

Florida State University Libraries

Electronic Theses, Treatises and Dissertations

The Graduate School

2004

Competing Models of Effectiveness in Research Centers and Institutes in the Florida State University System: A Data Envelopment Analysis

Deokro Lee



THE FLORIDA STATE UNIVERSITY

COLLEGE OF SOCIAL SCIENCES

COMPETING MODELS OF EFFECTIVENESS IN RESEARCH CENTERS AND

INSTITUTES IN THE FLORIDA STATE UNIVERSITY SYSTEM:

A DATA ENVELOPMENT ANALYSIS

By

DEOKRO LEE

A Dissertation submitted to the
Askew School of Public Administration and Policy
in partial fulfillment of the
requirements for the degree of
Doctor of Philosophy

Degree Awarded:
Summer Semester, 2004

Copyright © 2004
Deokro Lee
All Rights Reserved

The members of the Committee approve the dissertation of Deokro Lee defended on July 6, 2004.

Ralph S. Brower
Professor Directing Dissertation

Wonsik “Jeff” Shim
Outside Committee Member

Robert B. Bradley
Committee Member

William E. Klay
Committee Member

The Office of Graduate Studies has verified and approved the above named committee members.

ACKNOWLEDGEMENTS

This dissertation is not just my achievement. In finishing this academic work I have been indebted to many people around me.

First of all, I have to express my deep appreciation to my major professor Dr. Ralph S. Brower. From my first class of his “Administrative Behavior,” to this dissertation, all through the doctoral years, he always has led me to the right place with devotional guidance. Without his initiation about the theoretical foundation for the “the Competing Values Framework,” this dissertation would not be possible.

I am also greatly indebted to Dr. Robert B. Bradley, one of my committee members and an associate vice president of the Florida State University. As director of the Leadership Board of Applied Research and Public Service, he allowed me to participate in the effectiveness assessment process of the research centers and institutes in the Florida State University System. This opportunity provided me with the chance to access vast academic investigations and provided considerable financial relief. His support made it possible for me to continue my doctoral study itself.

Dr. William E. Klay’s academic advice from his class to this dissertation based on his profound vision about public administration and policy broadened my insight in this area. Dr. Wonsik Shim’s devotional help on Data Envelopment Analysis methodology expedited the progress of my dissertation. Their help made this dissertation possible.

In the four years in Florida State University, many people led me to see what has been going in real society. Dr. Tim Lynch, director of the Center for Economic Forecasting and Analysis, provided me many opportunities to explore public policy from tourism to high temperature superconductivity. Under his leadership I have learned about the real policymaking process in America during my doctoral study. Dr. Julie Harrington’s vivid opinions on every topic, including life, always cheered me up. Many opportunities to discuss

with Mr. Carter Doyle, my colleague at CEFA, about many research projects we've done over the last three years have been always helpful for me to see new aspects of policy.

My wife Soyoung has gone through a really hard time the last four years. As a doctoral student, a mother of a son, a wife of a student, a researcher, and an instructor in her program-instructional systems at FSU, she has been doing a really wonderful job. I always thank her. My son Jinkyu, especially his smile and flattery, has been a vital source of energy for my study. My family is the reason I study and live.

My parents and my future second son, who will be born one month from now, have also been important sources of encouragement whenever I confronted any difficulties. I want to dedicate this small academic achievement to them.

TABLE OF CONTENTS

LIST OF TABLES	viii
LIST OF FIGURES	ix
ABSTRACT	x
CHAPTER I: PROBLEM STATEMENT	1
INTRODUCTION	1
RESEARCH QUESTIONS	3
CHAPTER II: LITERATURE REVIEW	7
INTRODUCTION	7
ORGANIZATIONAL EFFECTIVENESS: THEORETICAL DISARRAY	8
Theoretical Anomaly on Organizational Effectiveness	9
Conceptual Disarray on Organizational Effectiveness	10
Rationale for Empirical Study on Organizational Effectiveness	11
THEORETICAL PERSPECTIVES ON ORGANIZATIONAL EFFECTIVENESS	12
Rational Goal Approach	13
Systems Approach: Integration of Natural System and Open Systems	16
Multiple-Constituency Approach	20
Competing Values Approach	22
REPRESENTATIVE METHODS IN USE IN ORGANIZATIONAL EFFECTIVENESS ASSESSMENT	28
Ratio Analysis	28
Regression Analysis	29
Attempt to find a Third Way	30
CONCLUSIONS	30
Theoretical Paradox on Organizational Effectiveness	30
Contribution of Empirical Study to Organizational Effectiveness Theory Building	32
CHAPTER III: METHOD	34
DATA ENVELOPMENT ANALYSIS	34

Fundamentals of DEA.....	35
Limitations of DEA.....	38
Mathematical Formulation of DEA	39
Illustrative Example of DEA	41
METHODOLOGICAL FRAMEWORK FOR DATA ANALYSIS	44
Competing Values Approach for Analytic Modeling.....	44
External Focus Effectiveness Modeling	46
Internal Focus Effectiveness Modeling	47
Effectiveness Modeling by Discipline and Age.....	48
DATA COLLECTION.....	50
Selection of Variables	51
DATA ANALYSIS	56
CHAPTER IV: RESEARCH FINDINGS.....	57
INTRODUCTION	57
ORGANIZATIONAL EFFECTIVENESS BY MODEL	58
Efficiency Score Distribution by Model	58
Comparison between Input and Output Variables by Model	59
Suggestions for Less Effective CIs to be Effective CIs	63
ORGANIZATIONAL EFFECTIVENESS COMPARISON BETWEEN MODELS	65
Overall Effectiveness Comparison between Models	65
Effectiveness Comparison by Age	69
Effectiveness Comparison by Discipline	72
DISCUSSION	76
Effectiveness in Each Model	78
Effectiveness between Models.....	79
Effectiveness by External Factors: Age and Discipline	80
CHAPTER V: CONCLUSIONS.....	82
A HYBRID APPROACH TO EVALUATE ORGANIZATIONAL EFFECTIVENESS.....	82
RESEARCH LIMITATIONS AND EXTENSIONS	86
APPENDIX A: EFFICIENCY SCORE CHANGES	89
APPENDIX B: EFFICIENCY SCORE DISTRIBUTION BY MODELS	90
APPENDIX C: EFFICIENCY SCORES BY AGE AND MODELS.....	92
APPENDIX D: EFFICIENCY SCORES BY DISCIPLINE AND MODELS.....	95

APPENDIX E: EFFICIENCY SCORES OF CIs BY MODELS.....	99
APPENDIX F: STRATEGY TO BE EFFECTIVE FOR LESS EFFECTIVE CIs BY MODELS	104
APPENDIX G: SURVEY QUESTIONNAIRE	205
REFERENCES	209
BIOGRAPHICAL SKETCH	218

LIST OF TABLES

Table 1. Approaches to Organizational Effectiveness.....	13
Table 2. Organizational Effectiveness Criteria	26
Table 3. Representative DEA models and Their Application	37
Table 4. DEA example	41
Table 5. Efficiency Scores	43
Table 6. DEA result for Center for Sociology.....	44
Table 7. NSF Research Field Classification	49
Table 8. Categorized Discipline	49
Table 9. Input and Output Variables by Models.....	53
Table 10. Summary of Descriptive Statistics of Variables.....	55
Table 11. Organizational Effectiveness by Four Models	58
Table 12. Inputs/Outputs Comparison between CIs: Rational Goal Model.....	60
Table 13. Inputs/Outputs Comparison between CIs: Open System Model	61
Table 14. Inputs/Outputs Comparison between CIs: Human Relations Model	62
Table 15. Inputs/Outputs Comparison between CIs: Internal Process Model	63
Table 16. Strategy to be an effective CI for Less Effective CI	64
Table 17. CIs Efficiency Score by Models	66
Table 18. One-Way ANOVA Results for the Four Models in the CVF	68
Table 19. Correlation Analysis between the Four Models in the CVF	69
Table 20. Descriptive CIs Efficiency Score by Age and Models.....	70
Table 21. Effective CIs Distribution by Age and Models	71
Table 22. Two-Way ANOVA Results for CIs Effectiveness by Age and Models	72
Table 23. Descriptive CIs Efficiency Score by Disciplines and Models	73
Table 24. Effective CIs Distribution by Discipline and Models	74
Table 25. Two-Way ANOVA Results for CIs Effectiveness by Discipline and Models	76

LIST OF FIGURES

Figure 1. The Competing Values Model	24
Figure 2. Comparison of DEA and Regression Analysis.....	36
Figure 3. Envelopment Surface: BCC and CCR.....	38
Figure 4. CIs Average Efficiency Scores by Models	67
Figure 5. CIs Marginal Efficiency Score Means by Age and Models	71
Figure 6. CIs Marginal Efficiency Score Means by Discipline and Models	75

ABSTRACT

This is a study about organizational effectiveness in research centers and institutes (CIs) within public higher education institutions. In particular, this study focuses on how to measure their effectiveness by integrating competing conceptions of effectiveness. This study uses a linear programming method called Data Envelopment Analysis (DEA) to examine the relative performance or organizational effectiveness of CIs based on the Competing Values Framework (CVF) as a theoretical foundation.

The CVF encompasses four representative organizational effectiveness models: rational goal model, open system model, human relations model, and internal process model. Thus, in one framework, it provides the researcher with a systematically integrated way to evaluate organizational effectiveness, and affords much latitude in dealing with various different organizational contexts. Because of its utility in drawing together a variety of theoretical approaches to organizational effectiveness, the framework provides stakeholders with a balanced perspective between different organizational values.

By employing DEA methodology, this study identified the “best practice” exhibited by organizations on the efficient frontier and makes recommendations regarding how sub-“best practice” CIs could become more efficient and perform according to “best practice” standards in each model of the CVF. The DEA methodology is innovative and unique in that it determines “best practice” CIs rather than the traditional comparison to “average” performance that characterizes the analytic approach most researchers currently use.

This dissertation confirmed that it is better for evaluators to consider four different values, rational goal, relations with environment, human relations within the organizations, and internal work process, for a balanced judgment of effectiveness of subject organizations. In addition, a new approach combining CVF and DEA is a useful measurement tool for organizational effectiveness and a potential management tool to stimulate organizational performance.

As important members of universities, CIs provide students with ample opportunities to engage their research interests. Through research activities, public service, and teaching and training by CIs, students can be trained and constituencies can be provided new knowledge-based technology and practical services. This role of the CIs is important for the future of society, and this research contributes to their effort by measuring their performance or effectiveness with a novel approach, DEA, based on the integrated theoretical foundation of organizational effectiveness, CVF.

This study finds several useful results. First, the study suggests that if one wants to evaluate organizational effectiveness, using several different models is a better approach than using the traditional goal model alone to avoid misdiagnosis of the effectiveness of the organizations. Second, managers should avoid definitive effectiveness comparisons between CIs supported by different disciplines; comparisons between CIs within the same discipline are shown to be more appropriate. Third, a new approach which integrates DEA and CVF has a potential to evaluate organizational effectiveness and to be used as an organizational management tool, but other qualitative methods should be used to get additional important information about the subject organizations.

University administrators and research fund providers such as federal, state, and local governments who are interested in the understanding and knowledge of student success in postsecondary education could use the results of this study to serve a variety of private and public interests.

CHAPTER I: PROBLEM STATEMENT

Introduction

This is a study about organizational effectiveness of research centers and institutes (CIs) within public higher education institutions. In particular, this study focuses on how to measure the effectiveness of them by integrating competing conceptions of effectiveness. This study uses a linear programming method called Data Envelopment Analysis (DEA) to examine the organizational effectiveness of CIs.

As a social institution, a university plays an important role in sustaining present society through providing a competent workforce, new technology, and various knowledge bases. These major functions implemented by a university are often divided into instruction, research, and public service, and these functions are the usual goals of the university (Gross 1968; Lord and Spero 1970; Storm and Feiock 1999). Among the general outputs of the university, research centers and institutes have taken charge of large portions of the mission conducted by the university, especially, those involving research activities. However, in light of their importance to society in general, and the higher education in particular, extant research barely focuses on research CIs, and, especially, the effectiveness of CIs.

Historically, American colleges and universities have been developed as teaching institutions, especially for undergraduate instruction (Geiger 1990; Whiston and Geiger 1992). Therefore, compared to academic departments, research centers and institutes are a very recent organizational form in universities. The research centers and institutes mainly evolved from the agricultural experiment stations in the Land-Grant colleges, university museums, and observatories (Geiger 1990; Whiston and Geiger 1992). However, since World War II, for programmatic purposes, huge amounts of government and foundation funds funneled into the universities, and this atmosphere created fertile soil for the proliferation of research centers

and institutes in universities (Geiger 1990; Whiston and Geiger 1992). They are significant units that attract research funds from various sources such as federal, state, local, private, and non-for-profit organizations.

According to Gross's research about goals of universities (1968), research goals such as pure research and applied research ranked 7th and 12th out of 47 important goals of universities, respectively. The 6th ranked goal, training students in the methods of scholarship and scientific research, is closely related to the research activity of universities. Because of the importance of research as an activity, few major universities lack research centers and institutes to achieve their important goals and to satisfy demands for research activities (Teich 1982).

State universities are different from most private colleges. They typically put a great emphasis on research and public service (Gross 1968). At the same time, because they were chartered by the states to serve local public needs, their finances have mainly come from state governments. The point is that the creation and management of research centers and institutes of the state universities have been significantly influenced by the state budget situation as well as other institutions of the state universities (Teich 1982).

With the increase of the cost of higher education in recent years, state governments on behalf of tax payers have increasingly moved to measure the performance of research centers and institutes of the state universities. As state supported institutions, every institution under the Florida State University System has been under increasing pressure to assess their effectiveness in accomplishing goals. The major forces behind the assessment movement in higher education are the legislative and executive branches of state government as well as the general taxpayers (Moreno and Tadepalli 2002). Since 1994, Florida has been implemented a major budget reform to improve the state's performance accountability. This performance-based program budgeting (PB²) takes place to remedy increasing public discontent with government outcomes and services (Office of Program Policy Analysis and Government Accountability 1997). The considerable interest in performance is also due in large part to the influence of the Government Performance and Results Act of 1993 (GPRA, Public Law 103-62). The GPRA requires that all federal agencies begin tracking and reporting program

performance.

As a part of the state movement towards performance and accountability, the Office of Program Policy Analysis and Government Accountability (OPPAGA 2001) recommended to the Florida Board of Education and the Chancellor of Colleges and Universities to develop performance measure of research CIs within the state university system. Since 2003, according to the recommendation of OPPAGA, the Council for Education Policy, Research and Improvement (CEPRI 2003) has conducted a 3-year cycle performance review and made recommendations to the Legislature regarding the activities of research centers and institutes supported with state funds in coordination with the Leadership Board for Applied Research and Public Service. However, this performance review has focused on the return on the state's investment in research conducted by public postsecondary education institutions.

This study suggests a different but more comprehensive way to assess the performance of research CIs. It suggests performance best be measured in terms of organizational effectiveness. The main difficulty of effectiveness study on research CIs is that, compared to the needs of effectiveness assessment, it is not easy to know exactly how well the research centers perform. This challenge mainly comes from the diversity of research and ambiguities of effects of research activities. The CIs tend to be unique among themselves and relative to other organizational forms within the university system. For example, research CIs possess a broad and unique scope of studies from linguistics to superconductivity. This challenge is also closely related to the evaluation of organizational effectiveness. Because they are so unique, effectiveness per se is extremely difficult to define and measure in research centers and institutes. In addition, it is not obvious which standards and criteria can be used assess effectiveness indicators. There is no consensus about reliable and valid methods to evaluate the organizational effectiveness of the research centers and institutes in college and universities (Cameron 1985).

