Hence, the study further examines the intermediary effect of administrative performance satisfaction in addition to exploring the direct impact from individual variables. The following hypotheses are examined:

H4: Administrative performance satisfaction will have direct impact on external performance satisfaction

H5: BOD effectiveness has a direct impact on external performance satisfaction
H5-1: BOD effectiveness through administrative performance satisfaction has a direct impact on external performance satisfaction

H6: Meeting effectiveness has a direct impact on external performance satisfaction
H6-1: Meeting effectiveness, through administrative performance satisfaction, has a direct impact on external performance satisfaction

H7: Administrative effectiveness has a direct impact on the external performance satisfaction
H7-1: Administrative effectiveness, through administrative performance satisfaction, has a direct impact on the external performance satisfaction

<u>The Study Framework of University Management Team and School Performance</u>

The study framework shown in Figure 1 is constructed from research hypotheses H1 to H7. The study applies corporate governance and university governance. The first section discusses the BOD structure and operations as well as school performance relevance in private universities. The study also analyzes the establishment of schools and correlation between the different BOD models and structures. The second section discusses the cognition of supervisors from administrative and academic units toward the university governance mechanisms operation and school performance. The former applies more objective data to analyze the structure and operations of private university BOD and school performance relevance, while the latter applies the views from internal unit supervisors toward the university governance mechanisms operation and school performance.

Figure 1: The Relevance Research Framework between the University Management Team and School Performance
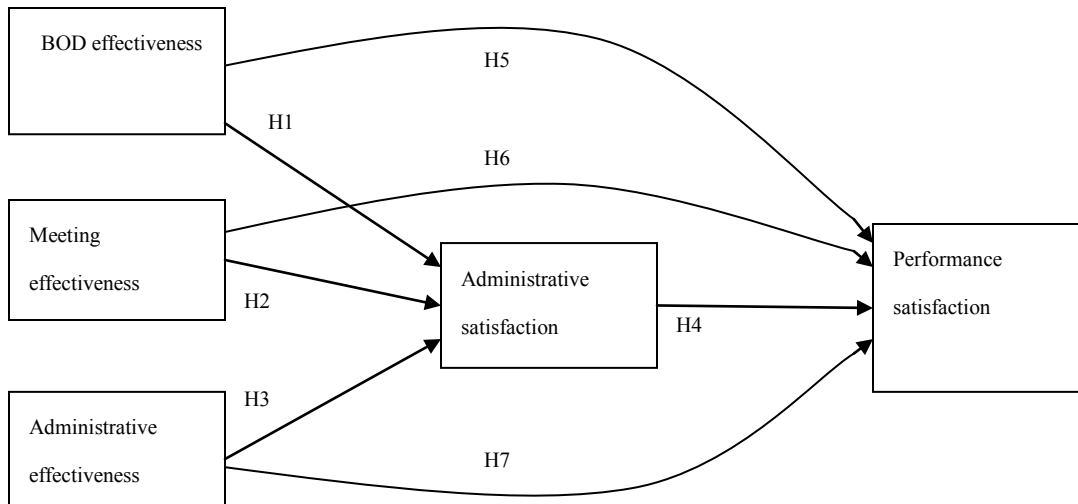
This figure shows the research framework of this paper and the relevance between the university management team and school performance.

DATA AND METHODOLOGY

The hypothesis testing capability of SEM and the exclusion of independent variables with significant liner coincidence involves one variable as the dependent variable of another variable and coincidentally the independent variable of other variables. This allows the analysis of more complex casualties than regular path analysis (Joreskog and Sorbom, 1993). SEM can be tested through Chi-square tests to verify the fitness between the overall theoretical model and data. Testing through the significance of a specific path through the t value or the sequential chi-square difference test is also possible. SEM consists of two parts. One is the descriptive latent variables without being able to be directly observe the structural equation model between each other. The other is the measurement model between the manifest variables directly observed to describe the latent variables (Hair et al., 1998). To incorporate the research framework, the latent exogenous variable is preliminarily defined as the BOD effectiveness (ξ_1), meeting effectiveness (ξ_2), administrative effectiveness (ξ_3), and latent endogenous variable into administrative satisfaction (η_1) and performance satisfaction (η_2). Latent exogenous variable (X) and latent endogenous variable (Y) combine theories and interview experiences to develop the 7-point Likert scale questionnaire with the survey. The operational definitions of variables are described below:

The school BOD acts as the decision-making center, where the chairman executes the academic affairs and is held responsible to the BOD. University faculty must focus on their foremost important task: providing high-quality teaching and generating high-quality scholarship (Middaugh, 2001; Trow, 1996). BOD effectiveness refers to supervisory operations of academic affairs and administration, including specified planning, investment, financial management, and requirements for effective fund implementation and teaching and research efficacy.

