

THE EMPIRICAL STUDY OF THE ORGANIZATION EXECUTION AND PERFORMANCE

Fu-Jen Chang¹
Li-Hsing Ho²

ABSTRACT

There are four coordinates to represent the organization execution. The organization structure including company system is deemed to be the hardware coordinate of organization execution; the functional coordinate is the organization operation methods, and the decision-making as execution is the main nuclear energy of organization execution strategy.

This study divides the execution methods into functional entity in which is focus on staff's personal capability to share the responsibilities while the other deals with the total entity with concentration on flat-top equality and seniority. Furthermore, in order to reach the most efficiency of the institute performances, this study should aim on organization structure, the empirical and centralization to final the best combination.

Finally, this study concluded that the technological institute, are non-profit organizations, its output is difficult to be accessed. Compared to this, the profit-organization can be clearly represented with the quantity and quality of products. However, index of the inside performance should be considered not only with enterprise organization performance, but also contemplated the educational character. This study therefore, has been applied MANOVA (Multivariate Analysis of Variance) and Logistic Model to make an empirical research for organization execution and organization performance.

Keywords: Organizational Operation, Organizational Performance, MANOVA (Multivariate Analysis of Variance), Logistic Model

1. Prolegomenon

Institute is an educational entity, the operation and administration of which shall directly affect the educational quality. Thus, operating performance of the institute is

valued by the one who deeply concerns about the education; through the performance assessment to comprehend the effective status of educational operation and administration controlled by institute, and by means of the enhancement of educational performance to promote it quality and seek the excellence to increase the national competitiveness.

Szilagyi (1981) considered that performance is an integral conception used to manifest the ultimate outcome resulted from the activity of organizational operation while the effectiveness and efficiency may be deemed as subordinated elements of the organization. The manifestation of performance's conception is hinged on completion of the effectiveness and efficiency.

Living in an environment to be part of 3E Age, all works are stressed the three criteria; excellences, efficiencies and equities (Chin-Gee We, 1998). What the efficiency is to be emphasized, that to be valued is mainly the responsibility of performance. The operator valued the performance of organizational management is based upon the conception of administrative innovation of the Entrepreneurial government and affected by prosperity of the campaign of "New Public Management", in which the education is holding the nationals' quality and affecting the national growth in economies and societies and the pitch of national competitiveness.

The mechanism of institutes has been incurred a significant variation; the college being substantially altered as the technology institute while the technology institute changed into high-tech university. So far as the statistics is concerned, schools in the technical system comprise 14 high-tech universities, 57 technical institutes, and 15 training schools. After the school system is changed, in addition to vary their school names, in terms of the quantity of recruiting students also has occurred a considerable transition. Nowadays, under the trend of educational system being changed, the

¹ Chung-Hua University Doctor Candidate of the Graduate of Technology Management Personnel of National Taichung Nursing College

² Chung-Hua University, Dean of School of Management & Ministry of Continuing Education

educational managing performance in school is also become the focal point to the public concerned.

This study is explored the relationship between organizational performance and organizational operation at the level of behavior, taken the financial target to achieve the administrative efficiency, instructor's working satisfaction, and organizational adaptability as an index to balance the "organizational performance", and applied MANOVA and Logistic Model to make an empirical research for organization execution and organization performance.

2. References Research

1. Internal and External Index of Organizational Performance

As Chang-Quei Lee (1998) researching the standard of organizational performance discovered that scholars proposed or researched the performance standard over the years were all adopted the micro perspective, so he thinks that the main system of the performance standard seems to be concluded in the "performance standard of external environment" and "performance standard of internal environment". In fact, both environments will affect the performance manifestation of the enterprise; meanwhile, the systematic science also regards environments as an important ideal to constitute the system. All system's character representation, and the maintenance and regulation of the system in stable status, are to have relation with environments, therefore,

by systematic viewpoint to classify organizational standard into external index and internal index.

The external index is comprised of all financial performance indexes and the appearance resulted from the operating outcome of most marketing performance index. The measuring rate both of operating performance index and manpower index is very important to the external, and the operating outcome selected by adaptability index is an external demonstration of the enterprise such as various proportions and quantities.

The internal index is implicated the enterprises' various capabilities, atmospheres, attitudes, and characters, etc. for example, all performance standards included in the adaptability index are belonged to the internal index of organizational performance. Where any organization is consisted of the "element" of "Human", organizational integral adaptability constituted by the performance resulted from human potential or values shall also be formed as a "pre-cause" or "internal component" of the performance index revealed by the organization of financial index. Thus, the internal index of organizational performance is constituted by the performance index of the manpower, which control the resource in the operating performance and the index of organizational adaptability. Form 2-1 is principally the content of classification and norm for internal and external index of the organization performance.

Form 2-1: The norm for internal and external index of the organization performance.

