

**DEVELOPMENT OF A MODEL OF  
ORGANIZATIONAL EFFECTIVENESS  
EVALUATION FOR FACULTIES OF EDUCATION:  
AN APPLICATION OF MULTILEVEL CAUSAL  
ANALYSIS**

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**Abstract:** The objectives of the present research were (1) to develop an effective evaluation model for faculty of education of Higher Education in Thailand (2) to study causal factors at field level and department level for correlation and effect in effectiveness of faculty of education and (3) to test invariance of a multilevel causal analysis model of faculty of education effectiveness among public universities and public autonomous universities. The total of 913 samples were stratified randomly, and consisted of 33 deans and administrators, 110 heads of field, 550 faculty members and 220 supporting staff in 4 public autonomous universities and 7 public universities in Thailand. Five-point Likert scales were used for the developed instruments with Cronbach's alphas ranging from 0.780 to 0.978. Statistical analyses were made based on descriptive statistics, Pearson's product moment correlation using SPSS version 16.0 for Windows. The multi-level confirmatory factor analysis and the multilevel causal model analysis were performed using Mplus version 5.21. The model of organizational effectiveness was described by nine variables namely, (1) educational satisfaction (2) academic development (3) faculty member's satisfaction (4) professional development (5) system openness and community interaction (6) ability to acquire resources and money (7) goal attainment (8) internal process management and (9) learning and development. The research results showed that: (1) the perceptions of members in faculty of education in public autonomous universities towards the faculty of education effectiveness were quite high for all variables, except for ability to acquire resources and money which was moderate. But the perceptions of members in public universities were quite high for all variables, except for academic development which was moderate. Comparison between groups of variables showed that, the faculty member's satisfaction and goal attainment were higher than others (2) The proposed multilevel causal model of faculty of education effectiveness fits quite well with the empirical data set)  $\chi^2$

=102.610,  $df = 71$ ,  $\chi^2 / df = 1.445$ , CFI = 0.983, TLI = 0.966, RMSEA = 0.040, SRMR<sub>B</sub> = 0.016, SRMR<sub>w</sub> = 0.003).

The statistical analysis showed further that, the field-level variables, such as policy of management, and characteristics of field significantly affected the perceptions of the members' effectiveness. Whereas for the department-level variables, only policy management of the unit was significant. The predictor variables at the field and department levels accounted for variance of the faculty of education effectiveness of about 75% and 55%, respectively.

### Introduction

For higher education in Thailand, faculty of education is the organization that has an important role to produce and develop quality teachers. However state university application, out the idea that this occurred with the reform of education system in 1974, which set guidelines that institutions must be independent systems. Not part of the government until the year 1991, the government announced policies to reign in government; choice for university is two ways to remain in office but need to change regulations to streamline efficiency and effectiveness. And more public autonomous university will change is the same each university is free to manage more from the old to the University Affairs. (Commission on Higher Education) has changed the management of their own. University administrators have the power to decide the budget until the administration of academic personnel. Public autonomous university began a fact is more during the economic crisis of 1997 when the International Monetary Fund or IMF (International Monetary Fund) and Asian Development Bank or ADB (Asian Development Bank). This reason drive to the Thai government will have the education process. The reasons that explain the Thai government monetary and fiscal budget to support higher education unnecessarily On 27 January 1998 the cabinet has to approve the University of processing conditions of the loan ADB (Asian Development Bank) that made it clear that all public universities. Need to change the status. "Corporate universities in the government" or public autonomous university is within a year by 2002.

Performance indicators are that organization to achieve mission success is how well without evaluating the effectiveness of the organization then. There is no way to know at all that the mission of the organization (Cherrington, 1994). But there are several problems to measure and evaluate faculty of education's effectiveness and efficiency. Stufflebeam et al. (1971) Katz and Kahn (1978) Goodman and Pennings (1980) Harrison (1994) Price and Mueller (1986) said that problems included (1)

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variables were not cover (2) variables were abstract (3) indicators were not be sufficient (4) weight of indicator were not be suitable (5) criterions were not clear (6) analysis were not cover (7) not show causal and (8) model were not sufficient.

### Limitations of past research

First, research methodology used in developing the model, regardless of realities, organization of the relationship between the levels in descending order, especially educational organization which could not determine the influence caused by variables in the level and how much of volume. Second, problems in selecting appropriate units of analysis are not made estimate the standard error is less than the true and tested statistically significant discrepancy of type 1 (type one error) over the set.