Meeting effectiveness refers to the execution of important school meetings while the academic affair meeting refers to the necessary meetings stipulated by University Law. The academic affairs meeting is the ultimate decision-making meeting inside the universities. With the exception of academic affairs meetings, the study discusses other important meeting including administrative meetings, budget meetings, staff consultative committee, and student recruitment meetings. The attendance rate of personnel related to the meeting, meeting efficiency, and the effectiveness of resolved projects execution are applied in the testing of meeting effectiveness. The chairperson usually serves as the key individual of important school meetings to implement school concepts. Hence if president hosting can guide the meeting resolution as well as the efficiency and effects of meeting hosting, become the variables of discussion for this study.

Administrative effectiveness refers to whether school administrators meet the requirements for administrative performance in processing general procedures of administrative affairs. The degree of individual effort invested in organizational tasks reveals work performance including: follow standard operating procedures, overcome barriers, provide mutual supports and assistance when other peers encounter problems, complete work following the instructions, to be equipped with dedicated and responsible attitudes, and emphasis and abidance with matters related to safety and health in work (Borman and Motowidlo, 1993). The evaluating index for performance includes efficiency, efficacy and quality (Browning, 1997; Elizabeth, 1996; Donna, 1996). Hence, administrative effectiveness includes individual administration, execution effects, and self-requirement in coordination with other departments. Administrative requirement refers to the supervisor's cognitive attitudes towards other administrative supervisors engaged in school administrative affairs.

Administrative satisfaction refers to satisfaction with school administrative performance, including administrative operating satisfaction and meeting effect satisfaction. The administrative operations refer to the evaluation of administrative efficiency, effectiveness and the rationalization of fund use; whereas meeting satisfaction refers to the satisfaction with various important meeting effects.

Performance satisfaction refers to schools accepting assessment results, the Ministry of Education Grant and satisfaction with student recruitment performance, including subsidy assessment and recruitment

effects. Subsidy assessment refers to the latest school assessment results and the satisfaction to this year's Ministry of Education subsidy and teaching excellence grant. The student recruitment effect refers to the satisfaction to the results of student recruitment.

The research objects of the survey consists of BOD members in private universities including the directors and BOD secretary, as well as the academic and administrative supervisor such as the chairman, vice chairman, dean of academic affairs, dean of student affairs and dean of general affairs, college deans, chief secretary, other class one supervisors, and college directors. The operational modeling for university governance mechanism and school performance are shown in Figure 2.

The sample includes a 97 schools in the 2010 academic year including 33 general private universities, 3 general private colleges, 34 private technology universities, and 27 private technical colleges. Thirteen schools were randomly sampled for pre-testing, including 6 private universities (Tunghai University, Feng Chia University, Hu Jen Catholic University, Chinese Culture University, Asian University,