External Index of Organizational Performance	<ol style="list-style-type: none"> 1. Index of Financial Performance: invested remuneration rate; invest remuneration growth rate, asset remuneration rate, net-value remuneration rate; weighted remuneration rate; income growth rate; profits growth rate; invested cash flow; profit rate; growth proportion; turnover net-amount, turnover net-amount growth rate; net-profit growth rate before tax; net-profit growth rate before tax; company independent fund proportion; stock turnover rate; AR (account receivable) turnover rate; and sales amount. 2. Index of Operating Performance: the product quality, design, and services; development of new products or service, production exploiting rate; inventory management; efficiency, and growth; target achievement of enterprises; incident occurring rate; achieving the target requested by parent company; relative performance to competitors; and performance of integral company.
--	--

	<p>3. Index of Manpower Performance: the employees' productivity, average profitability, average seniority, average earning amount per year, average production amount per person; rate of retaining post, circulating rate; important employee losing rate; exclusives and other chiefs' mobility rate; proportion of employees promoting to high rank official or other chiefs; manpower value, training and development.</p> <p>4. Index of Marketing Performance: the enterprise assessed by markets; company supported by the public report; stock market value; market possessing rate, growth rate, and its stability; promotion; sales level; sales growth rate; customer service; customer satisfaction; company reputation; market potential; and delivery on time.</p> <p>5. Index of Adaptability Performance: the emphasis on achievement; volumes of innovating product; quantity of the patent products obtained; marketing success of the new product; proportion of new product to sales; relationship between administrators and employees; relationship between employees.</p>
Internal Index of Organizational Performance	<p>1. Index of Operating Performance: control ability to resource; enterprise's negotiating ability to suppliers; enterprises' security.</p> <p>2. Index of Manpower Performance: participation and power authorization; manpower reputation; employee's morale; working satisfaction; recognition by related personnel; ability to attract employees; ability to maintain the employee stayed in organization.</p> <p>3. Index of Marketing Performance: company reputation, market potential</p> <p>4. Index of Adaptability Performance: environment and strategy, recognition of looking for survival, developing ability, innovating ability, technology's developing ability, integrating ability, information and communication, stability, adaptability, flexibility, mobility, environmental controlling ability, behaving motivation, resource handling ability, relaxing pressure ability, coherent ability while facing impact, reactive ability for the environmental changes, organizational goal's culture.</p>

Data Resource: By this research

The analysis of Ming-Chang Chen (1979:50) is considered that efficiency is meant to obtain the maximum output with the minimum income (or resource); effectiveness means reached the target. Both relations may be induced as follows:

1. Efficiency is not surely equal to effectiveness.

2. Effectiveness is more important than efficiencies; organization is scarcely pursuing the efficiency. Efficiency is doing things right while effectiveness is doing the right things.

3. Efficiency is no more than considering the relationship of input and output; effectiveness is considering the whole circulation from input through process to output, reflecting the relationship between the organization and the entire environment it lives with. Hence, the former thinks only the internal status while the latter is concerned about the mutual and reciprocal relation with environments, seeking its advantageous

opportunities, so it is included the external standard.

4. The contrast between efficiencies and effectiveness has the optimum exploitations to resolve the problem, seek for advantageous program, and protect the resource, besides doing thing right and doing right things.

5. So far as long-term period is concerned, effectiveness is not only acquired the profit, emphasized on inner and outer, and considered of environments, organizations and personal optimum balance by the means of economy and technology, but also by political measures.

Kast and Rosenzweig (1985:109-120) supposed that organizational performance shall be included the following three tenors; 1. Organizational Effectiveness; 2. Organizational Efficiency; 3. Participant Satisfaction. The views of Kast and Rosenzweig are comparatively more widespread that we further describe it from

three viewpoints as the target accomplishment, efficiency enhancement, and participant satisfaction.

French (1994) incorporated the "effectiveness", "efficiency", "individual", "group and organizational development", and "Participant satisfaction" into a outcome variable of integral model of the organization performance (cited Rai-Chun Chang, 1998; 434) in his book of the "Manpower Management", thus, to measure organizational performance shall cover the effectiveness, efficiency, participant satisfaction and organizational development, etc.

According to abovementioned references, many scholars advocate that organizational performance is not unique conception and the problem of organizational performance shall be understood by diverse standard. Therefore, it may generalize the four viewpoints as the effectiveness, efficiency, participant satisfaction, and organizational development. On these grounds, organizational performance of the school may be deliberated on the preceding four viewpoints to generalize as: organizational performance of the school is an actual performance and achievement of the school organization, and its connotation includes completion of the educational target, effectively exploiting education resource, working satisfaction of the teachers, and organizational adaptability.

2. Organizational Operation

The manner of organizational operation may be divided into two forms: the one is the operating mode of functional entity, and the other is the community, according to Champion (1980) and Chandler and John (1994). It may be specified as follows:

1. Operating manner of functional entity: an ideal character of functional entity organization is focus on staff's capability to share the responsibility by objective assessment, design of working environment and equipment's providing.

2. Operating manner of community: by operating mode, the organization is only pursuing internal fairness and emphasizes on flat-top equality. Thus, normal community is stressed on the seniority and the equalitarianism for each unit to share equally the resource distribution.