In this research multilevel causal analysis were used in the developed model with normative approach. This approach uses principle of causal analysis and actual state of organization to define domain and to develop the model for collecting the data from stakeholder and many groups of evaluators with modern evaluation.

### Objectives

- 1) To develop an effective evaluation model for faculty of education of higher education in Thailand
- 2) To study causal factors at field level and department level for correlation and effect in effectiveness of faculty of education
- 3) To test invariance of a multilevel causal analysis model for effectiveness of faculty of education between public universities and public autonomous universities

### Conceptual Frameworks

The meaning of the effectiveness of Faculty of education is defined as a successful operation of Faculty of education in term of an awareness of organizational missions by administrator, faculty member, and support staff. The main missions include teaching, researching, academic services to community, and fostering arts and culture. Other missions are human development and exploration for quality of life and better society with true peace for educational reform and sustainable development of local community. The researchers have applied the multilevel causal analysis with normative approach for the developed model. This approach is based on concept and principles of rational analysis of actual conditions and education organization that has set the scope to develop a model study with relevant groups (stakeholder) or system-wide evaluation data from several groups (multi-group evaluators) based on modern evaluations. (Sirichai Kanjanawasee, 2550) to study variables that had application an organizational effectiveness Steers (1977) Birnbaum (1992) Simmons (1993) Judge (1994) Gibson, Ivancevich and Donnelly (2000) LaRacco (2003) and Rosser Johnsrud and Heck (2003) and use multidimension evaluation model in concept Cameron (1978, 1986) Clott (1995) Kwan and Walker (2003) Sowa, Selden and Sandfort (2004) and Malcolm Baldrige National Quality Award (MBNQA), European Foundation for Quality Management (EFQM) and Balanced Scorecard (BSC) for develop model and setting the weight score effectiveness of faculty of education in higher education, Thailand as guidelines and to develop a framework of research ideas as Figure 1.

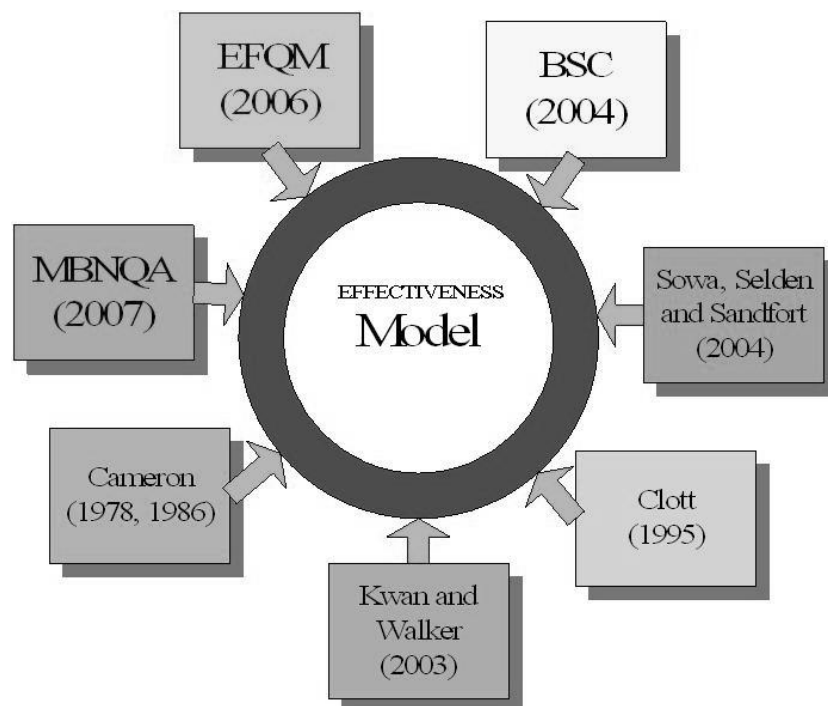


Figure 1: Conceptual Framework for Developed Model

Conceptual framework for multilevel causal analysis of faculty of education effectiveness display independent variables in field-level and department-level 9 variables, including (1) educational satisfaction (ES) (2) academic development (AD) (3) faculty member's satisfaction (FES) (4) professional development (PD) (5) system openness and community interaction (SOCI) (6) ability to acquire resources and money (ASM) (7) goal attainment (GA) (8) internal process management (IPM) and (9) learning and development (LD), which has shown in Figure 2.

evaluation model between MBNQA Excellence model The EFQM Excellence model Balanced Scorecard model Cameron model Clott model Kwan and Walker model and Sowa, Selden and Sandfort model. **Step II.** Try out for using model with empirical data and test factors multilevel causal analysis and check conform to variables in effectiveness evaluation model and to test invariance of sample in faculty of education in Thailand and conclusion.