Figure 2 the Operational Model for University Governance Mechanism and School Performance
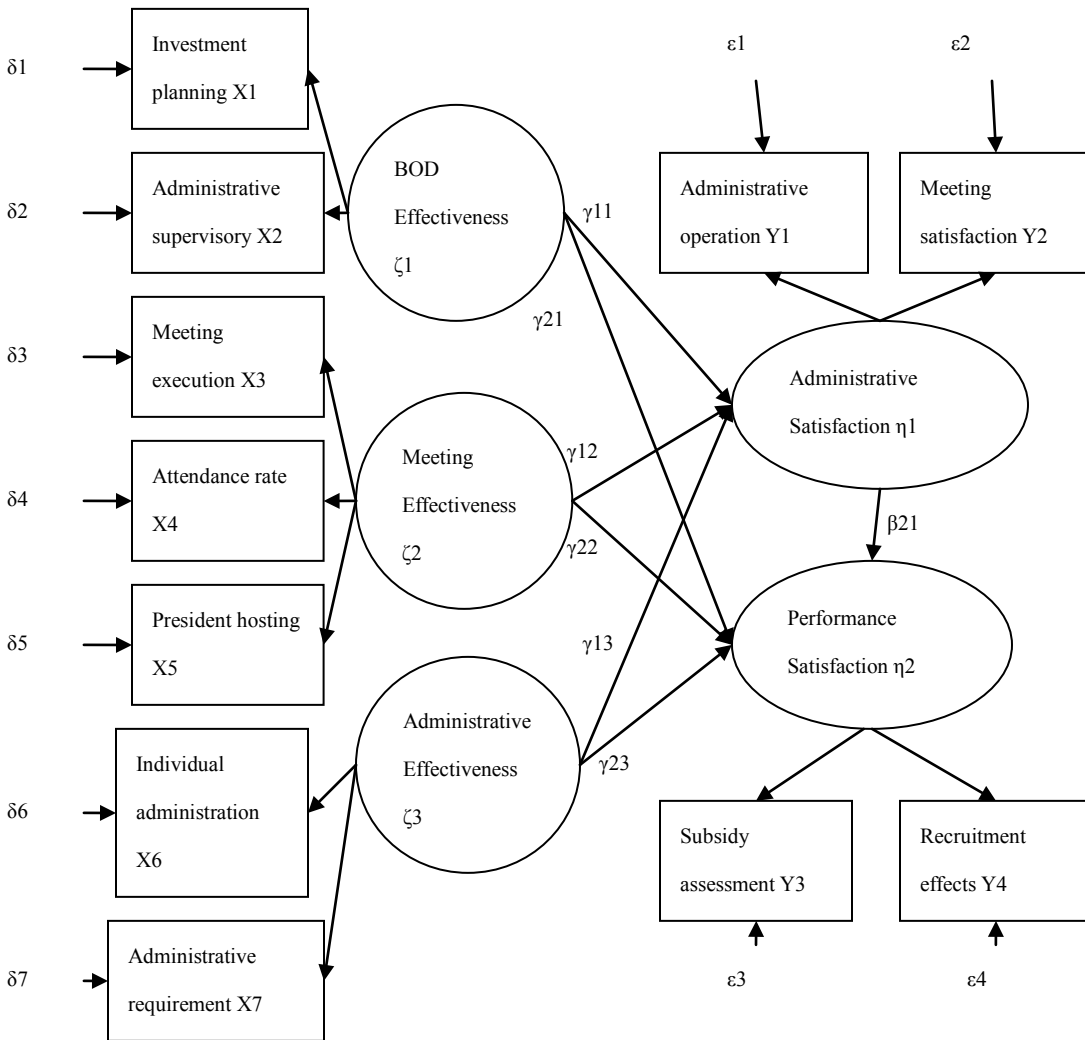
This figure shows the SEM Operational model for university governance mechanism and school performance of this paper.

Chang Jung Christian University) and seven private technology universities (Chia Nan University of Pharmacy and Science, St. John's University, China University of Technology, Chaoyang University, Southern Taiwan University, Transworld University, Overseas Chinese University). To improve the recovery rate, the survey was mailed and handed out with assistance from the staff in relevant schools. Pretest questionnaires were issued and recovered between early July and mid-August 2011. A total of 168 questionnaires were issued and 88 recovered providing an overall response rate of 50%. Fourteeen questionnaires were excluded for incomplete answers for analysis. Hence, the total of valid questionnaires for analysis was 74. The pre-test questionnaire was subject to confirmatory factor analysis. The analysis referred to the comments provided by respondents from the pre-test questionnaires and the overview of the current school supervisors participating in the BOD, to modify the questionnaire and develop formal questionnaires for further analysis and discussion.

The formal questionnaires were issued and recovered between October and December, 2011. The questionnaires were distributed to academic supervisors, administrative supervisors and BOD members of 97 private universities. Each school was limited to 25 questionnaires. If the school contains less than 25 administrative and academic units, the subjects include all supervisors of administrative and academic units. BOD members were limited to 3 questionnaires per school. The questionnaires were delivered by post service, a total of 2,644 questionnaires were issued and 662 were recovered with a recovery rate of 25%, deducting the 43 questionnaires that were incomplete for analysis and elimination of 228 questionnaires with excessively high-consistency. Hence the final sample includes 391 observations.

To ensure the representativeness and integrity of questionnaire content, instructors taking part-time administrative work offered comments for revision and the questionnaires were modified according to the results of pre-test questionnaires respondent comments, to develop formal questionnaires in compliance with content validity. The questionnaires adopted the Likert scale. To determine the reliability of the questions Cronbach's α coefficient was calculated. For this measure 0.8 reliability coefficient implies high reliability and 0.7 indicates acceptable reliability (Wortzel,1979). Table 1 shows the Cronbach's α coefficients fall between 0.777~0.916, indicating the variables are in line with internal consistency.