The mechanism itself has three elements as complexities, formalities and centralization; and scholars Champion, Mogan (1975, and Robbins (1990) are taken it to expound organizational structure. Complexity is a subdividing extent of the working assignment for measuring the disunited degree of organization. Formality is indicating an extent of whether the work in organization is being standardized to weight the utilizing grade of the procedure in written form and the operating rules in organization. Centralization is meant the level of organizational policy-decision to balance the degree of organizational authorization.

Organizational operation shall be completed through the operation of organizational ranking structure, and coordinated with the characters of organizational member, and with organizational working environment, industrial characters, and target settings. Structural dimensions of the organization designed by Daft (1998) are consisted of both the structural dimensions and the contextual dimension; in terms of structural dimension included 1. Formalization; means the number of the formal documents in organization, comprised of the delimiting behavior, operating procedure of activities, working specification, norms, and policy manuals, etc. 2. Specialization: means the extent of the division of labor applied to organizational works; with high level of specialization, employees need only to be work in a small range; on the contrary, need diverse works. 3. Standardization: means an extent of using an identical method to accomplish the similar job. 4. Hierarchy of Authority: indicates the contextual relationship and the control range in the report presented by each administrator. 5. Complexity: means the number of the activity in organization or the subordinated system; vertical complexity is the hierarchical number; horizontal complexity is the level post or section's quantity; space complexity is the number of geographic position. 6. Centralization: means the rank with authority to make a policy-decision; only high rank officials may have the right to make a policy-decision, the organization of which is the centralization. 7. Professionalism: means the extent of the employee accept the formal education or training. 8. Personal Ratio: personal deployment in departments with different functions.

In terms of contextual dimension, included: 1. Sizes: means the number of the personnel worked in organization. 2. Organizational Technology: means the nature of subordinated system of the production, including the action and technique in the transitional process from input to output. 3. Environment: constituents outside the organization such as industries, government, clients, suppliers, and financial, economic status. 4. Goals and Strategy: goals are always presented by written statement that organization want to reach as the strategy is a scheme to describe the resource distribution and environmental strategy for organization to reach the goal. Goal and strategy delimit the scope of organizational operation, the competitors of the employees, and the customer's relationship. 5. Organizational Culture: indicates the employees are shared with the important values, convictions, comprehensions, and norms.

To synthesize the preceding opinions of the scholars home and abroad, structural dimension of the performance may be summarily divided as quantifiable performance of finance and unquantifiable performance of invisible asset. Therefore, this study is measured and integrated the above the structural dimension by "goal-achieving", "administrative efficiency", "working satisfaction of teacher", and "organizing adaptability" as an index while organizational operation take five items as an index by "authorization", "organism", "administrative profession", "enterprised operation", and "mutual compromise".

3. Research Method

1. Research Design and Research Method

To combine the abovementioned theory, structural dimension in this research is selected as follows:

a. Structural dimension of the "organizational operation" is measured by relevant subjects of "authorization", "organism", "administrative profession", "enterprised operation", and "mutual compromise"

b. Structural dimension of the "organizational performance" is measured by relevant subject of "goal-achieving", "administrative efficiency", "working satisfaction of teacher", and "organizing adaptability".

2. Research Hypothesis

Hypothesis 1: The high rank official in organizational operation has an apparent diversity between high performance and low performance.

Hypothesis 1-1: The high rank official in terms of authorization has an apparent diversity between high performance and low performance.

Hypothesis 1-2: The high rank official in terms of organism has an apparent diversity between high performance and low performance.

Hypothesis 1-3: The high rank official in terms of administrative profession has an apparent diversity between high performance and low performance.

Hypothesis 1-4: The high rank official in terms of enterprise operation has an apparent diversity between high performance and low performance.

Hypothesis 1-5: The high rank official in terms of mutual compromise has an apparent diversity between high performance and low performance.

3. Definition and Measurement to Manipulation of the Research Variable

Questionnaire may be divided into two major parts, and the definition of questionnaire's manipulation is shown as List 3-1.

List 3-1 Definition of the variable manipulation in this study

Structural Dimension	Measured Variable	Measuring List
Organizational Operation	Org 1	Authorization
	Org 2	Organism Licktel five-point measuring list
	Org 3	Administrative Profession
	Org 4	Enterprise Operation
	Org 5	Mutual Compromise
Performance	perf1	Goal Achieving Licktel five-point measuring list
	perf2	Administrative Efficiency
	perf3	Working Satisfaction of Teacher
	perf4	Organizational Adaptability

Data Resources; by this research

4. Data Analyses

1. School’s basic data in this study are included sexes, ages, marriages, qualifications, and educational degree, etc. and displaying the distributive status of school’s basic data by the percentage ratio and the distribution number.

2. Sampling Method Researching scope in this study is delimited the private technical institute; through an investigation on domestic technical institute total 41 private schools. Since the number of investigated school are limited, so the investigation is taken the mailing method to proceed, targeting the high rank official in each school as the testing object that included directors of the educational administration, teaching affair, and general affair, as well as chiefs of the
- developing department and the personnel office.