Research Questions

Hannan and Freeman (1977) have suggested that evaluations of the effectiveness of a single organization are meaningful, but comparisons across organizations are not. For

example, if we try to compare the organizational effectiveness of hospitals and police stations in terms of organizational level, it is like comparing apples and oranges. Therefore, it seems plausible not to compare different types of organizations with specific criteria.

However, there are practical reasons and pressures from practitioners to compare the effectiveness of organizations placed in the same field. For instance, if we try to compare different units of high schools in terms of their organizational effectiveness with specific criteria, it would be helpful for them and other stakeholders such as parents, students, teachers, and public agencies who have certain interests in them. In contrast to Hannan and Freeman (1977), Yuchtman and Seashore have asserted (1967) that organizational effectiveness must be assessed in relative terms, that is, by comparing organizations with one another.

As mentioned above, the institutions affiliated with public colleges and universities are supported financially from different levels of government such as federal and state with tax payers' money. For state governments, especially, it is important to understand whether the colleges and universities are effective or ineffective in their jurisdictions. The stakeholders have two basic reasons to know their comparative effectiveness. First, they want to find ways to stimulate those organizations to enhance their effectiveness. Second, due to the scarcity of financial resources to allocate among them, they want plausible guidance to allot their funds to colleges and universities in their jurisdictions. At the same time, other stakeholders around the universities and colleges want to assess effectiveness for a variety of reasons.

This study uses Competing Values Framework (CVF)¹ as the theoretical foundation. CVF nicely integrates currently representative theories on organizational effectiveness into one framework. Therefore, CVF provides one succinct theoretical structure to evaluate an organizational setting from various perspectives at the same time. This distinctive characteristic would satisfy all stakeholders who have different interests on effectiveness of the organization compared to the other theories which focus on one facet of effectiveness such as goals, human relations, or internal process. However, CVF has a practical limitation in

¹ The Competing Values Framework will be addressed precisely in Chapter 2.

that this approach has been used almost exclusively to assess organizational effectiveness based on stakeholders' perceptions rather than using analytical tools with hard data. This study addresses the void.

The research questions of this study basically stem from the preceding considerations. First, this study is going to use an analytic method that permits an assessment of the effectiveness of research centers and institutes based on hard data rather than perceptions. In particular, this study focuses on the comparative assessment of the organizations. Second, this study wants to figure out, among various theoretical approaches to effectiveness, which approach is most suitable for various organizational settings. For example, some research centers are more output driven than other institutes, while other research centers are more human focused than others, and vice versa. By employing the Competing Values Framework, this study will show how effectiveness may be defined and determined quite differently in different settings.

Various stakeholders such as taxpayers, parents, administrators, and congressmen, who have different interests, should care about the results of this study. Taxpayers and parents pay attention to the effectiveness and accountability issue of public universities in that these institutions spend their money. Because state universities and research CIs within state universities spend funds entrusted to them for appropriate education, research, and public service, taxpayers and parents want to see whether their funds are spent to accomplish their desired goals. For this purpose, effectiveness is an important indicator. In addition, the effectiveness assessment could be helpful to the administrators who manage public universities. The information from effectiveness assessment provides the university administrators with managerial guidance that could be used to encourage research CIs' performance improvement. In addition, since administrators have to allocate public funds through managerial decisions, a comparative effectiveness assessment that differentiates their performance could be useful to advise their decisions.

From these points of views, this study has the potential to make significant contributions on two fronts, the academic and practical. One of the potential academic contributions of this study is that it combines a more sophisticated configuration of

organizational effectiveness, CVF, with Data Envelopment Analysis (DEA), a relatively recent operations management tool. DEA permits the researcher to identify the “efficient frontier” for a pre-selected set of output variables, the units on the efficient frontier, and the comparative influence of particular input variables in terms of achieving the efficient frontier. Another potential contribution to the academic field is that this study uses actual data rather than perceptions on effectiveness. Since CVF has been introduced in the field of organizational effectiveness, most scholars use perceptions on effectiveness as an indicator, and studies that use hard data about actual performance are relatively rare.

In terms of practical contributions, this study makes it possible to suggest to those organizations not on the efficient frontier how to adjust in various inputs in order to achieve results closer to the efficient frontier. It is clear that the Florida State University System increasingly is being called upon to demonstrate accountability and effectiveness in its various operations, and centers and institutes are no exception. Thus managers and directors of centers and institutes in the university system get information about how to achieve the best possible performance out of their available resources. Another possible practical contribution is that this study broadens practitioners’ view on effectiveness. Currently most stakeholders concentrate on achieving rational goals such as efficiency or performance. However, effectiveness is more than the attainment of rational goals. Adding the elements of human relations and process in the organization, and relations between the organization and constituencies into the traditional goal perspective, this study encourages practitioners to see effectiveness from a broader and more diverse stance.

There are currently few existing empirical studies about research organizations in universities, and it is, therefore, not easy for this research to find empirical examples directly related to this subject. In light of the fact that accumulation of many empirical studies for a certain research area could contribute to theory building in that field, this study is one empirical trial in the field of organizational effectiveness studies. This research hopes its contribution will fill the lacuna of organizational effectiveness studies in both practical and academic realms.

CHAPTER II: LITERATURE REVIEW

Introduction

Research organizations take several forms. We offer four examples: many large corporations have research and development departments; governments often have research and analysis organizations for analyzing management problems and public policies; various stand alone organizations conduct research on topics ranging from safety and consumer quality to health and public policy issues; and, various division and offices within colleges and universities have a primary focus on research.

Among these research organizations, we find some characteristics similar to those in all organizations and others that are unique to research organizations. This study focuses on a subdivision of research organizations: research centers and institutes in colleges and universities. In considering the literature that relates to this study, therefore, it is important to consider theoretical and empirical background literature regarding all organizations in general, and, because university research centers and institutes are in some ways unique organizational forms, we must also consider how this uniqueness complicates the application of organizational effectiveness theories and research to the organizations studied in this dissertation research.

Unfortunately, researchers and scholars in organizational studies have not paid much attention to the organizational aspects of university research centers and institutes (Wise and Agranoff 1991). Therefore, it is hard to find useful research on how organizational structure, processes, or other organizational contexts influence the effectiveness of research centers and institutes in the universities.

Compared to the members of other organizations, researchers tend to prefer challenging work, that is, ideas that are unknown or unprecedented in nature. Moreover, they

take the opportunity to do such challenging work for granted. Thus, as compared to other types of organizations, research and development organizations involve many activities that are not routine, but unique and potentially innovative (Argyris 1968). It can be argued that these research organizations seem to be -- and should be -- more flexible and organic in nature than other organizations in terms of both organizational structure and processes. However, it is important to examine more specifically and empirically the effectiveness of research institutions in various organizational settings for the development of the organizational effectiveness theory.

Organizational Effectiveness: Theoretical Disarray

According to Hall (1999) we study organizations primarily to understand their effectiveness. More specifically, emphasizing the importance of organizational effectiveness, he asserts that “in essence, the outcome of structural arrangements, processes such as decision making and leadership, and dealing with the environment are designed to contribute to organizational effectiveness” (p.249). Even though there is a variety of perspectives toward organizations in the field of organizational studies, virtually all perspectives acknowledge the importance of organizational effectiveness.

In spite of the intellectual and practical importance of organizational effectiveness in organizations studies, there is still much confusion and ambiguity on the subject. For example, it could be argued that an organizational structure is effective to the extent that the organization accomplishes the core activities with outputs that are greater than the costs. Also, in terms of internal processes, the organization is effective to the extent that the members are operating in harmony in the information flow, decision-making procedures, and problem solving practices (Argyris 1968). Both structure and process are important for organizational effectiveness. Therefore, any examination of the effectiveness of an organization must be simultaneously attentive to structure, process, internal versus external focus, and various contexts in order to achieve theoretical and practical generalization.

In addition, as Campbell (1977) argued, diverse value judgments about the nature, the goals, and the processes of organizations lead to theoretical complexity in the field of

organizational effectiveness studies. And Cameron (1986) concluded, due to the inherent paradoxical nature of organizational effectiveness, it follows that the only consensus is that there is no consensus about the concept of organizational effectiveness. The theoretical inadequacies and methodological deficiencies arise in that systematic research accumulation on this subject is lacking (Hannan and Freeman 1977). Fortunately, because organizational effectiveness is fundamental and essential to the study of organizations, a great deal of and varied research has continuously been conducted on organizational effectiveness.

Theoretical Anomaly on Organizational Effectiveness

During the historical development of organization studies, representative organizational theory approaches such as the rational goal perspective, the natural systems perspective, and the open systems perspective² have been dominant in the field of organizational effectiveness as well (Gouldner 1959; Goodman and Pennings 1980; Scott 1998). The evolution of organizational effectiveness theories, however, offers a variety of modifications of these three basic perspectives. Fundamentally, the development of theories of organizational effectiveness has paralleled the development of theories of organizational studies, and has weaved in and out of the theoretical frameworks with more specific deployments. Unlike the development of the theories in organizational studies, however, the field of organizational effectiveness studies has retained a prominent tension among existing theories. Therefore, all the theories on organizational effectiveness are still competing rigorously with each other, and this results in the fundamental theoretical disarray in organizational effectiveness studies.

Some might refer to this as a state of Kuhnian anomaly (Kuhn 1970). Theoretical disarray on organizational effectiveness derives mainly from the tension among prominent theories in the field of organizational effectiveness, because each of them pays attention to different characteristics of organizational effectiveness.

² The expressions “open system” and “open systems” have been used interchangeably in the writings of Quinn and Rohrbaugh and in other authors who write about them. This dissertation uses both expressions in an effort to be consistent with the various authors whose works are represented here.

For the rational goal approach, an organization is a means to achieve its goal. Therefore, the rational goal approach focuses on how much the organization achieves its organizational goal. On the other hand, the natural system perspective defines an organization as the ends of organization itself, and focuses on maximization of inputs from the environment for organizational survival. The natural system perspective encompasses the open system perspective by recognizing the relationship with the environment to acquire organizational inputs.

In fact, all of the theories related to organizations and organizational effectiveness have been changed within the continuum of time and space, even though scholars from many different fields of discipline have been trying to establish a grand theory for organizational studies.

Conceptual Disarray on Organizational Effectiveness

Related to this theoretical confusion, there is conceptual disarray and ambiguity as to the definition and criteria of organizational effectiveness, and almost all research for this construct acknowledges that little agreement exists regarding what organizational effectiveness means and how properly to assess it (Cameron and Whetten 1983a).

Diversity of definitions of organizational effectiveness. Performance, efficiency, productivity, excellence, and effectiveness itself are frequently used connotations for organizational effectiveness in the literature. However, Price (1972) asserts that the concepts in a frame of reference should be mutually exclusive. For example, effectiveness should not refer to the same phenomenon as efficiency. These difficulties have been attributed to attempts to define the concept of effectiveness (Georgopoulos and Tannenbaum 1957), and little headway has been achieved so far in overcoming them.

Several scholars have tried to differentiate the definition of effectiveness from other connotations. Cameron (1985), for example, defines quality and excellence, respectively. For Cameron, quality is the absence of errors, and excellence is described as extraordinary performance that far exceeds a standard. Quinn and Rohrbaugh (1981) have defined productivity as the number of units produced for a given time. However, it seems that these

attempts by scholars to define effectiveness have subsumed many related concepts rather than simplifying and clarifying a single meaning for effectiveness.

Complexity of organizational effectiveness criteria. The elusiveness of definitions of organizational effectiveness has led to several dozen different indices for criteria of effectiveness (Campbell 1977; Steers 1984). Campbell (1977) has suggested, for example, that effectiveness comprises many different criteria simultaneously, such as quality, turnover, growth, and the like.

Effectiveness and efficiency, for example, come together in organizational effectiveness in the work of some scholars but not others, and even those who bring them together do not always do so (Barnard 1938; Lyden 1975; Steers 1984; Ostroff and Schmitt 1993). As mentioned, the concept of effectiveness of a certain organization is determined by the degree to which it realizes its goals, so effectiveness might be well defined when organizational goals and outcome are well defined (Hannan and Freeman 1977). On the other hand, efficiency is measured by the amount of resources used to produce a unit of output, and refers to the technical ability of an organization to minimize the costs of transforming specified inputs into acceptable outputs (Etzioni 1964; Katz and Kahn 1978). Therefore, even though a certain organization achieves its purpose completely, if it uses too many resources in terms of efficiency, it could hardly be justified as effective. Conversely, even though this organization was operating very efficiently, if it could not attain its goal, one could hardly say it is effective. Thus, it is difficult to solve this problem neatly.

Rationale for Empirical Study on Organizational Effectiveness

Since definitions of effectiveness and specific criteria for effectiveness of an organization cannot be justified as universal (Cameron 1986), it is important to produce research that illustrates the rich variety of definitions and criteria, and the complexity of the effectiveness phenomenon. This is an important reason for empirical studies of organizational effectiveness.

Among several important empirical studies about organizational effectiveness, Mahoney and Weitzel (1969) showed that the factors that constitute organizational

effectiveness vary according to the nature of the organization. They did regression analysis for different sizes and types of organizations, and found that there is substantial variance in organizational effectiveness across organizations such as research units and production units. Regarding the difficulty of inducing a universal measure of organizational effectiveness, Campbell (1977) has asserted that “searching for so-called objective measures of organizational effectiveness is a thankless task and virtually preordained to fail in the end” (p.45). His assertion sheds light on the ongoing field of empirical studies about organizational effectiveness.

Theoretical Perspectives on Organizational Effectiveness

Theories enable those who are interested in specific social and natural phenomena to specify which elements are relevant to their questions and to make specific assumptions that are necessary for them to understand and explain the phenomena (Ostrom 1999). Even though a theory is understood to be tentatively held, subject to empirical falsification (Georgiou 1973), as Campbell (1977) suggested, without any theories, it seems not possible to determine whether an organization is more effective than another.

The theoretical evolution of organizational effectiveness, in a sense, parallels the evolution of organization theory (Whetten and Cameron 1994). Lewin and Minton’s (1986) historical approach to the theory of organizational effectiveness shows that the evolution of organization theory is similar to that of organizational effectiveness. As a prominent interdisciplinary study in which such various academic disciplines as sociology, psychology, political science, economics, and others inter-relate, the evolution of organization studies has focused on organizational effectiveness (Hall 1999). This contention is supported in that all of the sub-disciplines in organization studies such as organization development, organization behavior, and organizational learning concentrate on how to enhance organizational effectiveness. Table 1 summarizes representative approaches in organizational effectiveness studies.

Table 1. Approaches to Organizational Effectiveness

Model	Effectiveness Defined	Effectiveness Criteria
Rational Goal Model	The extent to which goals are accomplished	Productivity, Efficiency
Systems Model	Natural Human Relations	Employee satisfaction
	Internal Process	Morale, Cohesion
	Open System Resource	Smooth internal functioning
	Acquisition of resources from environments	Stability, Control
		Resource acquisition, Flexibility
Multiple Constituency Model	Satisfaction of all strategic constituencies	Constituencies Satisfaction
Competing Values Model	Integration of above definitions effectiveness	Change in above criteria over time and space

Source: Cunningham (1977), Goodman and Pennings (1980), Quinn and Rohrbaugh (1981), Cameron (1986), and Lewin and Minton (1986).