Table 1 Reliability Analysis of Measurement Variables

Latent variables	BOD Effectiveness $\zeta 1$		Meeting Effectiveness $\zeta 2$		
Manifest Variables	Investment planning	Administrative supervisory	Meeting execution	Attendance rate	President hosting
	X1	X2	X3	X4	X5
Cronbach's α	0.839	0.868	0.916	0.821	0.820
Latent variables	Administrative Effectiveness $\zeta 3$		Administrative Satisfaction $\eta 1$		Performance Satisfaction $\eta 2$	
Manifest Variables	Individual administration	Administrative requirement	Administrative operation	Meeting satisfaction	Subsidy assessment	Recruitment effects
	X6	X7	Y1	Y2	Y3	Y4
Cronbach's α	0.871	0.909	0.908	0.887	0.777	0.898

BOD Effectiveness: Effectiveness of BOD's supervisory on president's execution. Meeting Effectiveness: Effectiveness of execution on important meetings resolution. Administrative Effectiveness: Effectiveness of administrative affairs Administrative Satisfaction: Satisfaction on performance of administrative affairs. Performance Satisfaction: Satisfaction on external performance. Investment planning: Investment planning in the future. Administrative supervisory: BOD's supervisory on president's execution. Meeting execution: Effect and efficiency of important meetings. Attendance rate: Attendance rate of important meetings. President hosting: Effect and efficiency of President hosting on important meetings. Individual administration: Requirement of administrative performance by themselves. Administrative requirement: Requirement of administrative performance by superintendent. Administrative operation: Satisfaction on administrative operation. Meeting satisfaction: Satisfaction on meeting resolution execution. Subsidy assessment: Satisfaction on subsidy and assessment. Recruitment effects: Satisfaction on recruitment effects.

The 389 valid responses (2 missing samples) include 130 general private universities and 259 private technical and vocational colleges, which underwent fitness test with the following results, $\chi^2 = 2.16 < \chi^2_{0.05} = 3.841$, accepting sample allocation fitting population allocation. For the gender aspect, male accounts for 83.64% and female accounts for 16.36%. The service seniority, where 11-15 years account for 21.85%, followed by 16-20 years, accounting for 21.34%, 21~25 years accounting for 14.91%, within 5 years accounting for 12.08%, over 26 years accounting for 9.25%. The current positions: BOD members account for 2.85%, president and vice-president account for 8.05%, dean of academic affairs, dean of student affairs and dean of general affairs account for 12.21%, dean of college accounts for 10.38%, and department head accounts for the majority of up to 46.75%; other level supervisors' account for 16.10%, and chief secretary accounts for 3.64%.

Table 2 Test of Assumption of Normality

Latent variables	Manifest Variables	Coefficient of Skewed	Coefficient of Kurtosis	Coefficient of Skewed	Coefficient of Kurtosis
BOD Effectiveness	Investment planning	-0.955 ~ -0.838	0.219 ~ 0.659	-0.781	0.705
	Administrative supervisory	-0.755 ~ -0.507	0.346 ~ 0.745		
Meeting Effectiveness	Meeting execution	-0.816 ~ -0.500	-0.114 ~ 0.833	-0.612	0.064
	Attendance rate	-0.847 ~ -0.456	-0.423 ~ 0.436		
	President hosting	-0.925 ~ -0.571	0.067 ~ 0.944		
Administrative Effectiveness	Individual administration	-0.582 ~ -0.302	-0.209 ~ 0.633	-0.421	-0.204
	Administrative requirement	-0.342 ~ -0.280	-0.418 ~ 0.027		
Administrative Satisfaction	Administrative operation	-0.659 ~ -0.538	-0.006 ~ 0.077	-0.629	0.193
	Meeting satisfaction	-0.740 ~ -0.617	0.312 ~ 0.769		
Performance Satisfaction	Subsidy assessment	-0.580 ~ -0.106	-0.773 ~ -0.017	-0.235	-0.070
	Recruitment effects	-0.654 ~ -0.462	-0.086 ~ 0.208		

Notes: BOD Effectiveness: Effectiveness of BOD's supervisory on president's execution. Meeting Effectiveness: Effectiveness of execution on important meetings resolution. Administrative Effectiveness: Effectiveness of administrative affairs Administrative Satisfaction: Satisfaction on performance of administrative affairs. Performance Satisfaction: Satisfaction on external performance. Investment planning: Investment planning in the future. Administrative supervisory: BOD's supervisory on president's execution. Meeting execution: Effect and efficiency of important meetings. Attendance rate: Attendance rate of important meetings. President hosting: Effect and efficiency of President hosting on important meetings. Individual administration: Requirement of administrative performance by themselves. Administrative requirement: Requirement of administrative performance by superintendent. Administrative operation: Satisfaction on administrative operation. Meeting satisfaction: Satisfaction on meeting resolution execution. Subsidy assessment: Satisfaction on subsidy and assessment. Recruitment effects: Satisfaction on recruitment effects.