#### Participants

The total of 913 samples were stratified randomly, and consisted of 33 deans and administrators,

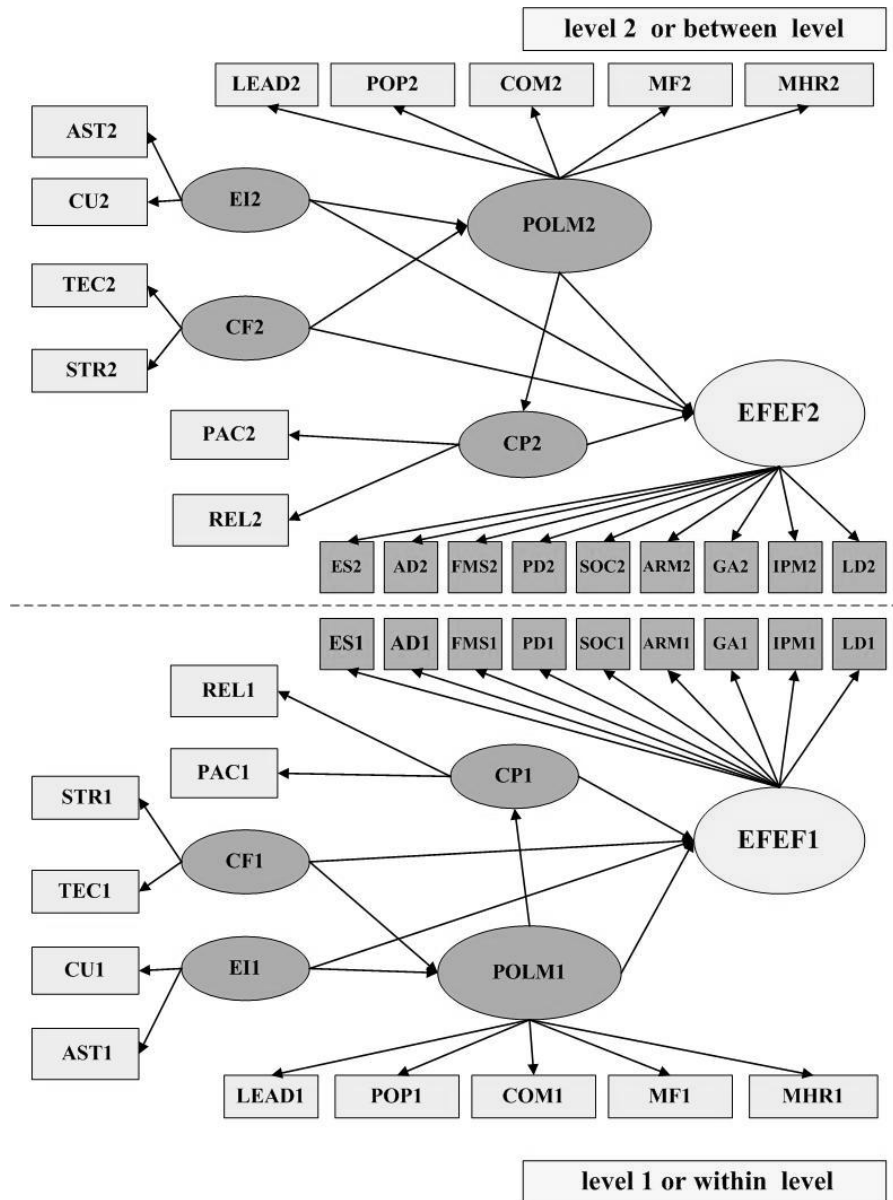


Figure 2: Conceptual Framework for Multilevel Causal Analysis

#### Methods

##### Procedure

Research and Development that use for **procedure** have two steps: **Step I.** Develop conceptual framework, develop the faculty of education effectiveness

110 heads of field, 550 faculty members and 220 supporting staff in 4 public autonomous universities and 7 public universities in Thailand.