3. Creditability Analyses

This study is based upon the scope of the creditability coefficient values accepted by Ton-Shiung We (1984) and Kwen-Yin Lin (1999), suggesting that the creditability factor higher than 0.9 is perfectly believable; between 0.9 and 0.7 is extremely believable; between 0.7 and 0.5 is quite believable; between 0.5 and 0.4 is slightly believable; between 0.4 and 0.3 is barely believable; and the creditability is less than 0.3 is incredible. From the result of list 3-2 we may know, when the creditability factor a is higher than 0.5, it means the questionnaire’s creditability in this study may be accepted.

List 3-2; Creditability of Measuring List

Factors	Cronbach’s a
Organizational Operation	0.5789
Organizational Performance	0.9395

Data Resources: By this research

4. Empirical Result

1. Basic Data Analyses

Individual data of the sampling unit included the variable of demographic statistics such as sexes, ages, marriages, qualifications, post, units, experiences, and policy-decisions, etc. The primary outcome is hereby specified as follows:
- a. Sexes: In valid samples, “Males” have 134 persons and “Females” 11 persons; respectively 92.4% and 7.6% in percentage, in which obviously the male is much higher than the female.

b. Ages: In valid samples, interviewed persons their age distributions between 41 and 45 are the maximum making up 26.2%;

secondly, is 46 ~ 50 at 23.4% and 51-55 at 20.7%. the level of ages listed in samples is chiefly distributed between 41 and 55 and its proportion in total is 70.3%.

c. Marriages: "Married" is the maximum making 97.1%, and unmarried is at 2.9%.

d. Educational Degree: In valid samples, "Doctors" degree is the maximum making 54.5%, and the next is the "Master" degree at 31.7% while the "Bachelor" degree is only 10.3%, from which we may know the "Doctor" shall be the principal part of the high rank official in technical institutes.

e. Qualifications: In valid samples, the administrative qualification for 10 years in service is the maximum, making up 7.6%.

2. Performance of Discrimination Analysis

1. Analyses of Hierarchical Group

Use the hierarchical analysis by Ward's method to locate the number of aggregations at the first phase. According to the List 4-1, determine the number of aggregations by the agglomerate factors resulted from each phase. Knowing from the List, the aggregation 5 changed into aggregation 4 the factor's variation is 8.6%; from aggregation 4 to 3 is 9.0%; from 3 to 2 is 9.9%, and from 2 to 1 is 11.1%. Normal research is considering the 2~5 discriminations be the most appropriate number, however, determining from the factor variation in this list, this research assumes that the best status shall be divided into two groups.

List 4-1; Grouping Number of Hierarchy Aggregation Analysis; and Analyses of Agglomerate Factors

Grouping Number	Agglomerate Factor	Factor's Variation (%)
10	1262.3	-
9	1326.5	5.1%
8	1406.5	6.0%
7	1488.3	5.8%
6	1571.8	5.6%
5	1701.8	8.3%
4	1847.5	8.6%
3	2014.3	9.0%
2	2213.4	9.9%
1	2460.0	11.1%

Data Resources: By this research

2. Non-Hierarchical Group Analysis in the Two-Phase Grouping Analysis

Distribution in individual discrimination may be known from List 4-2, for which the group 2 has 92 persons and group 1, 54 persons

List 4-2 ; Distributing List of Group Sample

Group Category	Group 1	Group 2	Total
Sampling Number	54	92	146

Data Resource: By this research

From List 4-2-1 we may know, the discriminated result shows that the mean of individual variable in group 1 is lower than that of group 2, thus, the group 1 will be named as "low-performance group" and the group 2 as "high-performance group".

List 4-2-1; Group-Divided List for Organizational Performance in Internal Level

Group	Sampling Number	Mean of Individual Variable		Group Designation
1	54	Goal Achieving	23.8519	Low-Performance Group
		Administrative Efficiency	20.4444	
		Teacher Satisfaction	18.5370	
		Organizational Adaptability	16.9630	
2	92	Goal Achieving	29.4348	High-Performance Group
		Administrative Efficiency	25.4348	
		Teacher Satisfaction	21.7500	
		Organizational Adaptability	21.4457	

Data Resource: By this research

Inspect further by MANOVA to verify both high and low groups of organizational performance at these four variables if there is any apparent diversity. The result is shown as List 4-2-2. Both high and low groups

discriminated by grouping analysis are manifested the noticeable differences on the four variables in the internal level of organizational performance.

List 4-2-2: MANOVA Inspection to Individual Variable in Both High and Low Performance Groups.

Contents Variable	Group Mean		MANOVA Inspection	
	Low Performance Group	High Performance Group	F Inspection	P Values
Goal Achieving	23.8519	29.4348	169.429	.000**
Administrative Efficiency	20.4444	25.4348	169.024	.000**
Teacher Satisfaction	18.5370	21.7500	69.227	.000**
Organizational Adaptability	16.9630	21.4457	184.852	.000**

Note: * signifies $P < 0.05$; ** means $P < 0.01$
Data Resource; By this research

4. Efficient Assessment for Group Analysis

Stabilities of the group analysis result may be processed a cross validation by the discriminating function in analysis of discrimination. This study will be divided into two groups, by means of 146 samples and 4 factor's fraction to discriminate systematically the analysis. The crossing list 4-3 for

discriminating analysis shows, the correct rate in low performance group is 98.1% while the high performance group is 93.5. The discriminating rate is 95.2% as all 146 observing values of the discriminating function are correctively inputted to the group originally belonged, showing an excellent discriminating effect; both results are very close of discriminations and divided groups.