EMPIRICAL RESULTS

The variables in this study must meet the normality assumptions before undergoing structural equation modeling analysis. The normality test with an absolute value of skewness S coefficient of less than 3 and the absolute value of kurtosis K coefficient of less than 10 (kline, 1998) was used to carry out the testing for the various in the study. The test results are shown in Table 2. The absolute values of skewness S for the manifest variables of the study fall between 0.106 ~ 0.955, and the absolute value of kurtosis K coefficient falls between 0.944 ~ 0.017, meeting the requirements for normality assumptions.

Testing for Overall Model Fitness

SEM was applied for analysis and the optimal sample quantity for analysis, as identified with LISREL software, generally fell between 50~500. A smaller sample size will result convergence failure(Hayduk, 1989). The overall modeling Goodness of Fit Index is an extrinsic modeling quality test, whereas the approval of overall modeling fitness testing implies validity in the overall modeling. The results are shown in Table 3, where the χ^2 ratio of the overall sample of 2.884 is smaller than the standard value of 3, and the alternative indices RMSEA is 0.07 in line with the testing standard of smaller than 0.08. The Goodness of Fit Index GFI is 0.96 which is greater than the testing standard of 0.9. The Adjusted Goodness of Fit Index (AGFI) is 0.92 and greater than 0.9, indicating a good modeling fit. The Normed Fit Index (NFI) is 0.98, and the Incremental Fit Index (IFI) is 0.99, which are all greater than 0.9. indicating excellent Modeling fitness (Bentler & Bonett,1980). The Parsimony Normed Fit Index (PNFI) is 0.61 and greater than 0.05, CN is 221.3 and greater than 200; reflecting the Root Mean Square Residual (RMR) value for Fitted Residual Variances. Average Covariance Value is 0.032, SRMR value as 0.031 and smaller than 0.05, indicating an excellent modeling fitness (Bentler & Bonett, 1980; Bogozzi & Yi, 1988).

Testing for Intrinsic Model Quality

The intrinsic model quality test for the various SEM samples for this study is shown in Table 4, where the square means (SMC) indices of individual manifest variables relative to the R^2 value of manifest variables and latent variables, are mostly greater than 0.5. However, the meeting effectiveness to attendance ratio is 0.35, the administrative effectiveness to individual administration is 0.44 and performance satisfaction to auxiliary assessment is 0.45, are all smaller than 0.5; which implies that the intrinsic quality does not completely meet the standards for intrinsic modeling quality in SEM.

The reliability value (ρ) of all latent variables fall between 0.645~0.878 and are greater than 0.6, indicating that the Cronbach's α coefficient of observatory indices attributed to each latent variable contains relatively high reliability. The construct validity measurement of SEM models measures if the different manifest variables can effectively measure the "convergent validity" of the same latent variable as well as if manifest variable designed for a specific latent variable can distinguish the "discriminate validity" in the manifest variable of other latent variables. Convergent validity refers to the average variance extracted value from the latent variable observed. The higher the average variance extracted value, the higher reliability and convergent validity of the latent variable.

Fornell & Larcker(1981) proposed a standard value greater than 0.5 can represent a high explanatory power of average variance for latent variables by each manifest variable. Table 4 shows the average variance extracted value of the study samples falls between 0.712~0.889, indicating the manifest variables can measure a considerable degree of latent variables (Sharma,1996). With regard to discriminate validity, Espinoza (1999) suggested the average variance extracted value for a certain latent variable must be greater than the square of correlation coefficients for any paired latent variable in off diagonals, in order to possess discriminate validity capability. Table 5 shows the average variance extracted value for the latent variables in diagonals, which are greater than the square of correlation coefficients for any paired latent variable in off diagonals and have sufficient discriminate validity between each other.