Rational Goal Approach

Even though it has been given various labels, one of the popular ways to study organizational effectiveness is the rational goal approach, based on Weberian thought (Gouldner 1959; Price 1972; Cunningham 1977; Goodman and Pennings 1980; Scott 1998). Even though there is no unanimous consensus about definitions of organizational effectiveness (Steers 1975; Campbell 1977; Scott 1977; Quinn and Rohrbaugh 1981), in terms of rational goal perspective, organizational effectiveness can be said to refer to the extent to which a certain organization achieves its organizational goal or purpose. From this perspective, organizational effectiveness necessarily relates to how we describe the goal or purpose of the organizations. Yet, in light of the diversity of organizational goals and purposes, organizational effectiveness might be assumed to pursue a multiple and changing direction rather than being unitary and constant according to the situations in which certain organizations are located.

Assumptions. The rational goal perspective assumes the organization is a means to accomplish its goals, and it defines organizational effectiveness as goal attainment or the

degree to which an organization is attaining its goal (Gouldner 1959; Price 1972; Molnar and Rogers 1976; Campbell 1977; Goodman and Pennings 1980; Scott 1998). Therefore, organizational goals are sources of legitimation, standards to assess its success, and criteria with which to evaluate organizational effectiveness (Thompson and McEwen 1958; Mohr 1973; Lyden 1975; Hannan and Freeman 1977).

Because organizational effectiveness is judged by the degree of the goal attainment in the rational goal approach, defining what the goal of the organization is a critical issue to evaluate effectiveness of the organization. Therefore, the goal attainment approach focused on the definition of goals to be sought and the evaluation of achievement of the goals (Lyden 1975; Cunningham 1977).

Existing research. The traditional way to study organizational effectiveness has been the rational goal approach. In light of the importance of the definition of effectiveness, many early research studies were interested in how to define the goals. Gross (1968; 1969) divides organizational goals into output goals and support goals. For Gross, output goals are some product or service that will affect society outside of the organization, and support goals are to achieve the conditions that are necessary to maintain the organization per se.³ Mohr (1973) elaborates the goal concepts based on the intent and outcome of the organizations. He divides goals as a transitive goal or functional goal which is externally oriented, and a reflexive goal or institutional goal which is internally oriented.⁴ According to Selznick

³ Gross (1969) asserts that, “an organization must do more than give attention to goal attainment in order to attain its goals” (p.282). For these support goals, organizations have to be concerned with adaptation, integration, and pattern-maintenance. This classification of the organizational goals by Gross mainly stems from the Parsonian structural-functional analysis: adaptation goals reflect the need to secure needed resources from the environment; management goals refer to the need to deal with internal conflicts; motivation goals seek to ensure organizational members’ satisfaction to secure their loyalty to the organization; positional goals maintain an organization’s position in comparison to other organizations. Finally, Gross (1969) argues that output goals are the most obvious organizational goals, but at the same time, he points out the important of support goals as well.

⁴ For Mohr, a transitive goal is an intended impact of the organization on its environment. For example, if an organization provides goods or services to outside of the organization, then the final goods and services are the

(1943) and Perrow (1961), organizational goals could be categorized as official goals or professed goals that are contained in formal statements of aims and actual or operative goals.⁵ Interestingly, Simon's research (1964) asserts organizational goals as constraints that define roles at all levels of the organization.

Another body of goal driven research examines the relation between goals and other organizational factors such as structures and process. Research by Georgopoulos and Tannenbaum (1957) and Udy (1962) analyzed the relation between organizational goals and intergroup relations, job assignment, and hierarchy in the organization.

Limitations. The first and most critical limitation of the rational goal approach comes from the fact that its validity depends on the way the organizational goals are defined (Scott 1964; Price 1972; Lyden 1975). Defining organizational goals is a difficult and complicated process. This difficulty stems in a sense from the fact that organizational goals are regarded as multiple and changing (Selznick 1943; Thompson and McEwen 1958; Simon 1964; Gross 1969; Mohr 1973; Kirchhoff 1977). Etzioni (1960; 1964), for example, defines an organizational goal as a desired state of affairs which the organization attempts to realize; therefore, if it is realized, then, it becomes a part of the organization and it ceases to be a goal. This fact aggravates the difficulty of defining organizational goals.

In addition, organizational goals are necessarily classified in many different ways

transitive goals of the organization. Additionally, Mohr identifies the reflexive goal as inducements to evoke contributions from all members of the organization to survive. Finally, Mohr asserts that the transitive and reflexive goals are considered as being coequal, that is, both as a subgoal of each other.

⁵ Official goals used to be expressed through the public statements and other authoritative pronouncements by key executives (Thompson and McEwen 1958). However, it seems unrealistic and vague to use them as the single standard to evaluate organizational effectiveness (Perrow 1961; Scott 1964). Compared to official goals, operative goals are actually pursued by the organization regardless what the official goals want to achieve. Operative or unofficial goals which are embedded in major operating decisions are most relevant to understanding organizational behavior (Selznick 1943; Perrow 1961; Simon 1964), and are more directly tied to the interests of every echelon of the organization (Hannan and Freeman 1977). In a sense, these operative goals represent the specific content of professed goals, but these can subvert or substitute for the official goals at various times.

based on the organization's internal and external circumstances, and the stances of its stakeholders, including members at different hierarchical levels and dominant coalitions (Parsons 1959; Thompson 1967; Gross 1969). Therefore, it seems that identifying goals of any specific organization is an empirical matter (Gross 1969) rather than generalization for theory building. This is, in part, due to the fact that a value judgment must be made for determination of the goals of an organization (Campbell 1977).

Another limitation of the rational goal approach is that, in terms of other perspectives such as the natural system approach, the rational model is a partial model in that it does not encompass all other functions of the organization as a social system (Etzioni 1960).

Thirdly, along with the definitional problem of organizational goals, many organization scholars identify the organizational goals from their own vantage points. This aggravates the difficulty and complexity of the rational goal approach to organizational effectiveness studies. This is mainly attributed to the fact that every organization has multiple views of its own *raison d'être*.

For these reasons, there are not many studies about the goals of organizations compared to other organizational topics (Perrow 1961; Gross 1969). All these different classifications and difficulties make the researcher nervous to adopt the rational goal approach as one the best theoretical model for their organizational effectiveness studies.

Systems Approach: Integration of Natural System and Open Systems

As another representative approach to organizational effectiveness, the systems approach assumes that if an organization is larger than some specific size, it is not easy to single out and meet succinct organizational goals. So an organization's viability or survival itself is assumed as the overall goal of the organization. Therefore, organizational effectiveness can be assessed by checking internal consistency, ability to exploit resources from the environment, and the like (Campbell 1977). Thus, from this perspective, organizational effectiveness mainly depends on the match between organizational characteristics and environmental conditions (Whetten and Cameron 1994).

Therefore, compared to the rational goal approach, for the systems approach, the

realization of the goals of the system is one of several important needs to which the organization is oriented. For this perspective, organizations become their own ends (Gouldner 1959). Scott (1977) adds the open systems model to Gouldner's (1959) natural system model of the organizational effectiveness. Scott's open systems perspective is similar to the system resource theory by Seashore and Yuchtman (1967) that emphasizes resource acquisition from the environment. Therefore, the systems theory can be seen to consist of the natural system theory including human relations theory and internal process theory, and open system theory including resource system theory (Gouldner 1959; Yuchtman and Seashore 1967; Scott 1977; Goodman and Pennings 1980; Quinn and Rohrbaugh 1981; Quinn and Rohrbaugh 1983; Rainey 1991).

Assumptions. The systems model regards organizations as social collectivities consisting of various participants who pursue multiple interests rather than a means to pursue specific goals (Scott 1998). Therefore, the basic theoretical assumptions of this approach to organizations begin with the inputs, outputs, and functions of the organization as a system rather than merely the goals of its creators (Katz and Kahn 1978).

In addition, the system approach assumes the organization as a living organism that interacts with its environment to acquire resources. As an open system, therefore, an organization imports some forms of inputs from the environment, and through a transformation process produces some valuable outputs back to the environment (Katz and Kahn, 1978). For this process, there are not rigid boundaries between organizations and their environments. The most important matter for organizations as open systems is the ability to maintain successful transactions with the environment in order to survive. This broadens the research scope of the natural system approach that Gouldner (1959) advanced through encompassing open system ideas⁶ that pay attention to the relationship between organizations

⁶ The open system perspective lets the focus of the effectiveness of the organization move from inside the organization to the relations between the organization and the environment which surrounds the organization. In the wake of the open systems idea in physics and biology of Ludwig von Bertalanffy (1950) that "living system are open system, maintaining themselves in exchange of material with environment, and in continuous building up and breaking down of their components" (p.23), organization scholars started to consider organizations as

and their environments.

As a proponent of the system resource approach, Yutchman and Seashore (1967) define the effectiveness of an organization in terms of its ability to exploit its environment in acquisition of resources. From their perspective, organizational effectiveness could be constructed in terms of organization and environment relationships rather than goals or purposes which are attributed by the organization itself. In summary, these assumptions of the systems approach make this approach broaden its boundary to subsume several theories such as the internal process model, human relations model, and open systems model, which focuses on process and relations in and out of organizations.

Existing research. As a representative model in the systems theory, the system resource model grew out of dissatisfaction with the goal approach to organizational effectiveness (Zammuto 1984). Compared to the goal approach, the system resource approach regards the organization as an open system (Molnar and Rogers 1976). As noted above, Yuchtmann and Seashore's (1967) research examines organizational effectiveness as the organization's ability to exploit its environment by acquiring scarce and valued resources. Price's (1972) research argued the more resources an organization gets from its environment, the more effective the organization is.

The systems perspective assumes the task of an organization is to survive, and put more focus on the maintenance of functions and processes in the organization (Goodman and Pennings 1980). Processes in an organization mostly mean interpersonal and inter-group behaviors and interactions that take place within the organization (Nightingale and Toulouse 1977). For this reason, the internal process approach⁷ assumes for an organization to be

open systems interacting with their environments. Among organization scholars, Katz and Kahn (1978) provided the most systematic introduction of open system theory into organization studies. For the open system perspective, how well an organization acquires resources from the environment for its survival is a critical point to evaluate its organizational effectiveness.

⁷ There is a controversy on how to classify internal process perspective. Whetton and Cameron (1994) classify this internal process model with goal model into ideal types, which supports Weberian idea focused on the output and efficiency. Rainey (1991), however, categorizes this approach into same boundary with human resource model, yet he recognized these two approaches do not involve complete conceptions of organizational

effective that it is important to facilitate the interactions among the components of the organization in terms of process (Nadler and Tushman 1980). Therefore, organizational effectiveness is a function of such various organizational components as the tasks, individuals, organizational arrangements, and informal organization.

From the internal process perspective, Bennis (1966) argued that as an organic system, the effectiveness of an organization is not to be inferred from static measure such as output, but should be measured on the basis of the processes through which the organization approaches problems. Pointing out the complexity of human organization in which a large number of sub-systems of other systems are located, Felsenthal (1980) suggested a new way to evaluate the interaction among these elements for the effectiveness of the organization as a whole in terms of redundancy of the elements and sub-systems through assessing intelligence agencies.

The human relations approach put individual motives and goals as the most important issues in the organizational studies. In the early stage of developing the natural system approach, Likert (1961; 1967) suggested that the degree to which subordinates participated in making the organizational decision is the systematic variable of the organizational effectiveness assessment. This variable has been expanded to include communication, motivation, morale, and so forth (Campbell 1977).

Organizations have their goals, but these are not necessarily identical with the individual purposes of group members (Katz and Kahn 1978). Cartwright and Zander (1968) differentiate the goal of the individual in a group, the goal of an individual for a group, and the goal of a group. This approach suggests that individual member's motivations, and hierarchical and horizontal interpersonal relations take into account the organizational success (Katz and Khan 1978). At the same time, this approach mainly emphasizes stimulating individual performance in the service of organizational goals. That is, the effectiveness of organizational process comes from maximizing the motivation of organization members (Katz and Kahn 1978; Scott 1998).

effectiveness.

Thompson (1967) has added to this stream by suggesting the idea that the goals of the organization, or the organizational goal, is the goal for the organization held by those in the dominant coalition. Due to this discrepancy of goals among individual members, intergroup, and the organization itself, it is essential, from this point of view, to reduce the conflicts in the organization to achieve the organizational purpose and well being of the members as well.

To achieve proper human relationships within an organization, it is critical that the organization provides a series of integrative education opportunities. According to Millard (1962), these ends could be achieved through forums, workshops, and other similar educative programs. For this reason, organizational development (OD), which mostly focuses on the human factors derived from behavioral works such as sensitivity training, managerial grid, and the like, could be categorized into this human relation approach.

Limitations. In the systems approach, and, especially, in the system resource approach, general measures of effectiveness have been recognized as an essential element to advance theory building. However, measures of effectiveness are hard to be generalized. For example, in Seashore and Yuchtman's research (1967), nineteen out of the twenty three measures are limited on their own research setting, insurance company, rather than available to any other organizational settings.

In the natural system perspective, the most important goal of an organization is to survive. This tends to overlook the fact that organizations exist for some reason. The internal process model is concerned with improving organizational process, the system resource model is interested in acquisition of resources from environment, and human relations model focuses on how to enhance the morale and relationships among members. A critical assessment of these purposes suggests that these models focus on the means rather than ends of organizations. Therefore, the rationale of the natural system approach, survival of the organization, seems to be a serious limitation of this approach.

Multiple-Constituency Approach

The multiple-constituency theory has been proposed as an alternative to the goal and system-resource theories for the studies of organizational effectiveness (Whetten 1978;

Connolly, Conlon et al. 1980; Zammuto 1982; Zammuto 1984; Tsui 1990). While there are several different perspectives within the multiple-constituency model such as the relativist view (Connolly et al, 1980), the social justice view (Keeley 1978), the power view (Pfeffer and Salancik 1978), and the evolutionary view (Zammuto 1982; Zammuto 1984), the overall multiple-constituency view regards organizations as systems that generate different assessments of effectiveness from different constituencies (Goodman and Pennings 1977b; Connolly, Conlon et al. 1980; Tsui 1990).

Assumptions. The assumption of an organization in this perspective seems different from the traditional goal perspective. For this perspective, an organization is a system of interrelated behaviors of people who are performing a task that has been differentiated into several distinct subsystems, each subsystem performing a portion of the task, and the efforts of each is integrated to achieve effective performance of the system (Lawrence and Lorsch 1967; Hickson, Hinings et al. 1971). This definition provides its theoretical base for further arguments.

These approaches suggest that organizations could be effective when the interests of the participants', whether they participate directly or not, in the organizations are satisfied (Keeley 1984). However, what makes some constituencies satisfied could make others unsatisfied at the same time. Thus, multiple-constituency models derive criteria for the organizational effectiveness from the preferences of multiple constituencies (Zammuto 1984).

Existing research. As a representative approach in the multiple-constituency theory, Connolly et al. (1980) contend that there is no one single statement about organizational effectiveness, and the judgment of various constituencies impinges on the assessment of organizational effectiveness. Therefore, each constituency's preferences for effectiveness are based on its exchange with the organization (Zammuto 1984).