### Instrumentation

In this study, the survey questionnaire was adopted to be research instruments and the researcher interviewed some administrator in faculty of education to improve the quality of answering questionnaire was divided into three sections, described briefly as follows:

perceptions of members in public universities were quite high for all variables, except for academic development which was moderate. Comparison between groups of variables showed that, the faculty member's satisfaction and goal attainment were higher than others, show detail in Table 1

**Table 1: Basic Statistics Characteristic Variables in Public Autonomous Universities and Public Universities**

Variables	MEAN	SD	CV%	MIN	MAX	SK	KU
<b>Public autonomous universities (N =332 )</b>							
1) educational satisfaction (ES)	3.818	0.366	2.570	2.120	5.000	0.626	3.818
2) academic development (AD)	4.039	0.387	2.330	1.000	5.000	1.498	4.039
3) faculty member's satisfaction (FMS)	4.243	0.621	2.600	1.000	5.000	0.924	4.243
4) professional development (PD)	3.767	0.609	1.880	1.000	5.000	0.182	3.767
5) system openness and community interaction (SOCI)	3.823	0.527	2.330	0.000	5.000	-0.509	3.823
6) ability to acquire resources and money (ARM)	3.133	0.730	1.600	1.000	5.000	-0.555	3.133
7) goal attainment (GA)	4.103	0.577	2.000	1.000	5.000	-0.375	4.103
8) internal process management (IPM)	3.742	0.576	2.000	1.000	5.000	-0.065	3.742
9) learning and development (LD)	3.737	0.670	2.000	1.000	5.000	-0.573	3.737
<b>Public universities (N =581)</b>							
1) educational satisfaction (ES)	3.882	0.366	2.857	1.578	4.571	-0.565	3.882
2) academic development (AD)	3.171	0.395	2.667	1.000	4.667	-0.787	4.071
3) faculty member's satisfaction (FMS)	4.372	0.449	3.600	1.000	5.000	-1.148	4.372
4) professional development (PD)	3.806	0.677	2.375	1.000	4.875	-0.047	3.806
5) system openness and community interaction (SOCI)	3.610	0.489	2.500	1.000	5.000	0.434	3.610
6) ability to acquire resources and money (ARM)	3.604	0.462	2.600	1.000	4.400	0.324	3.604
7) goal attainment (GA)	4.127	0.508	3.000	1.000	5.000	0.190	4.027
8) internal process management (IPM)	3.824	0.367	3.000	1.000	4.286	-0.734	3.824
9) learning and development (LD)	3.818	0.611	3.000	1.000	5.000	-0.815	3.818

**Note:** 1. Public autonomous universities  $SE_{SK} = 0.101$   $SE_{KU} = 0.202$

2. Public universities  $SE_{SK} = 0.134$   $SE_{KU} = 0.267$

Part 1: Demographic Information Questionnaire. This included categorized questions about the selected demographic variables: gender, education, academic position, work position, experience, number of research per year, and times of seminars. This part served as reference information in this study.

Part 2: Relationships and factors influencing the effectiveness of the disciplines the faculty of education on five-point Likert scales (total 120 items) that measured on five-point Likert scales, with Cronbach's alphas ranging from 0.780 to 0.808.

Part 3: Effectiveness of education 9 variables on five-point Likert scales (total 54 items) that measured on five-point Likert scales, with Cronbach's alphas ranging from 0.810 to 0.978.

### Statistics

Statistical analyses were using SPSS 16.0 for Windows for analysis Pearson's product moment correlation .The multilevel confirmatory factor analysis and the multilevel causal model analysis were performed using Mplus version 5.21.

### Results

The research results showed the perception of members in faculty of education in public autonomous universities towards the faculty of education effectiveness were quite high for all variables, except for ability to acquire resources and money which was moderate. But the

The proposed multilevel causal model of faculty of education effectiveness fits quite well with the empirical data set ( $\chi^2 = 102.610$  ,  $df = 71$  ,  $\chi^2 / df = 1.445$  , CFI = 0.983 , TLI = 0.966 , RMSEA = 0.040  $SRMR_b = 0.016$   $SRMR_w = 0.003$ ). The statistical analysis showed further that, the field-level variables, such as policy of management, and characteristics of field significantly affected the perceptions of the members' effectiveness. Whereas for the department-level variables, only policy management of the unit was significant. The predictor variables at the field and department levels accounted for variance of the faculty of education effectiveness of about 75% and 55%, respectively, show detail in Table2 (see in next page).