Table 3: Test of Overall Model Fit

Fitting Index	Fitting Index and Standard	Test Indices	Model Fit Judgment	Fitting Index	Fitting Index and Standard	Test Indices	Model Fit Judgment
Absolute fit				Incremental fit			
χ^2	p>0.5	98.06(p=0.00)	No	NFI	>0.9	0.98	Yes
RMR	<0.5	0.032	Yes	RFI	>0.9	0.97	Yes
SRMR	<=0.5	0.031	Yes	IFI	>0.9	0.99	Yes
RMSEA	<0.08	0.07	Yes	NNFI	>0.9	0.98	Yes
GFI	>0.9	0.96	Yes	CFI	>0.9	0.99	Yes
AGFI	>0.9	0.92	Yes				
Parsimonious fit							
PNFI	>0.5	0.61	Yes	CN	>200	221.3	Yes
PGFI	>0.5	0.49	No	χ^2 ratio	<3	2.884	Yes

χ^2: Minimum Fit Function chi-square. RMR: Root Mean Square Residual. SRMR: Standardized RMR. RMSEA: Root Mean Square Error of Approximation. GFI: Goodness of Fit Index. AGFI: Adjusted Goodness of Fit Index. NFI: Normed Fit Index. RFI: Relative Fit Index. IFI: Incremental Fit Index. NNFI: Non-Normed Fit Index. CFI: Goodness of Fit Index. PNFI: Parsimony Normed Fit Index. CN: Critical N. PGFI: Parsimony Goodness of Fit Index. χ^2ratio: chi-square for Independence Model with 34 Degrees Freedom.

Table 4 Test of Intrinsic Model Quality

Latent variables	BOD Effectiveness ζ1		Meeting Effectiveness ζ2		
Manifest Variables	Investment Planning	Admin. Supervisory	Meeting Execution	Attendance Rate	President Hosting
	X1	X2	X3	X4	X5
SMC	0.64	0.61	0.92	0.35	0.51
Lambda Loading	0.80	0.78	0.96	0.60	0.72
CR	0.769		0.810		
AVE	0.812		0.712		

Latent variables	Administrative Effectiveness ζ3		Administrative Satisfaction η1		Performance Satisfaction η2	
Manifest Variables	Individual Admin.	Admin. Requirement	Administrative Operation	Meeting Satisfaction	Subsidy Assessment	Recruitment Effects
	X6	X7	Y1	Y2	Y2	Y4
SMC	0.44	0.63	0.71	0.86	0.45	0.5
Lambda Loading	0.66	0.80	0.84	0.92	0.67	0.71
CR	0.696		0.878		0.645	
AVE	0.762		0.889		0.739	

BOD Effectiveness: Effectiveness of BOD's supervisory on president's execution. Meeting Effectiveness: Effectiveness of execution on important meetings resolution. Administrative Effectiveness: Effectiveness of administrative affairs Administrative Satisfaction: Satisfaction on performance of administrative affairs. Performance Satisfaction: Satisfaction on external performance. Investment planning: Investment planning in the future. Administrative supervisory: BOD's supervisory on president's execution. Meeting execution: Effect and efficiency of important meetings. Attendance rate: Attendance rate of important meetings. President hosting: Effect and efficiency of President hosting on important meetings. Individual administration: Requirement of administrative performance by themselves. Administrative requirement: Requirement of administrative performance by superintendent. Administrative operation: Satisfaction on administrative operation. Meeting satisfaction: Satisfaction on meeting resolution execution. Subsidy assessment: Satisfaction on subsidy and assessment.   Recruitment effects: Satisfaction on recruitment effects. Lambda Loading: Factors Loading. CR: Reliability value. AVE: Average variance extracted value.

Testing for Path Analysis

Table 6 shows direct effects. The DOB effectiveness to administrative performance satisfaction is 0.16 with a positive significant impact. H1 is accepted. The BOD effectiveness has a direct impact on administrative performance satisfaction. The meeting effectiveness to administrative performance satisfaction is 0.84 with a positive significant impact. H2 is accepted. Meeting effectiveness has a direct impact over administrative performance satisfaction. The administrative effectiveness over administrative performance is -0.08 without a significant impact. H3 is rejected. Therefore the BOD investment and supervisor over the development of academic affairs results in a significant positive impact on the satisfaction of school administrative performance. Internal school meeting effectiveness includes the effectiveness of various meetings, attendance rates and the effectiveness of president hosting meeting also results in significant positive impact on the satisfaction of school administrative performance.