List 4-3 Crossing List of Group Discrimination

Number Percentage	Low Performance	High Performance
Low Performance	53 (98.1%)	1 (1.9%)
High Performance	6 (6.5%)	92 (93.5%)

Samples have 95.2 % being correctively classified.

Data Resources: By this research

Moreover, the Kendall's coefficient of concordance, an analysis without denominator, is being used to evaluate the identical nature in interior group. W value is between 0 and 1; 1 represents the entirely identical natures in groups and 0 means the

totally different properties. According the List 4-4, it may find that W value in each group is near to 1; at $\alpha=0.05$ the striking standard appeared, so the result of divided group in this model has an internal concordance remarkably.

List 4-4; Concordant Inspection to Each Group

Group	Sampling Number	W Coefficient of Concordance W	X Value	Free Degree	P Value
Group 1	54	0.794	128.56	3	0.000**
Group 2	92	0.899	248.05	3	0.000**

Note: ** means $\alpha < 0.05$.

Data Resources: By this research

4. Relationship between organizational performance and organizational operation in the internal level

MANOVA takes the high and low performance group discriminated by the analysis of organizational performance group in inner level as an expounding variable, and uses the organizational operation comprised the five items of "Authorization", "Organism", "Administrative Profession", "Enterprise Operation", and "Mutual Compromise" as a reaction of variable to inspect if there is any obvious difference in terms of organizational operation for the high and low performance group in inner level.

The result shows as List 4-5; the total effects of operational operation is Wilk's $\Lambda=0.661$, and $P<0.01$ also reaches to a remarkable standard. Thus, it shows an

apparent difference in terms of organizational operation at both high and low groups in the organizational performance at inner level, also it may be seen from the result of marginal utility--- the four variables of "Authorization", "Organism", "Administrative Profession", and "Enterprise Operation" are all having an outstanding diversity. From the mean of individual variable may also be seen the variable of high performance is higher than that of low performance. As to the mutual compromise being not reached to the standard, because the organization adopts the approaches of flat-top equality and the seniority promotion, it will not affect too much to the morale of employees. Hence, the high or low group of organizational performance will not be affected by the extent of mutual compromise.

List 4-5: MANOVA Analysis of the Organizational Performance and Operation at internal Level

Expounding Variable		Operational Performance at Internal lever		Total Effect		Marginal Utility	
		Low Performance N=54	High Performance N=92	Wilk's Δ	P Value	F Value	P Value
Reaction Variable							
Operation	Authorization	9.815 (0.261)	11.087 (0.200)	0.661	0.000**	14.977	0.000**
	Organism	9.889 (0.214)	11.163 (0.164)			22.352	0.000**
	Administrative Profession	12.815 (0.227)	14.967 (0.174)			56.612	0.000**
	Enterprise Operation	10.741 (0.273)	12.207 (0.209)			18.231	0.000**
	Mutual Compromise	8.926 (0.270)	8.848 (0.207)			.053	0.819

Note: 1. The un-bracketed figures in the column of organizational performance are the mean of the reaction variables, and the bracketed figures are the standard odds.

2. * means $P < 0.05$, ** means $P < 0.01$

Data Resources: By this research

3. Analysis for Empirical Model

Variable Y in the model of Logistics is the binary or dichotomous:

0 or 1 is represented whether it is occurred or not; the study is taking 1 to represent the "High Performance", and 0 represents the "Low Performance".

Thus, the model is set up as follows:

set the "Performance of dividing group" Y and the function of independent variable X as the form 4-1:

$$Y_i = \alpha + \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_3 X_{3i} + \beta_k X_{ki} + \varepsilon_i \dots \dots \dots (4-1)$$

Form 4-2 is the Probability of "high Performance group" computed in compliance with the Logistic Model.

$$P(i) = 1 + \frac{1}{e^{-(\alpha + \beta_1 X_{1i} + \beta_2 X_{2i} + \dots + \beta_k X_{ki} + \varepsilon_i)}} \dots \dots \dots (4-2)$$

The value of Form 4-2 is between 0 and 1, but this form is difficult in calculation. So it uses $P/1-P$ to express as shown on the Form 4-3.

$$\frac{P}{1-P} = e^{(\alpha + \beta_1 X_{1i} + \beta_2 X_{2i} + \dots + \beta_k X_{ki} + \varepsilon_i)} \dots \dots \dots (4-3)$$

Taking the natural logarithm from both sides of the Form 4-3, it shall obtain the Form 4-4

$$\ln\left(\frac{P}{1-P}\right) = \ln\left(e^{\alpha + \beta_1 X_{1i} + \beta_2 X_{2i} + \dots + \beta_k X_{ki} + \varepsilon_i}\right) \dots \dots \dots (4-4)$$

From Form 4-4, it may acquire the Form 4-5

$$\ln\left(\frac{P}{1-P}\right) = \alpha + \beta_1 X_{1i} + \beta_2 X_{2i} + \dots + \beta_k X_{ki} + \varepsilon_i \dots \dots \dots (4-5)$$

In the preceding Forms

$Y_i = 0, 1$ (0 represents the "low performance group", and 1 represents the "high performance group").