### Conclusion

This research to develop an effective evaluation model for faculty of education of Higher Education in Thailand, validation model for faculty of education of public autonomous universities were quite high for all variables, except for ability to acquire resources and money which was moderate. But the perceptions of members in public universities were quite high for all variables, except for academic development which was moderate. Comparison between groups of variables showed that, the faculty member's satisfaction and goal attainment were critical

**Table2: Weight Values of The Elements Indicator in The Multilevel Causal Model of Faculty of Education Effectiveness**

Observed variables	Field-level (within groups: W)				Department-level (between groups: B)				Intra-class Variable Correlation (ICCs)	intercepts or leverage group means
	$\beta$	SE	Z	$R^2$	$\beta$	SE	Z	$R^2$		
<b>Measurement model of faculty of education effectiveness</b>										
1) educational satisfaction (ES)	0.793	0.308	3.876	0.504	0.818	0.101	8.068		0.594	3.910
2) academic development (AD)	0.662	0.150	4.410	0.464	0.658	0.177	5.328	0.603	0.438	4.434
3) faculty member's satisfaction (FES)	0.681	0.195	1.958	0.645	0.748	0.156	4.787	0.560	0.532	4.370
4) professional development (PD)	0.637	0.360	3.491	0.688	0.611	0.295	2.053	0.597	0.459	4.057
5) system openness and community interaction (SOCI)	0.631	0.187	2.765	0.609	0.697	0.158	4.421	0.486	0.549	3.758
6) ability to acquire resources and money (ASM)	0.621	0.222	2.797	0.786	0.659	0.190	3.459	0.634	0.649	3.219
7) goal attainment (GA)	0.769	0.225	2.755	0.729	0.579	0.175	3.316	0.736	0.391	4.087
8) internal process management (IPM)	0.723	0.177	2.130	0.541	0.917	0.048	19.157	0.840	0.666	3.832
9) learning and development (LD)	0.701	0.190	2.003	0.610	0.937	0.069	13.541	0.878	0.557	3.795
<b>Measurement model of internal environment</b>										
1) Atmosphere (AST)	0.994	-	-	0.544	0.537	-	-	0.737	0.005	4.221
2) Culture (CU)	0.237	-	-	0.445	0.651	-	-	0.531	0.031	5.528
<b>Measurement model of characteristic</b>										
1)Technology (TEC)	0.737	0.000	25.889	0.989	0.771	-	-	0.795	0.008	3.662
2) Structure (STR)	0.741	0.007	31.614	0.056	0.457	-	-	0.409	0.008	3.959
<b>Measurement model of personal</b>										
1) Professional and Academics (PAC)	0.623	-	-	0.641	0.417	-	-	0.740	0.031	5.170
2) Relationship (REL)	0.421	-	-	0.510	0.737	-	-	0.778	0.010	5.274
<b>Measurement model of policy and management</b>										
1) Leadership(LEAD)	0.523	0.018	1.230	0.641	0.814	0.054	21.007	0.713	0.001	4.087
2) Policy and Planning (POP)	0.601	0.050	3.103	0.410	0.811	0.056	12.141	0.718	0.023	4.649
3) Communication (COM)	0.723	0.177	2.130	0.541	0.917	0.048	19.157	0.840	0.016	3.916
4) Management of Finance (MF)	0.701	0.190	2.003	0.610	0.937	0.069	13.541	0.878	0.012	5.329
5) Management of Human Resource (MHR)	0.601	0.150	2.803	0.520	0.717	0.109	12.541	0.678	0.002	4.197

$$\chi^2 = 102.610, df = 71, p = 0.1062 \quad \chi^2 / df = 1.445, CFI = 0.983, TLI = 0.966,$$

$$RMSEA = 0.040 \quad SRMR_B = 0.016 \quad SRMR_W = 0.003 \quad (Mplus 5.21 \text{ standardized estimates})$$

$R^2$  of causal model faculty of education effectiveness field-level = 0.751

$R^2$  of causal model faculty of education effectiveness department-level = 0.552

Average Cluster Size = 36.704 Number of Department = 51

variables (Cameron, 1978, 1986) (Clott, 1995) (Kwan and Walker, 2003) (Sowa, Selden and Sandfort, 2004) (Balanced Scorecard, 2004) (European Foundation for Quality Management, 2006) and (Malcolm Baldrige National Quality Award, 2007).

The proposed multilevel causal model of faculty of education effectiveness fits quite well with the empirical data set. The statistical analysis showed further that, the field-level variables, such as policy of management, and characteristics of field significantly affected the perceptions of the members' effectiveness. Whereas for the department-level variables, only policy management of the unit was significant. (Steer, 1977) and (Gibson, Ivancevich and Donnelly, 2000). The predictor variables at the field and department levels accounted for variance of the faculty of education effectiveness of about 75% and 55%.