The power perspective postulates that the effective organization is the one that satisfies the demands of the most powerful constituency (Thompson 1967). Hannan and Freeman's (1977) argument that dominant coalitions often develop the goal of preserving their position of power at the expense of the organization is a good identification of this perspective. Relatedly, Pfeffer and Salancik (1978) suggest a framework to identify which one is the most

influential constituency among multiple constituencies and how to rank them in order.

Another approach in the multiple-constituency theory, the social justice approach, is focused on minimization of regret of the constituencies (Keeley 1978). Zammuto's (1982) evolutionary perspective of effectiveness argues that the organizational effectiveness depends on the ability of the organization to satisfy changing preferences of its constituencies over time. This perspective is similar to the idea of Quinn and Cameron (1983) that organizational effectiveness changes according to the organization's life cycle.

Limitations. In an organization study, constituency refers to a group of individuals holding similar preferences of interests pertaining to the activities of a focal organizational unit (Tsui 1990). Using constituencies rather than participants, the scholars who advocate this theory emphasize the possibilities that any parties which are not directly related to the target organization may evaluate or influence the organization (Connolly et al 1980). This view confuses researchers and stakeholders as to which constituencies deserve emphasis in terms of assessing organizational effectiveness.

In addition, the basic tenet of this model is that an organization is effective when it satisfies one or more constituencies of the organization (Tsui 1990). From this perspective, therefore, an overall assessment of organizational effectiveness is not possible and desirable because it does not admit any assumptions that one constituency's assessment is more critical than others' and vice versa (Zammuto 1984). Furthermore, as Salancik (1984) pointed out, it is hard to measure the preferences of different constituencies at the same time.

Competing Values Approach

The competing values model of organizational effectiveness was introduced by Quinn and Rohrbaugh (1981) based on the recognition that organizations goals are simultaneously pulled in opposite directions by the expectations of multiple constituencies. This approach consists of four different organizational models, the rational goal model, the open systems model, the internal process model, and the human relations model. As a matter of fact, this competing values approach seems to be an integrated model of the rational goal approach and the natural system approach as elaborated above.

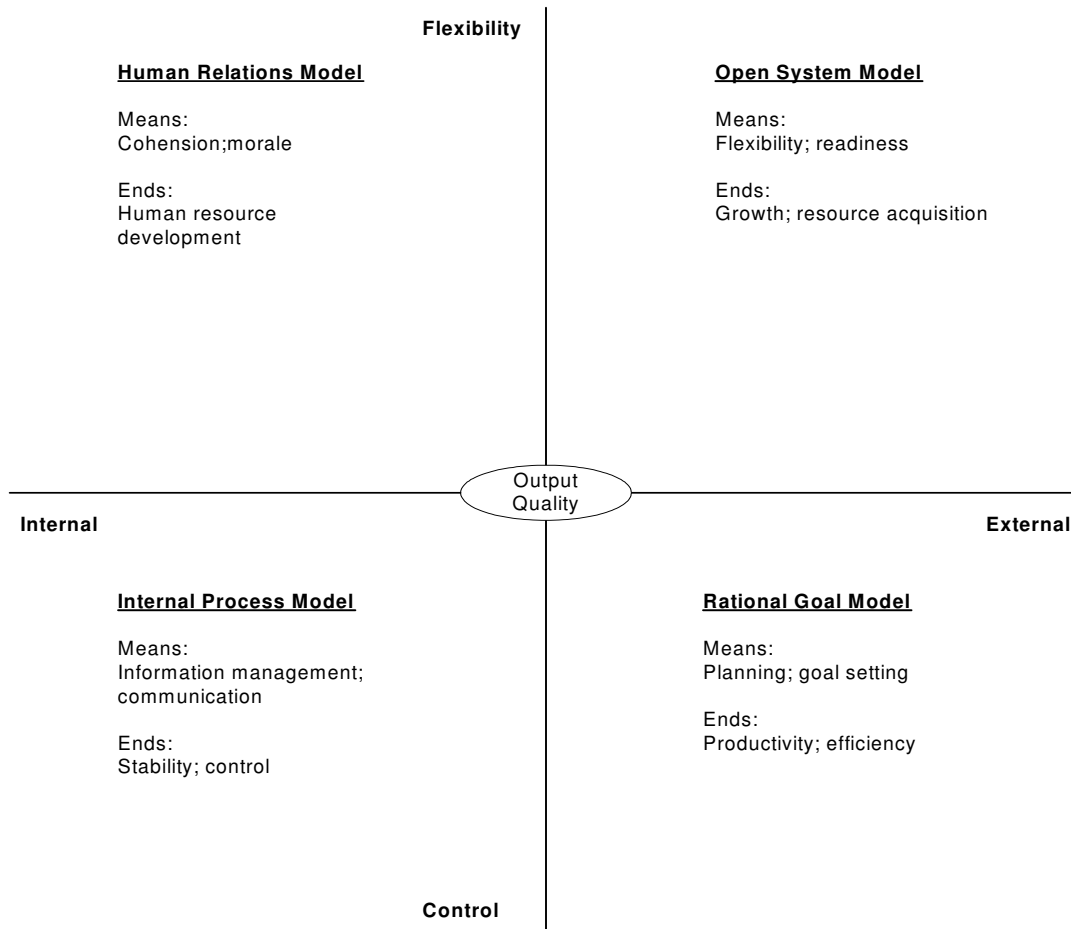
Therefore, this approach provides the researcher, with a systematically integrated way to evaluate organizational effectiveness, and affords much latitude in dealing with various different organizational contexts. In addition to its utility in drawing together a variety of theoretical approaches to organizational effectiveness, one of its greatest strengths is that the framework was derived empirically from the participation of a group of expert scholars conversant with the literature on organizational effectiveness (Quinn and Rohrbaugh 1981; Rohrbaugh 1981)

Assumptions. According to Hall (1999), contradictions about organizational effectiveness necessarily occur in any organizations because of several reasons: First, organizations face multiple and conflicting environmental constraints; Secondly, organizations have multiple and conflicting goals; Thirdly, organizations face multiple and conflicting internal and external constituencies; Fourth, organizations have multiple and conflicting time frames. Therefore, organizational effectiveness should be considered from several different points of view at the same time.

The competing values approach is based on three dimensions. The first dimension is related to organizational focus, from an internal to an external emphasis. The second dimension is organizational structure from stability to flexibility. The third dimension captures the distinction between means and ends, or processes and outcomes (see Figure 1). These three dimensional spaces lead to four models of effectiveness and eight arenas for scholarly and practical attention. The human relations model emphasizes flexibility and internal focus, the open system model underscores flexibility and external focus, the rational goal model stresses control and external focus, and the internal process model highlights control and internal focus (Whetten and Cameron 1994).

For the matter of means and ends, a value judgment is needed to decide which variables are means and which variables are ends (Campbell 1977). Yet, all four models are composed of means and ends for their own objectives, and “means” are the way to achieve the “ends” of the model. As Simon (1945) pointed out, means-end relations are seldom integrated and connected chains for both organizations and individuals. However, we can identify the relationship from Parsons’s definition (1937) that an end is a future state of affairs

toward which the process of actions, or means, are oriented. Thus, for purposes of specification, organizational effectiveness can be defined as the degree to which “ends” are achieved by the “means” of each model (Campbell 1977). Accordingly, “ends” are the ultimate focus of interest in each model rather than “means.”



Source: Quinn and Rohbaugh (1981, p.136).

Figure 1. The Competing Values Model

Interestingly, each model shares at least one core dimension and value with its neighbor. For example, the rational goal model and the internal process model emphasize control in organizational structure, and the open system model and the rational goal model

stress organization itself rather than people in terms of organizational focus. Figure 1 shows the basic framework of the competing values model.

The critical point is that although certain pairs of concepts are at opposite locations in value space and paradoxical in nature, this does not necessarily mean that they are empirical opposites and mutually exclusive in actual organizational environments. As a matter of fact, an organization might be cohesive and productive or stable and flexible at the same time (Whetten and Cameron 1994). This framework provides a more comprehensive and balanced set of indicators than other frameworks currently in existence.

Existing research. Since 1981 when Quinn and Rohrbaugh presented the competing values approach to organizational effectiveness, researches based on this approach has been increasing. In their first published research of the competing values approach, Quinn and Rohrbaugh (1981), based on Campbell and others' 30 effectiveness criteria (Campbell, Bownas et al. 1974; Campbell 1977), selected 17 criteria and, using multi-dimensional scaling, classified these by four implicit theoretical frameworks about organizational effectiveness. Table 2 reports the effectiveness criteria for Campbell and those of Quinn and Rohrbaugh.

In one of the earliest studies based on the competing values approach, Rohrbaugh (1981) assessed organizational performance of thirty employment service offices. Through questionnaires, interviews, and secondary records, he demonstrated that there is no absolute answer about how well organizations perform. Rohrbaugh concluded that since there are numerous attributes of organizational effectiveness, the competing values approach is an appropriate way to clarify the organizational emphases on effectiveness among productivity, stability, resource acquisition, and human resource development.

Quinn and Cameron (1983) proposed that although all four models are important generally, for any given organization, one of the model is likely to be more important than the others. Through observations, interviews, and archival techniques, they examined how the effectiveness models of a developmental center in the New York State Department of Mental Hygiene changed for the 1974-1976 periods. This research found that organizational effectiveness models and criteria change across organizational life cycles. Therefore, this research strengthens the competing values model's idea that organizational effectiveness could

be different across a time and space continuum.

Table 2. Organizational Effectiveness Criteria

Proponents	Model	Criteria	
Campbell		1.Overall effectiveness 2.Productivity 3.Efficiency 4.Profit 5.Quality 6.Accidents 7.Growth 8.Absenteeism 9.Turnover 10.Job Satisfaction 11.Motivation 12.Morale 13.Control 14.Conflict/Cohesion 15.Flexibility/Adaptation 16.Planning and Goal setting 17.Goal Consensus 19.Role and Norm Congruence 20. Managerial Interpersonal Skills 21.Managerial Task Skills 22.Information Management and Communication 23.Readiness 24.Utilization of Environment 25.Evaluations by External Entities 26.Stability 27.Value of Human Resources 28.Pariticipation and Shared Influence 29.Training and Development Emphasis 30.Achievement Emphasis	
		1. Value of Human Resources 2.Training and Development Emphasis 3.Conflict/Cohesion 4.Morale	
	Human Relation		
	Quinn & Rohrbaugh	Internal Process	1.Stability 2.Control 3.Information Management and Communication
		Open System	1.Utilization of Environment 2.Growth 3.Evaluations by External Entities 4.Flexibility/Adaptation 5.Readiness
		Rational Goal	1.Productivity 2.Efficiency 3. Planning and Goal setting

Source: Campbell (1974) and Quinn and Rohrbaugh (1981).

Note. For Quinn and Rohrbaugh model, Quality criterion locates on center of the four models, and Profit can locate in Rational Goal Model, but is eliminated for Public and Non-For- Profit Organizations.

In addition, Buenger et al. (1996) found the competing values at work in organizations and that value sets differ from organization to organization in their organizational effectiveness study of the United States Air Force Commands. Their results showed that the operating units of the Air Force Commands pursued the four values defined by the competing

values approach, but emphasized one of them more than others according to units' situations.

Limitations. This approach integrated all the possible organizational effectiveness theoretical models into one framework. Therefore, the competing values approach is also referred to as the contradiction model (Hall 1999), and the paradox model (Cameron 1986; Whetten and Cameron 1994).

Whetten and Cameron (1994) assert that the competing values approach recognized the inherently paradoxical nature of organizational life: "Administrators must not only make trade offs between day-to-day competing demands on the organization's resources, but also they must balance competing expectations regarding the identity of the organization as an institution. From this point of view, effective organizations are both short and long term focused, flexible and rigid, centralized and decentralized, goal and resource control oriented, concerned about the needs of members and the demands of customers" (p.141).

One of the most problematic issues in organizational effectiveness is that evaluators of effectiveness often select convenient models arbitrarily (Cameron 1986). When the framework is applied so that the organization's participants judge the relative strengths of the four models, it becomes more difficult for evaluators to misuse the model. This is also a fundamental strength and liability of the competing values model. Since this approach includes four models in one framework to evaluate organizational effectiveness, it could be arbitrarily used to evaluators' convenience. For example, if the evaluator put some weight on one model more than others, the result of the effectiveness could be distorted by the evaluator's preference. Despite the integrative qualities of the competing values framework, it is susceptible to misuse by those who use it.

Another issue is related to practical evaluation based on the competing values approach. Measurement consists of the process of assigning numbers to effectiveness factors to represent them quantitatively. Due to coexistence of different perspectives, operationalizing effectiveness factors of all four models can sometimes be difficult (Molnar and Rogers 1976; Gaertner and Ramnarayan 1983). For example, measuring human relation factors such as job satisfaction and productivity factors such as units of product at the same time seem to be difficult and could result in considerable error in measurement. In addition to criticisms

noted by others, this review notes two additional areas for potential measurement error. First, there is a potential problem of discriminant validity in identifying measures that permit respondents to distinguish mentally between those aspects of their organizations that pertain to the four distinct models in the framework. Second, most of the research to date has employed perceptual judgment rather than measures of actual performance.

Representative Methods in Use in Organizational Effectiveness Assessment

In times of fiscal constraint, it follows that more emphasis is placed on organizational effectiveness. In particular, the Government Performance and Results Act (GPRA), the National Performance Review (NPR), the service efforts and accomplishments reporting of the Government Accounting Standards Board (GASB), and state and community benchmarking efforts are major forces in making performance measurement and organizational effectiveness hot issues in every level of government (Nyhan and Martin 1999). Therefore, along with the theoretical perspectives as to what to assess in terms of organizational effectiveness, how to assess the effectiveness of organizations is another important issue in organizational studies. In particular, comparing the performance or effectiveness of homogeneous organizations or service providers within the same units of government is critical issue of organizational effectiveness. As noted in the review earlier, a substantial literature that illustrates a variety of theoretical perspectives about organizational effectiveness exists. Actual research that assesses organizational effectiveness, on the other hand, is much less extensive. Furthermore, research about effectiveness assessment has mostly focused on the difficulties and complications in doing research (Steers 1975; Kanter and Brinkerhoff 1981). As a result, research methods for organizational effectiveness studies remain under-developed.

Historically, ratio analysis and regression analysis have been representatively employed in making organizational effectiveness or efficiency comparisons (Tankersley and Tankersley 1996; Craycraft 1999; Nyhan and Martin 1999; Shim 1999).

Ratio Analysis

Ratio analysis basically examines the relationship between a single input variable and a

single output variable. Ratios could provide important information for various organizations to compare their performance. A ratio such as cost per full-time equivalent (FTE) can be employed to compare an organization to others, for example, schools, hospitals, and the like. A number of institutions including GASB, International City/County Management Association (ICMA), and the Federation of Tax Administrators (FTA) recommend some types of ratios, for example, cost per outcome, and outcomes per FTE as representative ratio variables (Nyhan and Martin 1999; Morley, Bryant et al. 2001). Since ratio analysis is the most common method for evaluating various types of performance, efficiency, and effectiveness based on input and output, this analysis has been used in numerous studies in both the academic and practical fields (Bozeman and Melkers 1993).

There is a practical constraint with ratio analysis, however. Specifically, it is hard to see only one input/output ratio in practical effectiveness comparison. Therefore, if there are multiple ratio variables, they need to be assigned weights, which require subjective judgments by analysts. These weights may raise accuracy questions.