X_{ki} : Represents the "I-th" sample, and the K-th independent variable

β_k : Represents the K-th parameter.

ε_i : Represents $E(\varepsilon_i) = 0$ error items of the independent random variable

List 4-6: Research's selection: Organizational Operation, Organizational Performance of independent variable

Independent Variable	
Organizational Operation	Organizational Performance
X_{28} Authorization	X_{33} Goal Achievement
X_{29} Organism	X_{34} Administrative Efficiency
X_{30} Administrative Profession	X_{35} Teacher's Working Satisfaction
X_{31} Enterprise Operation	X_{36} Organizational Adaptability
X_{32} Mutual Compromise	

Data Resources: By this research

The followings are empirical models of the organizational operation and performance.

1. Selections of Independent Variable: through the Logistics mode to select the most powerful variables as follows: the rest of variables of X_{28} Authorization, X_{29} Organism, and X_{30} Administrative Profession are

remained un-noticeable, but the coefficients are positive, demonstrating the alternative relation traveled at same direction with the occurring probability of high performance group. The Logistic model is shown as List 4-7.

2. Model's Parameter Evaluation

List 4-7: Logistics Model's Parameter Evaluation for Organizational Performance and Operation

Variables	Coefficient	Standard Error	Wald	P Value
Authorization	0.309	0.130	6.378	0.012*
Organism	0.395	0.165	5.723	0.017*
Administrative Profession	0.805	0.163	24.404	0.000*
Enterprise Operation	0.115	0.133	0.746	0.399
Mutual Compromise	-0.026	0.130	0.041	0.962
Constant	-18.083	3.271	30.556	0.000*

-2 log approximate (-2LL) = 123.852

The evaluating result from above parameters may obtained the high performance produced by organizational operation, the model shows as follows:

$$P(i) = 1 + \frac{1}{e^{-(18.03 + 0.309\chi_{28} + 0.395\chi_{29} + 0.805\chi_{30})}}$$

From the established model, it may find that the higher the throwing into authorization, organism, and administrative profession; the higher the probability to produce the high performance group.

1. Correct Rate of Model's Forecast

		Forecasting Result		
		Low Performance	High Performance	Correct Rate of Forecast
Practical Results	Low Performance	32	20	61.5
	High Performance	13	81	86.2
	Correct Rate of Integral Forecast			77.4

Errors of Form I: The high performance group practically to be classified as the low performance group, it may read from the list $13/94=13.8\%$.

Errors of Form 2: The low performance group practically to be classified as the high performance group, this part is $20/52=38.4\%$ and the model's correct rate is $=77.4\%$

5. Conclusion and Proposals

1. Conclusion

The developing tendency in 21st centuries entered a mould of liberalization and globalization, and the operation of school has been becoming increasingly in expansion and diversification. These subjects will become very important--- what kinds of the nuclear capability shall be taken as a foundation to develop the feature itself, or schools have to face the organizational operating model regulated after the college elevated its status as a technology institute.

As the features of individual school are different in each private technology institute, so the environments faced are not the same. The institute basic on the department of electric machinery needs a fast, flexible capability to reflect the variation of market, when that basic on the department of chemical engineering especially needs to value on ethics and seniority system to enhance the centripetal force of personnel. Therefore, it has to confirm first that what is the successful key-point the school needs, and secondly that actively cultivate itself the competitiveness to create a lasting and

contending advantage.

To enhance the competitiveness, the school shall coordinate with its organizational operation model in accordance with its features, flexibly responding to environmental variation and adopting an appropriate competing strategy, so that the school may keep growing to reach the educational goal.

This study is taken the 41 technology institutes as the researching object to explore the structural dimension of organizational model and organizational performance in empirical research. By what kinds of organizational operating model, under what forms of the combination, will produce the optimum organization performance, with which the research result may provided the references for the conductors of the private technical institute

2. Proposals for Successive Researchers

(1). Mailing objects of this researching questionnaire are the high rank officials (including the three directors of educations, disciplines, and general affairs, as well as the chiefs of developing department and the chief

of personnel) whom shall fill in the answers. However, from the retrieved questionnaire we found that partial high rank officials are so busy, as to pass the questionnaire to lower rank officials to fill up, hence; these interviewed persons might comparatively be incapable of understanding the school's operating status and cause some deviations. In the future, it may use the manners of increase the interviews with the high rank officials to collect the information.

(2). Researching object of this study is the high rank officials in each private technical institute, which may be expanded to cover other chiefs served in various ranks, targeting the university or two-year and four-year technical schools subordinated to the administrating institutes to proceed with a research to compare the differences.

This study is adopting the cross section as researching design, only that the

performance influenced by school's leader; organizational operation, etc. could be generated a timing drop. Consequently, many causes affected the performance may not be completed determined by unilateral research of the cross section. The successive researchers in research can take the vertical timing sequence to break through the restriction in this aspect.