## References

- Birnbaum, R. (1992). *How academic leadership works: understanding success and failure in the college presidency*. San Francisco: Jossey-Bass.
- Cameron, K. S. (1978). Measuring organizational-effectiveness in institutions of higher-education. *Administrative Science Quarterly*, 23: 604-632.
- Cameron, K. S. (1986). A study of organizational effectiveness and its predictors. *Management Science*. 32: 87-112.
- Clott, C. B. (1995). *The Effects of Environment, Strategy, Culture, and Resource Dependency on Perceptions of Organizational Effectiveness of Schools of Business*, Paper presented at the Annual Meeting of the Association for the study of Higher Education 20<sup>th</sup>, Orlando. FL, [November 2-5, 1995].
- Dror, S. (2008). The Balanced Scorecard versus quality award models as strategic frameworks. *Total Quality Management & Business Excellence*, 19(6), 583 – 593.

- European Foundation for Quality Management (2006). *The Fundamental Concepts of Excellence*. Belgium: Brussels Representative Office.
- Gibson, J.L., Ivancevich, J. M., & Donnelly, J. H. (2000). *Organizations: Behavior, Structure, Processes*. 10<sup>th</sup> ed. Boston: McGraw-Hill.
- Goodman, P. S., & Pennings, J. M. (1980). Critical Issues in Assessing Organizational Effectiveness in Lanler, E.E., and Seashore, S. E. (eds.), *Organizational Assessment Perspective on the Measurement of Organizational Behavior and the Quality of Work Life*, 185 – 215. New York: John Wiley & Son.
- Harrison, M. I. (1994). *Diagnosing Organizations Methods, Models and Process*. London: Sage Publications.
- Judge, W. Q. (1994). Correlates of Organizational Effectiveness: A Multilevel Analysis of a Multidimensional Outcome. *Journal of Business Ethics*, 13(1), 1 – 10.
- Kanjanawasee, Sirichai. (2007). *Theory Evaluation*. 5<sup>th</sup>. Bangkok: Chulalongkorn University Printing.
- Kaplan, R.S., & Norton, D.P. (2004). *Strategy Maps: Converting Intangible Assets into Tangible Outcomes*. Boston, MA: Harvard Business School Press.
- Katz, D., & Kahn, R.L. (1978). *The Social Psychology of Organizations*. 2<sup>nd</sup>Ed. New York: John Wiley & Son.
- Kwan, P., & Walker, A. (2003). Positing Organizational Effectiveness as a second-order Construct in Hong Kong Higher Education Institutions. *Research in Higher Education*, 44(6).
- LaRacco, M. A. (2003). Perception of leadership qualities in higher education: Impact of professor gender, professor leader style, situation, and participant gender. UMI ProQuest Digital Dissertations, AAT 3082978.
- Malcolm Baldrige National Quality Award (2007). *Criteria for Performance Excellence*. US: NIST, Department of Commerce.
- Muth é, L. K., & Muth é, B.O. (2005). *Mplus: The Comprehensive Modeling Program for Applied Researchers user's guide, Version 3.13*. Los Angeles, CA: Muth é & Muth é.
- Price, J. L., & Mueller, C. W. (1986). *Handbook of Organizational Measurement*. Massachusetts: Pitman Publishing.
- Rosser, V. J., Johnsrud, L. K., & Heck, R. H. (2003). Academic deans and directors: Assessing their effectiveness from individual and institutional perspectives. *The Journal of Higher Education*, 74, 1-25.
- Simmons, S. (1993). *Reflective Faculty Evaluation: Enhancing Teaching and Determining Faculty Effectiveness*. CA: Jossey-Bass Publishers.
- Sowa, J. E., Selden, S. C., & Sandfort, J. (2004). No Longer Unmeasurable? A Multidimensional Integrated Model of Nonprofit Organizational Effectiveness. *Nonprofit and Voluntary Sector Quarterly*, 33(4), 711- 728.
- Steers, R. M. (1977). *The Organizational effectiveness: a behavioral View*. Goodyear Publishing Company, Inc Santa Monica. California.
- Stufflebeam, D. L., & et. al. (1971) *Educational Evaluation and Decision Making*. Bloomington: Phi Delta Kappa.