Regression Analysis

Regression analysis has been used to examine the average relationship between multiple inputs and one dependent performance assessment variable. For example, three effectiveness variables such as output, quality, and outcome could be individually regressed against two input variables such as cost and FTE.

Rushing (1974) adopted regression analysis as an assessment tool to examine the effectiveness difference in private and nonprofit organizations, and found that the organization that can acquire more inputs from the environment is more effective in accordance with Yuchtman and Seashore's resource system theory. Cheng and McKinley (1983) also applied regression analysis to the study of research performance and bureaucratic control. They found the relationship is more positive for more developed paradigm groups such as physics and chemistry than for less developed paradigms such as sociology and political science.

Regression analysis, however, concerns organizational comparative effectiveness relative to an average of the population. Thus, regression analysis identifies only effective

organizations on average, and those below the average are considered ineffective. In addition, regression analysis suffers from the same limitation as does ratio analysis. That is, regression analysis could not analyze multiple effectiveness measurement variables at the same time either.

Attempt to find a Third Way

To find a universal way to measure organizational effectiveness is not easy. To date, various attempts have been made to find a more general and universal way. They have generally not been very successful. It seems like Sisyphus' task of rolling a stone up and over the hill. Why do we have to exert this toiling work to find general measures for organizational effectiveness? Price (1972) succinctly shows the answer to this question: "The lack of general measures discourages measurement standardization; the lack of measurement standardization hinders findings; and, where the comparison of findings is difficult, it is difficult to arrive at abstract formulations, such as theory and empirical generalizations" (p.8).

Finally, Hannan and Freeman have argued that (1977) "there is no insuperable difficulty ... in developing logically consistent and falsifiable propositions concerning organizational structure and behavior" (p.111). Their argument sheds light on the further attempt to find more effective approaches measuring organizational effectiveness. This is a powerful stimulus for organization scholars to try to find general measurements for organizational effectiveness.

Conclusions

Theoretical Paradox on Organizational Effectiveness

As shown above, the various models which have been adopted by organization scholars tend to emphasize specific attributes or organizational aspects in one way or another. Campbell (1977) suggests that it is better for organizational effectiveness to develop organization-specific models based on clear assumptions, which are appropriate to the specific

organizational setting. Most scholars, however, prefer not to choose only one model among various alternatives to explain organizational phenomena. This is because each of these organizational effectiveness models has certain strength and weakness at the same time.

Perrow (1977) claimed that the rational goal approach is popular in the field of organizational effectiveness, but it is still only one approach among many alternatives. Perrow also recognizes the importance of the other alternatives, which show different effects of organizational actions because of the complexity of organizational procedures and unexpected actions and reactions among constituencies. Therefore, even though the goal approach seems to be the favored approach to evaluate organizational effectiveness, the other approaches should also be considered for appropriate evaluation of other aspects of organizational effectiveness (Gouldner 1959; Yuchtman and Seashore 1967; Cunningham 1977; Kirchoff 1977).

Even though they are proponents of system resource theory, Yuchtman and Seashore (1967) pointed out that system resource theory fails to account for the diverse needs of all segments of society. They pointed out, at the same time, that rational goal theory has problems in that the stated goals of an organization may not be its actual goals. In many instances, the goals in the system approach seem to be determined by society rather than the organization itself, and this fact makes the goals unrepresentative of the organization itself. (Kirchoff 1977). From a little different angle, as Perrow (1961) pointed out, official goals of an organization do not always account for the operative goal toward which the organization is actually directed.

Price (1972) asserts that system resource theory is just another goal theory, even though both models seem to be focused on different points of organizational effectiveness. This suggests their methods and perspectives should be integrated with other various approaches to achieve a more general approach for organizational effectiveness studies.

It is important, therefore, in the process of assessing organizational effectiveness, that several constructs such as dimensionality, time frame, constituency, value judgment, and the like should be concerned simultaneously (Cunningham 1977; Zammuto 1984). Thus, all of the previously mentioned models could be used in studies of organizational effectiveness in an

eclectic way. As Kirchoff (1977) mentioned, “trying to view organization effectiveness in a single dimension is much like trying to visualize a cube without depth perception and the result is distortion” (p.347). Therefore, whereas each model explicates some aspects of an organizational effectiveness, we still need an integrated model to guide us to more systematic and holistic understanding (Nadler and Tushman 1980).

Contribution of Empirical Study to Organizational Effectiveness Theory Building

Goodman et al. (1983) argued that the development of a prominent general theory for organizational effectiveness is unlikely, and this absence of general theory has nurtured ad-hoc atheoretical and noncumulative empirical studies of organizational effectiveness. As Lewin and Minton (1986) argued, it seems futile to seek a universal, overarching theory of organizational effectiveness. It follows that there is no one best perspective to organizational effectiveness because of various conceptions of organization and an absence of consensual criteria for effectiveness (Cameron 1978; Cameron and Whetten 1983b; Lewin and Minton 1986).

Friedlander and Pickle (1968) found that there are relatively low and sometimes negative correlations between effectiveness criteria themselves. Also Steers (1975) asserts that there is lack of consensus as to the valid set of effectiveness measures based on the comparative study of organizational effectiveness.

For this matter, Cunningham (1977) claims that, “there is no generally accepted conceptualizations, and criteria are selected on the basis of a researcher’s interest or specialty, and different organizational situations require different criteria” (p.463). Steers (1976) also pointed out that the reason for the lack of general evaluative criteria comes from inadequate attention to the issues concerning the organizational effectiveness construct.

This problem is mainly due to the fact that organizations pursue multiple and often contradictory goals at the same time, and, thus, that the concept of effectiveness changes by the stances of multiple constituencies and over the life cycle of an organization (Cameron 1978; Cameron and Whetten 1983a; Zammuto 1984). Therefore, certain attributes of organizational effectiveness are more compatible with a certain organizational structure as

compared to others in a certain time frame, but may be inappropriate in a different time frame (Lewin and Minton 1986). The criteria used in partitioning organizational resources and the resultant distribution of inducements such as money, power, status, psychological experience, and so on, will certainly differ from organization to organization (Mohr 1973).

In fact, whether an organization has a goal and how important it is are empirical matters (Mohr 1973). Although it seems to be taken for granted in most studies, what the goal or goals of particular organizations are empirical matters and need to be discovered (Gross 1969). Although empirical generalizations are not theory, both empirical generalizations and theory are examples of the abstract formulations sought by organization theorists (Merton 1968); Price 1972). In addition, experience-based learning provides indispensable information to the evolution of organizational theory. At the same time, while studies about organizations raise many insightful ideas with regards to the organizational effectiveness, many things remains to be done in terms of empirical testing. Therefore, systematic and integrated organizational theory should be extracted and developed from empirical research results with academic intuition (Nadler and Tushman 1980).

Kirchhoff (1977) aptly summarized the important connection in the relationship between empirical studies and theory building in the field of organizational effectiveness studies, “A primary purpose of social scientists has been empirical research designed to provide an ultimate criterion of organization effectiveness applicable to all organizations. Success in this endeavor would permit more understanding of organizations” (p.347).

CHAPTER III: METHOD

Data Envelopment Analysis

As Lewin and Minton (1986) pointed out, “the multiplicity of means and the plethora of ends, as well as the many management philosophies and associated organization design extant, have made the measurement of organizational effectiveness a very complex problem” (p.528). The complexity is mainly attributed to multiplicity of effectiveness measures and the diversity of organizational preferences to effectiveness in the time and spatial continuum. In the case of research organizations, the abstract notion of outcomes adds to the difficulty of measurement (Altschuld and Zheng 1995).

Due to the lack of universality of organizational effectiveness, effectiveness has usually been determined through a comparison between similar functions, or relatively similar units of organizations (Lewin and Minton 1986). Traditionally, ratio analysis, including cost-benefit analysis, has been one of the most frequently used methods to evaluate the relative effectiveness of different policy programs. Thus it is often applied to measure the relative effectiveness of alternative means of accomplishing various goals (Campbell 1977). It is generally believed that traditional methods such as least square method, correlational analysis, ANOVA, and regression analysis do not properly measure organizational effectiveness. Data Envelopment Analysis (DEA) was developed to overcome some of the deficiencies of traditional methods (Lewin and Minton 1986).

DEA was originally developed for the purpose of efficiency evaluation primarily in Operations Research. However, proponents of DEA have pointed to the implications of their efficiency findings on effectiveness considerations (Golany and Tamir 1995), so that DEA can be further exploited to measure organizational effectiveness. More recently, DEA is being applied to a wide range of disciplines in the social sciences, business, and engineering.

Recent trends that emphasize development of theories of best practice help DEA broaden its boundaries (Seiford 1996).

In the field of organization theory, DEA's capability to identify best practice organizations provides the basis for establishing theories for effective organizations (Lewin and Seiford 1997). Lewin and Seiford (1997) assert that DEA combined with case studies of effectiveness could drive a grounded theory of organizations. DEA seems a very valuable tool to evaluate the relative effectiveness of homogeneous organizations with multiple inputs and multiple outputs. In this vein, Cameron's (1978) findings that school units which utilize multiple inputs to produce multiple outputs suggest DEA as an appropriate method to evaluate the organizational effectiveness of the research centers within the university system.

In recent applications of DEA in the higher education, Zheng and Stewart (2000) assess overall performance of America's public research I universities as defined by the Carnegie Classification System using DEA, and Moreno and Tadepalli (2002) use DEA as a way to assess productivity of 42 academic departments of a land-grant university.

Fundamentals of DEA

Basic concepts. DEA was proposed by Charnes, Cooper and Rhodes (1978) as a mathematical programming technique to evaluate the relative efficiency of various kinds of homogeneous organizational units, which are called Decision Making Unit (DMUs), such as hospitals, national park services, public education, and so on (Tankersley and Tankersley 1996). DEA is useful to assess the relative effectiveness among DMUs, having multiple inputs and multiple outputs. DEA is useful in cases where DMUs' input-output transformation relationships are not well established.

Unlike traditional parametric approaches, which focus on the average and estimation of parameters that are associated with one single optimized regression equation based on central tendency analyses, DEA takes an approach in which each DMU is optimized to its fullest possibility. DEA does this by calculating an optimal performance for each DMU relative to all the other DMUs in the population. Fig.2 shows the basic ideas of DEA and regression analysis. In the Fig.2, the dotted line shows a traditional regression plane based on an

average of the population, and the solid line shows the efficient frontier calculating a discrete piecewise set of the several optimized DMUs.

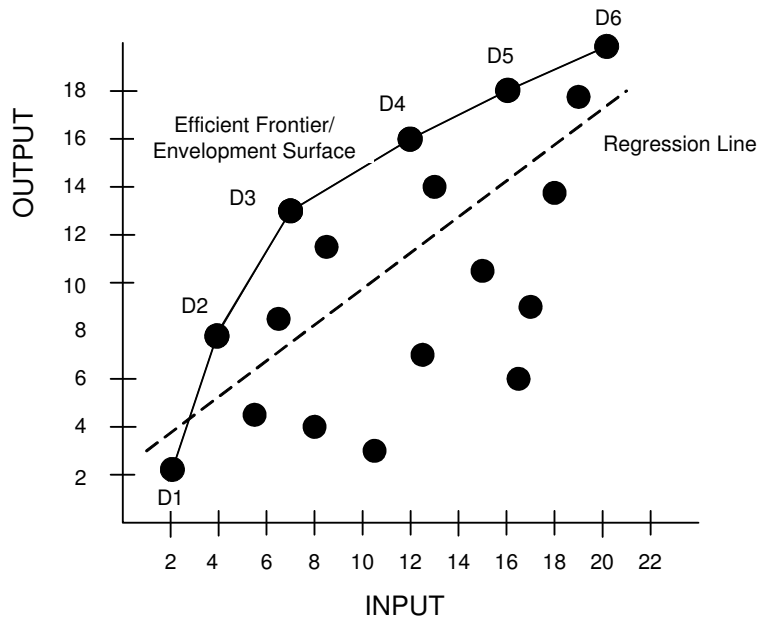


Figure 2. Comparison of DEA and Regression Analysis

DEA seeks to describe which of n DMUs determine an envelopment surface or efficient frontier. Any DMUs that lie on the envelopment surface are believed to be efficient. DMUs that lie below the surface are deemed inefficient. The relative efficiency of each DMU is calculated using all of the DMUs' input and output variables. For each inefficient DMU, DEA identifies the sources and level of inefficiency for each of the inputs and outputs, and suggests how to reach the efficient frontier with the given framework of inputs and outputs.

Strengths. Since DEA tries to find best practice organization(s) and to optimize each organization in the population, it can provide new managerial insights. Charnes et al. (1993) suggest the following as potential strengths of DEA as an evaluation model: DEA

1. focuses on individual observations in contrast to population averages;
2. produces a single aggregate measure for each DMU in terms of its utilization of input factors (independent variables) to produce desired outputs (dependent variables);
3. can simultaneously utilize multiple outputs and multiple inputs with each

- being stated in different units of measurement;
4. can adjust for exogenous variables;
 5. can incorporate categorical (dummy) variables;
 6. is value free and does not require specification or knowledge of a priori weights or price for the inputs or outputs;
 7. places no restriction on the functional form of the production relationship;
 8. can accommodate judgment when desired;
 9. produces specific estimates for desired changes in inputs and/or outputs for projecting DMUs below the efficient frontier onto the efficient frontier;
 10. is about Pareto optimal;
 11. focuses on revealed best-practice frontiers rather than on central-tendency properties of frontiers; and
 12. satisfies strict equity criteria in the relative evaluation of each DMU. (p.8)

Classification. DEA techniques are generally broken down into two representative models; CCR⁸ and BCC⁹. The main difference between CCR and BCC models lies in their assumption of production functions. As shown in Table 3, whereas the CCR model produces a constant returns-to-scale (CRS) envelopment surface, the BCC model produces a variable returns-to-scale (VRS) envelopment surface.

Table 3. Representative DEA models and Their Application

Model	Envelopment surface	Orientation
CCR	CRS	Input Orientation
		Output Orientation
BCC	VRS	Input Orientation
		Output Orientation

Source: Lewin and Seiford (1997).

Each model is further broken down by its approach to achieve efficiency. In input orientation models, proportional decrease in the input variables is used as a means to achieve efficiency. In output orientation models, proportional increase in the output variables is used (Lewin and Seiford 1997).

⁸ CCR was named after its proponents Charnes, Cooper, and Rhodes.

⁹ BCC was named after its proponents Banker, Charnes, and Cooper.

Figure 3 shows how inefficient DMUs such as D_i and D_o approach the efficient frontier in CCR and BCC models. In both models, D_i can reach the efficient frontier by decreasing its input proportionally, and D_o can reach the efficient frontier by increasing its output proportionally. It is important to note the constant return of scale in the CCR model and variable return of scale in the BCC model.