Table 5 Discriminate Validity

	BOD Effectiveness	**Meeting Effectiveness**	**Administrative Effectiveness**	**Administrative Satisfaction**	**Performance Satisfaction**
BOD Effectiveness	0.812				
Meeting Effectiveness	0.327	0.712			
Administrative Effectiveness	0.335	0.436	0.762		
Administrative Satisfaction	0.322	0.574	0.330	0.889	
Performance Satisfaction	0.215	0.226	0.207	0.327	0.739

BOD Effectiveness: Effectiveness of BOD's supervisory on president's execution. Meeting Effectiveness: Effectiveness of execution on important meetings resolution. Administrative Effectiveness: Effectiveness of administrative affairs Administrative Satisfaction: Satisfaction on performance of administrative affairs. Performance Satisfaction: Satisfaction on external performance.

Direct Effectiveness is reported in Table 6. Administrative performance satisfaction to external performance satisfaction is 0.81 with a significant positive impact. H4 is accepted. The administrative performance satisfaction has a direct impact on external performance satisfaction, which shows that satisfaction for school administrative performance enhances the effectiveness of external performance satisfaction. The BOD effectiveness to external performance is 0.18 without significant impact. H5 is rejected. The BOD effectiveness has a direct impact on external performance satisfaction. The meeting effectiveness to external performance satisfaction is -0.52 with a significant negative impact. H6 is accepted. Meeting effectiveness has a direct impact over external performance satisfaction. The administrative effectiveness to external performance is 0.37 without significant impact. Hence H7 is rejected. Administrative effectiveness has a direct impact on external performance satisfaction. The hypothesis path coefficient for the study is shown in Figure 3.

The direct effect of Table 6 includes BOD effectiveness, meeting effectiveness and administrative effectiveness, which has indirect influence on the external performance satisfaction through administrative performance satisfaction. BOD effectiveness to external performance satisfaction validity through administrative performance satisfaction is 0.13 without a significant impact. H5-1 is rejected. BOD effectiveness has a direct impact on external performance satisfaction through administrative performance satisfaction. Meeting effectiveness to external performance satisfaction through administrative performance satisfaction is 0.68 with a significant positive impact. H6-1 is accepted. Meeting effectiveness has a direct impact on external performance satisfaction through administrative performance satisfaction. Administrative effectiveness to external performance satisfaction through administrative performance satisfaction is -0.06 without significant impact. H7-1 is rejected. Administrative effectiveness has a direct impact on external performance satisfaction through

administrative performance satisfaction. The total values of effectiveness shows that BOD effectiveness and meeting effectiveness can improve the effectiveness of external performance satisfaction through administrative performance satisfaction.

Table 6: The Hypothesis Path Coefficient

Hypothesis Path	Latent Variables	Dependent Variables	Direct Effect	T	Indirect Effect	T	Total Effect	T
H1	BOD Effectiveness	Administrative Satisfaction	0.16*	2.04	NA		0.16*	2.04
H2	Meeting Effectiveness	Administrative Satisfaction	0.84***	8.67	NA		0.84***	8.67
H3	Administrative Effectiveness	Administrative Satisfaction	-0.08	-0.68	NA		-0.08	-0.68
H4	Administrative Satisfaction	Performance Satisfaction	0.81***	4.44	NA		0.81***	4.44
H5	BOD Effectiveness	Performance Satisfaction	0.18	1.35	0.13	1.84	0.31*	2.35
H6	Meeting Effectiveness	Performance Satisfaction	-0.52*	-2.31	0.68***	3.58	0.16	1.24
H7	Administrative Effectiveness	Performance Satisfaction	0.37	1.91	-0.06	-0.65	0.31	1.64

BOD Effectiveness: Effectiveness of BOD's supervisory on president's execution. Meeting Effectiveness: Effectiveness of execution on important meetings resolution. Administrative Effectiveness: Effectiveness of administrative affairs Administrative Satisfaction: Satisfaction on performance of administrative affairs. Performance Satisfaction: Satisfaction on external performance. Investment planning: Investment planning in the future. Administrative supervisory: BOD's supervisory on president's execution. Meeting execution: Effect and efficiency of important meetings. Attendance rate: Attendance rate of important meetings. President hosting: Effect and efficiency of President hosting on important meetings. Individual administration: Requirement of administrative performance by themselves. Administrative requirement: Requirement of administrative performance by superintendent. Administrative operation: Satisfaction on administrative operation. Meeting satisfaction: Satisfaction on meeting resolution execution. Subsidy assessment: Satisfaction on subsidy and assessment. Recruitment effects: Satisfaction on recruitment effects. Lambda Loading: Factors Loading. CR: Reliability value. AVE: Average variance extracted value. ***, **, and * indicate significance at the 0.001, 0.01 and 0.05 levels respectively.