Owing to this research is cover the exploration of the behavior level with a tremendous scope, to the variable's selection shall be somewhat confined whether to accept or reject, unable to consider extensively the whole factors of organizational operation in school, the limitation of which is inevitable in empirical research. Therefore, the sequential researchers are suggested to target this research result to make a further explicit exploration and development.

**Questionnaires Survey the Organizational Status
of the Private Technology Institute**

Reverend predecessors in educational field!
Please accept my best regards.

This questionnaire is a set of reference used in academic research, the purpose of which is to comprehend your vibration to your esteemed school and the perspectives on your job as a reference for the technical institute to improve its organizational operation and operating orientation.

The data you filled in are nothing concerned with what so-called the "right" or "wrong"; it just be applied to the academic research and made a comprehensive analysis without individual exploration. All data you provided should absolutely be confidential in the disposing process, hence, you may rest assured to make the answer. As your opinions are so precious, so please read literally before you answer the question in accordance with your practical observation and perspectives. If there is any inconvenience to you, please make an allowance for us.

Your support will be the maximum assistance to achieve this research, we do, sincerely thanks for your helps and cooperation.
We remain,

High-Tech Management Institute of Chung Hwa University

Postgraduate

Fu-Ren Chang

Part 1:

1. Following questions are describing your perspectives on organizational operation of your school; please follow your actual vibration and perception to make a check in the grid. Thanks.

Organizational Operation	Highly Disapproved	Disapproved	Normal	Agreed	Highly Agreed
1. In promotion, seniority is a very important considering factor in this school.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. This school is comparatively valued on flat-top equality, i.e. endeavoring to allot the resource to each unit equally.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. This school adopts the strategy of adaptability with a highly compromise.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Targeting the environmental variation, this school integrated a common consensus to respond the program within a shorter time.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Organization of this school may be adjusted in accordance with the environmental variation.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. This school nominated the directors is given weight to the expertise in compliance with his capability.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Organizational mobility of this school is very strong, and able to regulate its strategy in accordance with the environmental variation.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Directors of this school made a policy-decision may not request higher authority for approval in everything.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Each unit in this school has a high autonomy in policy-decision.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. This school authorized the chief at basic level to exercise the expedient or flexible method under a certain of specific circumstances.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Most of administrative directors in this school are graduated from the department of administration.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Professional personnel in this school have better expertise.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. It is the excellent personnel served in the administrative assisting unit of this school.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. This school adopts the enterprise operation and provides the innovative and professional knowledge and service for students.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. This school regards students as a customer in educational unit to operate.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. This school is often to achieve the target of recruiting students as a basis to pay for the salary.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. In order to reach the operating efficiency, this school spares no effort to encourage the teacher accepting more students while school begins.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2. Following questions are describing your perspectives on the performance of organizational operation of your school; please follow your actual vibration and perception to make a check in the grid. Thanks.

Organizational Performance	Highly Disapproved	Disapproved	Normal	Agreed	Highly Agreed
1. This school may reach the target of five-education balance development for students.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Educational resource of this school may reasonably be distributed.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. I feel the present joy having a sense of achievement.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. This school may enact the developing scheme for school's affairs in accordance with the developing tendency of education.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. This school may actively ascertain the goal of curriculum development based on school's standard.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Application of the manpower and material resources may be developed into the maximum effect in this school.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. I feel pleasure in teaching works.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Various software and hardware in this school may adapt to the demand of social development.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Colleagues in this school can effectively accomplish each educational reforming policy.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Various implementing program in this school may be executed and audited in time.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. I feel satisfied to the present working environment.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Teachers in this school can solve each problem by new knowledge and technique.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Each developing plan of school's affairs may be satisfactorily accomplished in this school.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Promoting each plan, this school is stressing on the process performance to enhance its added values.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. I felt the present joy might fulfill my own ambitions and ideals.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. This school may promote the action and research to enhance the capability of teacher's expertise.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Students in this school are performing excellence in daily routines and the result of schoolwork.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. This school may effectively dispose of the matters proposed by teachers and student's parent.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. I feel the teaching job having a rich creation and diversity.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. This school may promote the learning organization to respond to the transition of exterior environment.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. Students in this school are having excellent results in various competitions.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. This school may accomplish each work with the minimum funds.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23. Teaching performance of this school is obtained the affirmation from student's parent.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Part 2:

Following questions are concerning your personal information; please make a check in the grid. Thanks.