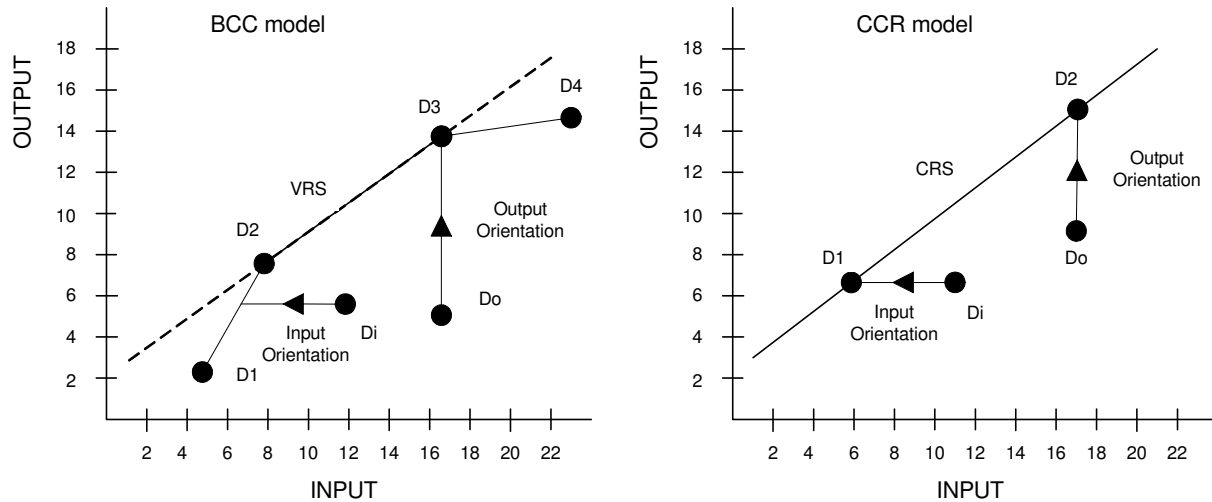


Figure 3. Envelopment Surface: BCC and CCR

Limitations of DEA

DEA is a relatively new approach to analyze relative effectiveness of organizations, and has many beneficial attributes. However, it also has several technical and practical limitations.

First of all, since the results are based on input and output variables of individual DMUs, DEA is very sensitive to variable selection, model specification, and data errors. The choice of different input and output variables would incur totally different results (Tankersley and Tankersley 1997). Furthermore, being a nonparametric technique, DEA has no statistical indicators to measure error as does regression analysis (Nyhan and Martin 1999).

Secondly, the number of input and output variables is a sensitive problem in DEA. As more input and output variables are included in the analysis, the proportion of best practice DMUs tends to increase, and the explanatory power of the analysis will decrease. Thomas,

Greffe, and Grant (as cited in Tankersley and Tankersley 1996) suggest that the number of input variable should be larger than the number of output variables, and the total number of DMUs in the data set should be at least twice the number of input and output variables.

Finally, as a nonparametric technique, DEA has no capability to measure error and the effects of error. Furthermore, DEA is not well suited for hypothesis testing. Therefore, researchers who use DEA should be well grounded in their data set to avoid misusing input and output measures whose theoretical connections may be questionable (Nyhan and Martin 1999).

Mathematical Formulation of DEA

The mathematical complexity of DEA may be an obstacle for some researchers to overcome. However, the development of a number of DEA software programs helps researchers alleviate computational difficulties. Nonetheless, some mathematical understanding will be necessary to apply DEA and interpret results. Charnes, Cooper, and Rhodes (1978) generalized their model in terms of fractional linear programming formulation. The CCR mathematical model is summarized as follows. The efficiency of a decision making unit (DMU) K , which utilizes multiple inputs to produce multiple outputs can be defined as

$$E_k = \frac{\sum_{r=1}^s U_r Y_{rk}}{\sum_{i=1}^m V_i X_{ik}} \quad (1)$$

Where,

E_k = efficiency of organization K ,

U_r = weight for output r ,

V_i = weight for input i ,

Y_{rk} = amount of output $r= 1, \dots, s$ produced by organization K ,

X_{ik} = amount of input $i= 1, \dots, m$ consumed by organization K ,

S = number of outputs,

M = number of inputs.

Suppose we have n DMUs, where each DMU j chooses its own set of weights for both outputs and inputs to achieve Pareto optimality. The following model shows the precise form

of this concept;

$$\text{Maximize } E_j = \frac{\sum_{r=1}^s U_r Y_{rj}}{\sum_{i=1}^m V_i X_{ij}} \quad (2)$$

subject to:

$$\begin{aligned} \sum_{r=1}^s U_r Y_{rj} / \sum_{i=1}^m V_i X_{ij} &\leq 1 \quad ; \quad j = 1, \dots, n, \\ U_r, V_i &\geq 0 \quad ; \quad r = 1, \dots, s; \quad i = 1, \dots, m, \end{aligned}$$

where,

- E_j = efficiency of organization J,
- U_r = weight for output r,
- V_i = weight for input i,
- Y_{rj} = amount of output $r = 1, \dots, s$ produced by organization J,
- X_{ij} = amount of input $i = 1, \dots, m$ consumed by organization J,
- S = number of outputs,
- M = number of inputs.

Depending on the orientation of the DEA model, this study has two different linear programming solutions. In the output oriented environment, the linear programming solution should be as follows (Lewin and Seiford 1997);

$$\text{Maximize } \sum_{r=1}^s U_r Y_{rj} \quad (3)$$

Subject to

$$\begin{aligned} \sum_{r=1}^s U_r Y_{rj} - \sum_{i=1}^m V_i X_{ij} &\leq 0 \quad ; \quad j = 1, \dots, n \\ \sum_{i=1}^m V_i X_{ij} &= 1 \\ U_r &\geq 0 \quad ; \quad r = 1, \dots, s \\ V_i &\geq 0 \quad ; \quad i = 1, \dots, m \end{aligned}$$

Where

- E_j = efficiency of organization J,
- U_r = weight for output r,
- V_i = weight for input i,
- Y_{rj} = amount of output $r = 1, \dots, s$ produced by organization J,
- X_{ij} = amount of input $i = 1, \dots, m$ consumed by organization J,
- S = number of outputs,

M = number of inputs.

In the input orientation environment, the solution is as follows;

$$\text{Minimize} \quad \sum_{i=1}^m V_i X_{ij} \quad (4)$$

Subject to

$$\sum_{r=1}^s U_r Y_{rj} - \sum_{i=1}^m V_i X_{ij} \leq 0 \quad ; \quad j = 1, \dots, n$$

$$\sum_{r=1}^s U_r Y_{rj} = 1$$

$$U_r \geq 0 ; r = 1, \dots, s$$

$$V_i \geq 0 ; i = 1, \dots, m$$

Where

U_r = weight for output r,

V_i = weight for input i,

Y_{rj} = amount of output r = 1, ..., s produced by organization J,

X_{ij} = amount of input i = 1, ..., m consumed by organization J,

S = number of outputs,

M = number of inputs.

Illustrative Example of DEA

DEA can be illustrated using a simple practical example. As reported in Table 4, suppose three research centers have two output variables (publications and workshops) and two input variables (size of faculty and salary).

Table 4. DEA example

DMUs	Salary	Faculty	Publications	Workshops
Center for Politics	\$200,000	4	12	10
Center for Economics	\$300,000	6	20	6
Center for Sociology	\$400,000	7	16	16

We can approach this example in terms of both output maximization and input minimization linear programming format as follows.

Output Orientation CCR Model

Center for Politics:

Objective function: $\text{Max } 12\mu_1 + 10\mu_2$

Subject to: $200000\nu_1 + 4\nu_2 = 1$

$$12\mu_1 + 10\mu_2 - 200000\nu_1 - 4\nu_2 \leq 0$$

$$20\mu_1 + 6\mu_2 - 300000\nu_1 - 6\nu_2 \leq 0$$

$$16\mu_1 + 16\mu_2 - 400000\nu_1 - 7\nu_2 \leq 0$$

$$\mu_1, \mu_2, \nu_1, \nu_2 \geq 0$$

Center for Economics:

Objective function: $\text{Max } 20\mu_1 + 6\mu_2$

Subject to: $300000\nu_1 + 6\nu_2 = 1$

$$12\mu_1 + 10\mu_2 - 200000\nu_1 - 4\nu_2 \leq 0$$

$$20\mu_1 + 6\mu_2 - 300000\nu_1 - 6\nu_2 \leq 0$$

$$16\mu_1 + 16\mu_2 - 400000\nu_1 - 7\nu_2 \leq 0$$

$$\mu_1, \mu_2, \nu_1, \nu_2 \geq 0$$

Center for Sociology:

Objective function: $\text{Max } 16\mu_1 + 16\mu_2$

Subject to: $400000\nu_1 + 7\nu_2 = 1$

$$12\mu_1 + 10\mu_2 - 200000\nu_1 - 4\nu_2 \leq 0$$

$$20\mu_1 + 6\mu_2 - 300000\nu_1 - 6\nu_2 \leq 0$$

$$16\mu_1 + 16\mu_2 - 400000\nu_1 - 7\nu_2 \leq 0$$

$$\mu_1, \mu_2, \nu_1, \nu_2 \geq 0$$

Input Orientation CCR Model

Center for Politics:

Objective function: $\text{Min } 200000\nu_1 + 4\nu_2$

Subject to: $12\mu_1 + 10\mu_2 = 1$

$$12\mu_1 + 10\mu_2 - 200000\nu_1 - 4\nu_2 \leq 0$$

$$20\mu_1 + 6\mu_2 - 300000\nu_1 - 6\nu_2 \leq 0$$

$$16\mu_1 + 16\mu_2 - 400000\nu_1 - 7\nu_2 \leq 0$$

$$\mu_1, \mu_2, \nu_1, \nu_2 \geq 0$$

Center for Economics:

Objective function: $\text{Min } 300000\nu_1 + 6\nu_2$

$$\begin{aligned}
&\text{Subject to: } 20\mu_1 + 6\mu_2 = 1 \\
&12\mu_1 + 10\mu_2 - 200000\nu_1 - 4\nu_2 \leq 0 \\
&20\mu_1 + 6\mu_2 - 300000\nu_1 - 6\nu_2 \leq 0 \\
&16\mu_1 + 16\mu_2 - 400000\nu_1 - 7\nu_2 \leq 0 \\
&\mu_1, \mu_2, \nu_1, \nu_2 \geq 0
\end{aligned}$$

Center for Sociology:

Objective function: Min $400000\nu_1 + 7\nu_2$

$$\begin{aligned}
&\text{Subject to: } 16\mu_1 + 16\mu_2 = 1 \\
&12\mu_1 + 10\mu_2 - 200000\nu_1 - 4\nu_2 \leq 0 \\
&20\mu_1 + 6\mu_2 - 300000\nu_1 - 6\nu_2 \leq 0 \\
&16\mu_1 + 16\mu_2 - 400000\nu_1 - 7\nu_2 \leq 0 \\
&\mu_1, \mu_2, \nu_1, \nu_2 \geq 0
\end{aligned}$$

This study used Frontier Analyst 3.0 to run the DEA calculations. As shown in Table 5, The efficiency score of both Center for Politics (CFP) and Center for Economics (CFE) are 1, and that of Center for Sociology (CFS) is .9143 in terms of both input and output orientations. Therefore, both CFP and CFE are on the efficient frontier, and, as a reference set, these two centers suggest how CFS might reach the efficient frontier by adjusting their inputs and outputs.

Table 5. Efficiency Scores

DMUs	Efficiency Score
Center for Politics	1.0000
Center for Economics	1.0000
Center for Sociology	0.9143

As reported in Table 6, in the case of output orientation, CFS needs to reduce salary in the amount of \$50,000, and to increase 5 more publications and 1 more workshop to perform as well as the other centers to which it is compared. If input orientation were assumed, CFS has to reduce salary in the amount of \$80,000, and 1 faculty, and increase 3 more publications to be an efficient DMU.

This example shows that policy makers or decision makers could enhance their analytic capability and management policy availability in that DEA identifies inefficient

DMUs and suggests improvement target for inefficient DMUs as well.

Table 6. DEA result for Center for Sociology

Variable	Actual	Output Orientation		Input Orientation	
		Target	Potential Improvement	Target	Potential Improvement
Salary (1,000\$)	400	350	-12.50%	320	-20.00%
Faculty	7	7.00	0.00%	6.40	-8.57%
Publications	16	21.00	31.25%	19.20	20.00%
Workshops	16	17.50	9.37%	16.00	0.00%

Methodical Framework for Data Analysis

To research the effectiveness of research organizations, one needs to consider their organizational structure, process, focus, and various relations with environments. Since the competing values model encompasses four paradoxical theoretical models: rational goal model; open system model; internal process model; and human relations model, in terms of the three dimensions of organizational focus, structure, means and ends, the competing values approach seems to satisfy those conditions among various theoretical approaches to studying organizational effectiveness.

If we consider the nature and the mission of research centers and institutes in public universities and colleges, their attributes are mainly driven by the society, namely their organizational environments, rather than their structures, and ends rather than means. Therefore, in terms of organizational focus frame, their characteristics are driven by how to contribute to society using their organizational capability. This means that research centers and institutes should stress external focus rather than internal focus for the mission delegated by the environment. Yet their external contributions could not be achieved with inefficient internal processes and ineffective human resources. Therefore, all of the factors in all four models are related to each other to some extent, rather than being independent.

Competing Values Approach for Analytic Modeling

From the stand point of the focus frame in the competing values approach, the open

system model and the rational goal model are located in the external focus frame which emphasizes outputs and interrelation with the environment, while the human relations model and the internal process model are placed on the internal focus frame which emphasizes organization itself.

As complex but loosely coupled systems (Weick 1976), research organizations seem to be more externally-focused and flexible rather than internally-focused and control-driven. As a matter of fact, research centers and institutes in the public universities have all the aspects of the four models at the same time. There are several reasons why this study employs the competing values approach as an appropriate theoretical framework to analyze the effectiveness of research centers and institutes in public universities.

Firstly, in light of history and mission (Richter 1962; Lord and Spero 1970), universities are the prototype of a multipurpose professional organization (Hall 1999). As an important research engine of the public universities, research centers and institutes have multiple goals including research, public service, teaching and training, and so forth. Therefore, research centers and institutes should consider their own performance, relations with their environments, their internal process, and human resources at the same time.

Secondly, every level of government, not-for-profit organizations, and private companies affect the activities and prospects of research centers and institutes because they get their funds from these various sources. The research centers and institutes have to adopt their organizational context toward survival or success according to changes in their funders' characteristics such as policy, strategy, financial situation, and leadership style. Moreover, these environmental situations make the organizational context of research centers and institutes more complicated (Alpert 1985; Volkwein 1989; Frost, Hearn et al. 1997; Hossler, Lund et al. 1997). This is another reason why this study considers all four models of the competing values approach as a theoretical framework.

Thirdly, academic propensities and the unique nature of individual research centers and institutes is another important factor which affects the profile of their organizational structures and behaviors. The research centers and institutes could be categorized into various fields according to the disciplinary classification (National Research Council 2001). The research

centers and institutes decide their research directions and focuses, and define their disciplinary fields such as social science, physical sciences, life science, engineering, and so forth, which are closely related to university departments and programs. The unique nature of these various disciplines suggests the importance of assessing the effectiveness of research centers and institutes in terms of the four different models of the competing values approach.

Because of the aforementioned reasons, this study assumes that the competing values approach provides a useful framework for evaluating the effectiveness of research centers and institutes by the academic disciplines, life cycles (Quinn and Cameron 1983), and size (Kimberly 1976). Considering all those factors that affect their structures, processes, and goals, this study creates a structural model to assess the effectiveness of research centers and institutes at public universities in Florida.