Figure 3: The Research Hypothesis Path Coefficient Diagram for University Governance Mechanism Operations and School Performance
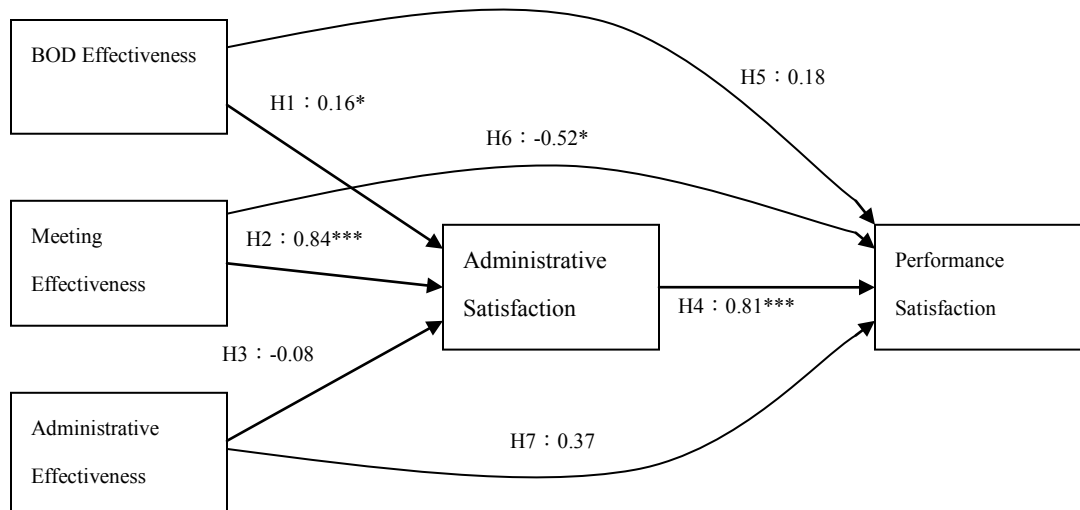
This figure shows the Research hypothesis path coefficient diagram for university governance mechanism operations and school performance. ***, **, and * indicate significance at the 0.001, 0.01 and 0.05 levels respectively.

CONCLUSION

This paper discusses the internal governance management team of universities and the cognition of school performance satisfaction. School performance requires an external evaluation mechanism in addition to measurement for the administrative management system within the school. External assessment is based on external certification or accrediting requirements. External assessment is conducted by external groups, or teams, to insure compliance with performance requirements (Su Jinni, 1997). Hence, school performance applies external evaluation mechanism measurements such as school assessment results and the MOE approved grants and the recruitment results.

The study investigates the influence of BOD effectiveness, meeting effectiveness and administrative operational effectiveness to administrative performance. Next we examine the influence of administrative performance over external performance in order to establish the research framework of university governance. The study further applies a SEM model to understand the influence of various variables for administrative performance and the external performance.

The empirical studies show that the BOD operational effectiveness and the internal important meeting attendance rate have significant positive relation with execution effectiveness and school administrative performance satisfaction. Administrative performance satisfaction of the school and school performance satisfaction have a significant positive relation. The administrative performance satisfaction of school has a significant positive relation with the school performance satisfaction. Internal important meeting attendance rate and execution effectiveness have significant negative relation with the school performance satisfaction. However, its intermediary effect through the administrative performance satisfaction of the school enhances satisfaction towards school performance with a positive effect. This indicates that cognition towards administrative performance satisfaction affects the effects of school performance satisfaction.

The results of the empirical study shows how the university governance management team of private universities enhance school performance and administrative performance satisfaction. The study provides a reference for universities, the academic field and educational competent authorities towards the university governance mechanism.
SEM is the confirmed linear structural relation based on combining factor analysis and path analysis. It can concurrently process casualty between multiple dependent variables and independent variables. SEM verifies the model of theories. This paper discusses the relevance of the university governance mechanism for school performance. Most previous studies are qualitative research (e.g., Duquette and Stowe, 1993; Campbell, 1990; Browning, 1997; Elizabeth, 1996; Donna, 1996). We note a limitation of the study is that school performance judged by questionnaire respondents may differ from actual school performance.

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