1. Your sex: Female Male
 2. Your Age:
 - ☐ 20 years in age or less ☐ 21—25 ☐ 26—30 ☐ 31—35 ☐ 36—40
 - ☐ 41—45 ☐ 45—50 ☐ 51—55 ☐ 56—60 ☐ 61 in age or more
 3. Your marriage status: ☐ unmarried ☐ married
 4. Your educational degree:
 - ☐ Middle school or under ☐ high school (vocational)
 - ☐ college ☐ university ☐ master ☐ Ph.D.
 5. You have served in this school for _____ years.
 6. Your present pos is:
 - ☐ Administrative person ☐ Chief at the basic level ☐ Chief at middle level ☐ Chief on high ranks ☐ others (please specify)
 7. You are subordinated to which units in your esteemed school
 - ☐ Principal Office ☐ Vice Principal Office ☐ Secretary Office ☐ Dean's Office
 - ☐ Discipline's Office ☐ General Administration ☐ Personnel Office ☐ Accounting Office
 - ☐ Library ☐ Registry Group ☐ Developing Center ☐ Computer Center
 - ☐ Department of Advancing Development ☐ Researching and Technical Cooperation Group
 - ☐ Others
 8. You have engaged in administrative work for _____ years, and served the present work for _____ years. The interrelated percentage is _____ % between this job and the expertise you have learnt.
 9. You have reported _____ cases of policy-decision to higher authority in this year, and the approved cases have _____ cases.
- ☐ Questionnaire shall be ended herein; please recheck if there is any omission and thanks for your cooperation!

Part 3: Please replied by the personnel directors

1. Principal of your esteemed school is produced by which ways (choose one)

- ☐ Elected by vote in campus, the number of voter _____ persons
☐ Nominated by BOD; the number of BOD _____ person

2. Teachers and staffs in your esteemed school; the male has _____ persons and the female has _____ persons.

Short-term employee under designated contract and the moonlight worker; teachers have _____ persons, and employees have _____ persons.

The average age of the total teachers and staffs is _____; personnel under the 40 years old have _____ persons

3. Organization of your esteemed school, directors at rank A have _____ persons, and directors at rank B have _____ persons.

4. Teachers and staffs of your esteemed school in the full-time job, the average seniority is _____ years; seniority more than 3 years has _____ persons; seniority less than 3 years has _____ persons

5. Resigned personnel in 2002; teachers have _____ persons; staffs have _____ persons.

6. Your esteemed school held the lecture inside and outside the campus totally are _____ in 2002; and the educational trainings totally are _____ cases.

7. Your esteemed school disposes the public document of arbitration case total _____ in 2002.

1、 中文部份

- 1.李長貴(1998)，組織行為，華泰書局出版。
- 2.吳清基(1998)，技職教育的轉型與發展/提升國家競爭力的作法，師苑教育叢書;192，師大書苑出版。
- 3.吳統雄(1984)，「電話調查的技術」，電話調查理論與方法，聯經出版公司，頁47-166。
- 4.林昆瑩(1999)，台灣地區小包裝米品牌忠誠度之研究，國立中興大學農產運銷系碩士論文，頁7。
- 5.林鈺琴(1999)，組織承諾、工作滿意與組織公民行為之研究—各種不同理論模式之比較，中山管理評論，7卷4期，頁1049。
- 6.林淑姬(1992)，薪酬公平、程序公正與組織承諾、組織公民行為關係之研究，政治大學企業管理研究所未出版碩士論文。
- 7.黃洲煌(2000)，人的人格特質、激勵認知、工作態度組織公民行為之關連性研究，台灣科技大學管理研究所企業管理學程未出版碩士論文。
- 8.張瑞村(1998)，高級工業職業學校校長領導行為、教師組織承諾與學校效能關係之研究，國立政治大學教育研究所博士論，未出版。
- 9.陳明璋(1979)，組織效能研究途及其衡量。中國行政，29，48-71。

2、 英文部份

- 1.Bass, B. M. & Avolio, B. J. (1990) Transformational Leadership Development: Manual for the Multifactor Leadership Questionnaire, Palo Alto, CA: Consulting Psychologists.
- 2.Chandler, Jennifer A. & Jehn, Karan, A. J.(1994), Assessing the Relationship Between Industry Characteristics and Organizational Culture: How Difference Can You Be ? , academy of Management Journal, 37(3), 522-533.
- 3.Champion, C. J. (1980), thoughts on a Honizontally Structured Agency, Best's Review, 91-93.
- 4.Champion, Van den & Morgan, D. (1975), The Sociology Organizations, N. Y.: McGraw-Hill
- 5.Daft, R.L. (1998). Organization Theory and Design, 6th ed. Ohio: South-Western College Publishing.
- 6.Kast, kF E. & Rosenzweig, J. E. (1985). Organization & Management: A systems and Contingency Approach, 9th ed. N. Y.: McGraw-Hill, Inc.
- 7.Robbin, S. P. (1990). Organization Theory, N. J.: Prentice-Hall.
- 8.Robbin, S. P. (1992). Organization Behavior, 6th ed., Prentice Hall In.
- 9.Szilagyi, A. D. Jr. & Wallace, Marc J. Jr. (1980). Organizational behavior and performance, Calif.: Goodyear Pub. Co.
- 10.Tang Li-Ping Tomas, Abdul hamid Sa fwat Ibr ahim (1998). Antecedents of Organizational Citizenship Behavior Revisited: Public Personnel in the United States and in the Middle East. Public Personnel Management, 27(4), pp.529-550
- 11.Weiss, D. & Dawis, R. & Lofquist, L. & England, G. (1967). Manual for the Minnesota Satisfaction Questionnaire. Minneapolis: Industrial Relations Center, University of Minnesota.