External Focus Effectiveness Modeling

Rational Goal Model. Research products are believed to be the most important achievement of research centers and institutes. Publications, patents, and conference presentations are examples of research accomplishments. In addition, teaching and training undergraduates and graduate students is one of the most important goals and a mission which should not be overlooked

Operationalized research question 1: If a research center produces more research outputs such as publications, presentations, teaching, and training using less resources including personnel and expenditures, the organization is believed to be more effective.

Open System Model. The mission of research centers and institutes at public universities mainly consists of research and public service. Within these categories, public service activities are mostly focused on interaction with constituencies. The public services of the research centers and institutes enhance the quality of life in the communities, raise their prestige within the neighborhood, help their financial resources through fees and donations, and affect their major funding sources indirectly. Also, the amount of contracts and grants the research centers and institutes make shows their achievement based on their capability and past performances from open system perspective.

Operationalized research question 2: If a research center provides more public services using less resources including personnel and expenditures, and achieves resources, the organization is believed to be more effective.

Operationalized research question 3: Research centers and institutes which spend fewer years in operation are likely to be more externally-focused to raise more funds from the environment, and the organizations are believed to be more effective from the perspective of the open system model.

Internal Focus Effectiveness Modeling

According to Rainey (1991), human resource and internal process models do not involve complete conceptions of organizational effectiveness. Both models focus on internal organization itself. On the other hand, the human relations model stresses morale and human resource development, while internal process focused on stability and control. Those are distinct characteristics that differentiate the human relations model from the internal process model in research organizations.

Human Relations Model. Growth in size and age are important sources of dysfunctionality in research organizations. As the organization grows, interpersonal and intergroup problems intensify. In this situation, individual members in the organization tend to accept a dependent and submissive position, making the organization a more rigid system (Argyris 1968). However, the average size of research organizations in our sample is not large enough for us to expect that interpersonal and intergroup conflict as promulgated in the human relations model might not to be an issue. Furthermore, it is one of important incentives for researchers to provide more learning opportunities to stimulate their morale which is directly related to organizational effectiveness.

Operationalized research question 4: According to the human relations model, if it holds more learning opportunity such as conferences and workshops, and sends its employees to similar types of activities with less resources, the research center is believed to be more human-relations driven and effective.

Internal Process Model. In general, as organizations grow in size or become older in age, they will exhibit more formalization in behavior, and more elaboration in structure

(Minzberg 1980). For example, the older the living system is, the higher the probability is to place emphasis on the role of space, technical help, and equipment in innovation and performance (Argyris 1968). Therefore, research organizations that pursue stability in terms of personnel and process, are believed to be more effective from the perspective of the internal process model.

Operationalized research question 5: Research centers and institutes that have more personnel are believed to be more stable and effective from the perspective of the internal process model.

Operationalized research question 6: Research centers and institutes that spend more years in operation are believed to be more stable and effective from the perspective of the internal process model.

Effectiveness Modeling by Discipline and Age

One of the research questions of this study is to find out whether there are differences between disciplines and between ages for the four models of the competing values approach. For this research question, this study categorized research centers based on the following criteria.

Research centers and institutes by discipline. The nature of research centers and institutes is closely related to academic disciplines. In particular, the creation of these research centers and institutes at the universities and colleges is clearly based on their research capability as supported by academic departments. Furthermore, the interdisciplinary research trend in current academic fields makes the nature of research centers more complex than before.

Since 1970, one of the major research-funding sources that provides for comprehensive disciplines as compared to other federal research funds, the National Science Foundation (NSF) has classified the fields of research into engineering, physical sciences, environmental sciences, mathematical & computer sciences, life sciences, psychology, and social sciences (NSF1999; NRC2001; Davey 2003). Table 7 summarizes the NSF research field classification.

Table 7. NSF Research Field Classification

Research Field	Sub-Field
Life Sciences	Biology, Agriculture, Environmental biology, Clinical medical
Psychology	Biological aspects, Social aspects
Physical Sciences	Astronomy, Chemistry, Physics
Environmental Sciences	Atmospheric sciences, Geological sciences, Oceanography
Math & Computer Science	Mathematics, Computer Science
Social Sciences	Anthropology, Economics, Political Science, Sociology, History, Linguistics
Engineering	Aeronautical, Astronautical, Chemical, Civil, Electrical, Mechanical, Metallurgy & Material

This study will classify the research centers and institutes based on their primary discipline. As reported in Table 8, this study has identified 13 primary disciplines including multidisciplinary arrangements. They are further categorized based on their research focus and applicability.

Table 8. Categorized Discipline

Categorized Discipline	Integrated Disciplines
Engineering	Engineering
Natural Applied Science	Computer Science, Environmental Science, Agricultural Science
Natural Basic Science	Mathematical Science, Physical Science, Life Science
Social Science	Psychology, Humanity, Education, Art and Music, Social Science
Interdisciplinary	Interdisciplinary

Research centers and institutes by age. There are many researches who argued that various changes occur in organizations by life cycle or development stages which is characterized sequential in nature. For the organizational life cycles and the CVF, Quinn and Cameron (1983) suggested that open system model is important in the early stage of life cycle, and human relations model, internal process model and rational goal model increased in

importance over time in a study about a development center in the former New York State Department of Mental Hygiene for a three year period, 1974-1976. In addition, Cameron and Whetton (as cited in Quinn and Cameron 1983) argued that open system model found to be important in early stage, and rational goal model and internal process were important in later stage of development. For the issue mentioned above, this study categorized 150 research CIs into 4 age groups: 1-5 years; 6-9 years; 10-20 years; and over 20 years.

Data Collection

Data for this study were collected as part of the study of Florida public postsecondary centers and institutes implemented by the Florida Council for Education Policy, Research and Improvement (CEPRI) during 2001-2002. According to the section 1008.51 (4) (j) F.S., the Florida legislature assigned the CEPRI to assess the return on the state's investment in research conducted by the public postsecondary education institutions from January, 2003 and on a 3-year cycle. Different from the CEPRI study which was focused on economic impact such as returns on investment (ROI), this study focuses on organizational effectiveness using DEA modeling. To collect the inputs and outputs data, this study adopts two different methods: archival data and survey data.

The archival data is about expenditures of the centers and institutes (CIs) in the Florida State University System (SUS). These data were extracted from the annual expenditure reports (2000-2001) submitted to the Division of Colleges and Universities, Florida Department of Education, by the 512 CIs in the SUS. These data provide expenditure profiles associated with salary and operating outlay.

Survey methods were implemented to collect the specific activities, staffing, and performance of the centers and institutes in Florida's public universities. The survey was conducted during April and May of 2002. The survey questionnaire asked about the one year situations during fiscal year 2000-2001. Each CI's directors was contacted by e-mail, and the directors could respond directly to the Web-based questionnaire through the Internet. In order to encourage center/institute directors to complete the survey, the approach emphasized asking only those questions that related to the following four areas of information: Contact

Information; Organizational Information; Center/Institute Staffing Information; Performance and Benefits of Center/Institute Operations Information.

After collecting survey responses and the archival expenditure data, those two data sets were merged into one data set, which represents input and output variables of 150 CIs for the DEA modeling.¹⁰

Selection of Variables

Selection of input and output variables to assess the organizational effectiveness is not an easy task. This difficulty mainly stems from the multiplicity of organizational goals, diversity of definitions of effectiveness, and variety of approaches to effectiveness as previously described. Furthermore, the fact that some variables could be regarded as an input variable from one approach, but could be assumed as an output from the other perspective, aggravates the difficulty of selection. Among all of variables, output variables, personnel variable in the input variables, and control variables are from survey questionnaires. Expenditures in the input variables were extracted from the archive of Florida Department of Education. Table 9 summarizes the key variables that this study uses in terms of four models.

¹⁰ In the process of data setting, we figured out that there was a large variation between CIs in terms of input variables which seem to be essential resources to operate the CIs in the sample. Especially, we found that some CIs have no faculty members or no other personnel services (OPS) employees in their organizations. Furthermore, there were CIs that spent less than \$2,000 per year as total expenditures. Comparing the CIs which have almost no expenditures and no critical personnel such as faculty and OPS with CIs which spend considerable amounts for personnel who implement the CIs' activities does not seem to be fair. We assumed that the minimum necessary condition to be included in the sample of CIs of this evaluation is to have personnel such as faculty and OPS and to spend more than \$2,000 per year. Therefore, we selected 150 CIs which had faculty and OPS as personnel and spent more than \$2,000 per year for their operations as our evaluation data set. Comparing the effectiveness results between inclusion and exclusion of 13 CIs which have no faculty in the data set, we found that there is some difference between their efficiency scores (refer to Appendix A). Finally, we created a sample data set of 150 CIs for the effectiveness analysis. In addition, we ran an exploratory cluster analysis to find whether other meaningful groupings existed in the research CIs data set in terms of their input and output variables. However, the cluster analysis produced no statistically significant groupings among the CIs. Therefore, our DEA procedures were run with all 150 CIs.

Output Variables (16):

- Total number of publications produced
- Total number presentations made
- Total number of public services rendered
- Total number of patents and copyrights issued
- Total number of courses taught
- Total number of trainees (unpaid students)
- Total number of external evaluations¹¹
- Internal evaluation (Dummy Variable)
- Total number of Full-Time Equivalent (FTE)¹² administrative and professional staff
- Total number of FTE technical staff
- Total number of FTE support staff
- Total amount of contracts and grants (C&G)¹³
- Total amount of fees
- Total amount of private funds
- Total number of conference
- Total number of workshop

Input Variables (11):

Personnel (7)

- Total number of FTE faculty
- Total number of FTE post-docs
- Total number of FTE administrative and professional staff
- Total number of FTE technical staff
- Total number of FTE support staff
- Total number of graduate student
- Total number of undergraduate student

¹¹ External evaluation consists of evaluation by funding agency, university, and professional organizations.

¹² A 1.0 FTE University Support Personnel or Administrative and Professional employee employed for twelve months and equal to 1.0 person year. A 1.0 faculty member employed for a nine-month period for academic year.

¹³ C&G represents activities for which the university receives funds for specific services, usually research or training from outside agency including federal funds.

Expenditures (4)

- Total amount of FTE salary
- Total amount of other personnel service (OPS)¹⁴
- Total amount of expense category¹⁵
- Total amount of operating capital outlay (OCO)¹⁶

Control Variables (2):

- Age
- Discipline

Table 9. Input and Output Variables by Models

Model	Input Variables	Output Variables
Rational Goal	<ul style="list-style-type: none"> ▪ Personnel <ul style="list-style-type: none"> ✓ FTE Faculty ✓ FTE Post-Docs ✓ FTE Administrative and Professional Staff ✓ FTE Technical Staff ✓ FTE Support Staff ✓ Paid Graduate Students ✓ Paid Undergraduate Students ▪ Expenditures <ul style="list-style-type: none"> ✓ Faculty Salaries ✓ Other Personnel Services (OPS) ✓ Expense ✓ Operating Capital Outlay (OCO) 	<ul style="list-style-type: none"> ▪ Research <ul style="list-style-type: none"> ✓ Number of Publications ✓ Number of Presentations ✓ Number of Patents and Copyrights ▪ Training <ul style="list-style-type: none"> ✓ Number of Unpaid Students ▪ Instruction <ul style="list-style-type: none"> ✓ Number of Teaching Classes
Open System	<ul style="list-style-type: none"> ▪ Personnel <ul style="list-style-type: none"> ✓ FTE Faculty ✓ FTE Post-Docs ✓ FTE Administrative and Professional Staff ✓ FTE Technical Staff 	<ul style="list-style-type: none"> ▪ Public and Professional Service ▪ External Evaluations ▪ Resource Acquisition <ul style="list-style-type: none"> ✓ Contracts and Grants ✓ Fees ✓ Private Funds

¹⁴ OPS represented the costs of temporary employment such as Student assistants, Graduate Assistants, Consultants, Faculty Adjuncts.

¹⁵ Expense refers to the cost of expendable items such as postage, telephone, office supplies and utilities.

¹⁶ OCO represents the cost of non-consumable and nonexpendable equipment which is \$1,000 or more and the normal expected life of which is one year or more.

Table 9 –Continued.

Model	Input Variables	Output Variables
	<ul style="list-style-type: none"> ✓ FTE Support Staff ✓ Paid Graduate Students ✓ Paid Undergraduate Students ▪ Expenditures <ul style="list-style-type: none"> ✓ Faculty Salaries ✓ Other Personnel Services (OPS) ✓ Expense ▪ Operating Capital Outlay (OCO) 	
Human Relations	<ul style="list-style-type: none"> ▪ Personnel <ul style="list-style-type: none"> ✓ FTE Faculty ✓ FTE Post-Docs ✓ FTE Administrative and Professional Staff ✓ FTE Technical Staff ✓ FTE Support Staff ✓ Paid Graduate Students ✓ Paid Undergraduate Students ▪ Expenditures <ul style="list-style-type: none"> ✓ Faculty Salaries ✓ Other Personnel Services (OPS) ✓ Expense ▪ Operating Capital Outlay (OCO) 	<ul style="list-style-type: none"> ▪ Human Development <ul style="list-style-type: none"> ✓ Conference ✓ Workshop and Training ✓ Number of Unpaid Students
Internal Process	<ul style="list-style-type: none"> ▪ Personnel <ul style="list-style-type: none"> ✓ FTE Faculty ✓ FTE Post-Docs ✓ Paid Graduate Students ✓ Paid Undergraduate Students ▪ Expenditures <ul style="list-style-type: none"> ✓ Faculty Salaries ✓ Other Personnel Services (OPS) ✓ Expense ✓ Operating Capital Outlay (OCO) 	<ul style="list-style-type: none"> ▪ Stability <ul style="list-style-type: none"> ✓ Number of Administrative and Professional Staff ✓ Number of Technical Staff ✓ Number of Support Staff ▪ External Evaluations ▪ Internal Evaluation

Descriptive statistics of variables in Table 10 shows that there are wide ranges of the variables. The wide range of values across the variables could cause computational difficulties (Ali 1993; Banxia Software 2003), and a researcher could resort to rescaling the

data. However, rescaling can destroy the ability to discriminate between DMUs.

Table 10. Summary of Descriptive Statistics of Variables

Category	Variable	Mean	Min.	Max.	S.D.	Skewness	Kurtosis
Input	FTE Faculty	6.66	0.5	49	8.32	2.79	9.28
	FTE Postdoc	1.31	0	22	3.54	4.22	19.63
	FTE A&P ^a	2.41	0	76	6.97	8.38	84.81
	FTE Tech Staff ^a	3.18	0	47	6.97	3.37	13.36
	FTE Support Staff ^a	2.89	0	26	4.53	2.98	10.30
	Paid Graduate Student	8.05	0	92	14.14	3.41	13.93
	Paid Undergrad Student	7.58	0	275	24.11	9.47	103.03
	Faculty Salary	\$569,269	\$2,394	\$6,091,025	893.52	3.42	14.37
	OPS	\$253,857	\$600	\$2,228,178	392.26	3.09	10.66
	Expense	\$376,724	\$0	\$7,076,107	773.99	5.36	39.15
	OCO	\$96,054	\$0	\$2,734,861	310.12	6.10	42.68
	Output	Publication ^b	29.47	0	325	41.59	3.46
Presentation ^b		30.37	0	440	57.07	4.75	27.19
Patent & Copyright ^b		0.63	0	26	2.58	7.42	66.22
Conference ^c		4.12	0	100	10.51	6.33	50.21
Workshop ^c		50.62	0	2,004	262.67	6.83	46.77
Public Service ^d		24.39	0	653	60.35	8.03	80.01
Teaching Class ^b		14.11	0	300	29.64	6.65	58.80
Unpaid Student ^e		10.97	0	92	16.89	2.50	6.61
Internal Evaluation ^f		0.63	0	1	0.49	-0.53	-1.74
External Evaluation ^f		1.06	0	3	0.81	0.50	-0.13
Contract and Grant ^d		\$855,018	\$0	\$15,740,711	1723.59	5.23	38.11
Fees ^d		\$85,859	\$0	\$5,523,523	480.55	10.05	111.87
Private Funds ^d		\$47,892	\$0	\$2,221,379	218.15	7.79	70.33

Note. ^a Dual variable: Output variables for the Internal Process Model and the Rational Goal Model, ^b Output variables for the Rational Goal Model, ^c Output variables for the Human Relations Model, ^d Output variables for the Open System Model, ^e Output variables for the Internal Process Model, ^f Output variables for the Human Relations Model and Rational Goal Model.

Thus, this study applied rescaling only fiscal data such as contracts and grants, fees, private funds, faculty salary, ops, expense, and OCO category to permit the discriminating

power of the DEA program as long as it could not cause computational difficulties.¹⁷

Data Analysis

This study used a DEA software named Frontier Analyst 3.0 from Banxia Holdings. Based on the structural modeling in the next chapter, Frontier Analyst was exploited for analyzing the relative effectiveness of research CIs in terms of the competing values framework.¹⁸ After examining the overall effectiveness of research CIs, effectiveness by discipline was examined.

This showed whether academic discipline affects the relative effectiveness of CIs by four different models in competing values approach. Also, the impact of life cycle of CIs on relative effectiveness of CIs was examined.

¹⁷ Contract and grant, fees, private funds, faculty salary, and OPS are divided by \$1,000, and expense and OCO are divided by \$100.

¹⁸ This dissertation has decided to use the CCR output oriented model for rational goal model, open system model, and human relations model. In addition, CCR input oriented model was used for internal process model.

CHAPTER IV: RESEARCH FINDINGS

Introduction

One of the most compelling purposes of this study is to find out how four different models in an integrated framework, “the competing values framework (CVF),” show the effectiveness of a research organization. The competing values model supports the idea that there can not be one universal model of organizational effectiveness (Cameron and Whetten 1983c; Lewin and Minton 1986). From this point of view, certain organizational characteristics may be more prominently associated with certain organizational settings rather than others. Additionally, due to the differences in fundamental idea of effectiveness in each model in the competing values framework, efficiency ranks or scores of an organization in each model could be different.

However, inconsistency of effectiveness scores of an organization in each model does not necessarily mean that the organization is not effective. For example, DMU A could be effective in terms of the rational goal perspective in the CVF, but ineffective in terms of the open system perspective or vice versa. In this case, we could not just say that DMU A is effective or ineffective. Therefore, constituencies who want to evaluate organizational effectiveness of organizations have to remember that to evaluate effectiveness from one perspective is not enough to provide rich information for the future of their organizations.

Based on this idea, this chapter shows the comparability of the four models in the competing values framework to measure organizational effectiveness in terms of the organization itself, organization age, and supporting discipline of study. Finally, constituencies who could use these results need to note that these results are but one diagnostic indicator for their decision-making.

Organizational Effectiveness by Model

Efficiency Score Distribution by Model

The first step to measure the organizational effectiveness of research centers and institutes (CIs) in terms of the competing values framework (CVF) is to measure the effectiveness of the CIs from each of the four different effectiveness models: rational goal model; open system model; human relations model; and internal process model, which constitute the competing values framework. Table 11 illustrates the numbers of CIs that score at various DEA efficiency levels (such as less than 60%, 60-69%, and so on) for each of the four models.

Table 11. Organizational Effectiveness by Four Models

Efficiency Score	Rational Goal (N=150)	Open System (N=150)	Human Relations (N=150)	Internal Process (N=150)
Less than 60	40 (26.6)	16 (10.6)	95 (50.0)	44 (29.3)
60-69	4 (2.7)	4 (2.7)	9 (6.0)	7 (4.7)
70-79	4 (2.7)	2 (1.3)	5 (3.3)	3 (2.0)
80-89	4 (2.7)	6 (4.0)	1 (0.7)	2 (1.3)
90-99	3 (2.0)	6 (4.0)	8 (5.3)	2 (1.3)
100	95 (63.3)	115 (76.7)	52 (34.7)	92 (61.3)
Average Score	80.1	90.9	56.0	77.9

Note. Percentage in the parenthesis

According to the DEA results about research CIs in Florida's public universities, 63.3%, 76.7%, 34.7%, and 61.3% of CIs (N=150) are at the efficiency frontier (i.e., 100% efficiency) in terms of rational goal model, open system model, human relations model, and internal process model, respectively (Table 11). In addition, the percentages of CIs which get less than a 60 efficiency score for DEA are 26.6%, 10.6%, 50%, and 29.3% of CIs in the rational goal model, open system model, human relations model, and internal process model, respectively.

These results indicate that CIs in the Florida State University System (SUS) seem to be more externally focused than internally focused in terms of the CVF. Specifically, the

average efficiency score of 90.9 in the open system model indicates that they are very active in the relationships with their constituencies surrounding them. Compared to the score of the open system model, the average efficiency score of 56 in the internal process model suggests that the research CIs are more flexibility driven rather than stability driven. However, we should note that a high average efficiency score for one certain model is only a result from a specific DEA model set, which is applied to a particular set of CIs with limited variables. Therefore, a specific CI's high efficiency score in one model does not necessarily mean that the CI is effective or efficient in all other circumstances.

Comparison between Input and Output Variables by Model

One imperative question this research should answer is whether the CIs which were justified as effective (i.e., 100 efficiency score) in each model truly got more output than they spent compared to the CIs categorized as less effective (i.e., less than 100 efficiency score). To measure the effectiveness of the CIs, we need to operationalize the input and output variables for four models (Table 9). Each of the four models has different output variables, which have been operationalized as the “ends” of each model in the CVF, although their input variables are the same except for those of the internal process model.

Rational Goal Model. Table 12 shows the results of the variables comparison between effective CIs and less effective CIs in terms of rational goal model. According to these results, CIs that were justified as effective use less input resource and generate more outputs than less effective CIs. Effective CIs' input ratios fall into the range from 27.7% (OCO) to 84.2% (number of paid graduate students) compared to those of less effective CIs.

In addition, outputs of effective CIs are from 118.8% (number of unpaid students, i.e., trainees) to 395.5% (patents and copyrights) more than those of less effective CIs. Therefore, we can say that effective CIs produce more of all outcomes such as publications, presentations, patents and copyrights, classes, and trainees than less effective CIs and do so with lower levels of all inputs (personnel and expenditures) than less effective CIs from this research setting.

Table 12. Inputs/Outputs Comparison between CIs: Rational Goal Model

Category	Variables	Effective CIs' Mean (A)	Less Effective CIs' Mean (B)	A/B
Inputs	FTE Faculty	6.032	7.736	78.0%
	FTE Postdoc	1.053	1.764	59.7%
	FTE A&P	2.163	2.836	76.3%
	FTE Tech Staff	1.911	5.382	35.5%
	FTE Support Staff	2.316	3.882	59.7%
	Paid Graduate Student	7.54	8.95	84.2%
	Paid Undergrad Student	4.52	12.87	35.1%
	Faculty Salary	\$465,000	\$748,000	62.2%
	OPS	\$191,000	\$361,000	52.9%
	Expense	\$301,200	\$507,000	59.4%
OCO	\$49,100	\$177,000	27.7%	
Outputs	Publication	33.18	23.07	143.8%
	Presentation	34.25	23.67	144.7%
	Patent & Copyright	0.87	0.22	395.5%
	Teaching Class	17.80	7.75	229.7%
	Unpaid Student	11.65	9.80	118.9%

Open System Model. From the open system model's perspective, if research centers keep a good relationship with their environments, those CIs can be called effective. To measure these relationship between research CIs and their environments, we operationalized public services the CIs have rendered, external evaluations the CIs got from constituencies, and research financial sources such as contracts and grants, fees, and private funds that they earn from the environment as outcome measures. As already mentioned, input variables are the same as those of the rational goal model.

Table 13 shows the results of the variables comparison between effective CIs and less effective CIs in terms of the open system model. According to the results, effective CIs' input ratio falls into the ranges from 57.7% (FTE post-doc) to 151.4% (FTE administrative and professional) compared to those of less effective CIs. In addition, outputs of effective CIs are from 34.2% (public services) to 905% (private funds) more than those of less effective CIs.

The effective CIs spent a little more than less effective CIs in some resources such as faculty salary (8.4%), OPS (14%), and expenses (23%). Furthermore, there were more personnel in the effective CIs, such as FTE administrative and professional (51.4%), FTE support staff (11.8%) and paid undergraduate student (6.4%) as compared to less effective CIs. However, effective CIs produce more outputs than less effective CIs in four out of five output categories such as external evaluation (8%), contracts and grants (73%), fees (156%), and private funds (905%).

Table 13. Inputs/Outputs Comparison between CIs: Open System Model

Category	Variables	Effective CIs' Mean (A)	Less Effective CIs' Mean (B)	A/B
Inputs	FTE Faculty	6.630	6.743	98.3%
	FTE Postdoc	1.122	1.943	57.7%
	FTE A&P	2.617	1.729	151.4%
	FTE Tech Staff	2.809	4.414	63.6%
	FTE Support Staff	3.000	2.529	118.6%
	Paid Graduate Student	7.31	10.49	69.7%
	Paid Undergrad Student	7.69	7.23	106.4%
	Faculty Salary	\$579,000	\$534,000	108.4%
	OPS	\$261,000	\$229,000	114.0%
	Expense	\$394,300	\$318,700	123.7%
OCO	\$82,600	\$140,200	58.9%	
Outputs	Public Services	16.84	49.17	34.2%
	External Evaluation	1.08	1.00	108.0%
	Contracts and Grants	\$949,170	\$545,659	173.9%
	Fees	\$100,091	\$39,097	256.0%
	Private Funds	\$60,434	\$6,678	905.0%

Therefore, DEA results for the open system approach do not completely support the idea that effective CIs use less resource than less effective CIs and provide more public service than less effective CIs. However, the effective CIs definitely attain more resource from the environment than less effective CIs, and they operate their CIs with fewer personnel than the less effective CIs in four out of seven personnel categories such as FTE faculty (98.3%), FTE postdoc (57.7%), FTE technical staff (63.6%), and paid graduate student (69.7%).

Human Relations Model. The human relations model focuses on the educational opportunities that research CIs provide their employees as effectiveness measurement. According to the DEA results (Table 14), effective CIs' input ratio falls into the ranges from 22.5% (FTE technique staff) to 133% (FTE administrative and professional) compared to those of less effective CIs. In addition, outputs of effective CIs are from 173.2% (unpaid students, i.e. trainees) to 1,386% (workshop) more than those of less effective CIs. The effective CIs spent less resource, and produced more outputs with two exceptions in this model.

Effective CIs had more personnel in two categories such as FTE administrative and professional (33%) and paid graduate students (28.9%) than the less effective CIs. However, the output and input results seem to be sufficient to support the idea that the effective CIs spent less resource and produced more outcome than less effective CIs.

Table 14. Inputs/Outputs Comparison between CIs: Human Relations Model

Category	Variables	Effective CIs' Mean (A)	Less Effective CIs' Mean (B)	A/B
Inputs	FTE Faculty	4.049	8.000	50.6%
	FTE Postdoc	0.804	1.576	51.0%
	FTE A&P	2.882	2.167	133.0%
	FTE Tech Staff	0.971	4.323	22.5%
	FTE Support Staff	1.775	3.465	51.2%
	Paid Graduate Student	9.45	7.33	128.9%
	Paid Undergrad Student	3.53	9.67	36.5%
	Faculty Salary	\$387,000	\$662,000	58.5%
	OPS	\$168,000	\$298,000	56.4%
	Expense	\$351,300	\$389,700	90.1%
	OCO	\$48,200	\$120,600	40.0%
Outputs	Conferences	7.49	2.38	314.7%
	Workshops	130.59	9.42	1386.3%
	Unpaid Students	15.22	8.79	173.2%

Internal Process Model. The focus of the internal process model in terms of organizational effectiveness is on stability. This research operationalized the stability of

research CIs through the number of staff such as administrative and professional, technical staff, and support staff. In addition, whether the research CIs have evaluation process including internal and external evaluation or not are other important output variables to measure their organizational effectiveness in terms of internal process model.

Table 15 shows the result of input and output comparison between effective CIs and less effective CIs. Effective CIs spent less resource in both personnel and expenditure categories. Effective CIs have more chance to get evaluated internally (219.4%) and externally (142.9%) than less effective CIs. However, there are mixed results in terms of number of staff. Effective CIs have more FTE administrative and professional (213.3%), but less FTE technical staff (58.8%) and FTE support staff (91.3%) than less effective CIs. In sum, in light of overall comparison results, effective CIs are more stable than the less effective CIs.

Table 15. Inputs/Outputs Comparison between CIs: Internal Process Model

Category	Variables	Effective CIs' Mean (A)	Less Effective CIs' Mean (B)	A/B
Inputs	FTE Faculty	5.658	8.241	68.7%
	FTE Postdoc	0.957	1.879	50.9%
	Paid Graduate Student	5.21	12.57	41.4%
	Paid Undergrad Student	4.36	12.69	34.4%
	Faculty Salary	\$493,000	\$689,000	71.6%
	OPS	\$179,000	\$372,000	48.1%
	Expense	\$367,100	\$391,800	93.7%
	OCO	\$61,600	\$150,600	40.9%
Outputs	FTE A&P	3.033	1.422	213.3%
	FTE Tech Staff	2.505	4.259	58.8%
	FTE Support Staff	2.788	3.052	91.3%
	External Evaluation	1.20	0.84	142.9%
	Internal Evaluation	0.79	0.36	219.4%

Suggestions for Less Effective CIs to be Effective CIs

One advantage of DEA for the people who are interested in the effectiveness of certain organizations is that it can provide specific recommendations to enhance effectiveness in some

ways if certain organizations are judged as ineffective from the DEA setting. The potential improvement strategies identified by DEA analysis can provide useful information to CIs in pursuing their goals associated with institutional excellence. The value of the DEA analysis is that it allows leaders to more clearly articulate the resource and productivity requirements associated with performance improvement of their organizations.

As the ultimate goal of all organizations is to achieve the best organizational effectiveness and efficiency, how to obtain them is the most critical and essential strategy of all organizations. In addition, in an environment of higher performance expectation and shrinking levels of financial support, efficient utilization of resource is becoming a critical part of the strategy of many organizations. DEA can provide clarification and allow articulation of trade offs to a degree that has yet to be used in most research institutions. With this analysis, real improvement in resource utilization and performance might be reached.

Table 16. Strategy to be an effective CI for Less Effective CI

77.67%	4597907			
Variables	Actual:	Target:	Potential improvement:	
FTEFACUL	3.00	3.00	00.00%	
FTEPOSTD	0.00	0.00	00.00%	
FTEANDP	1.50	0.64	-57.22%	
FTETECHS	2.50	0.29	-88.26%	
FTESUPPO	1.00	1.00	00.00%	
PAIDGRAD	3.00	2.92	-02.58%	
PAIDUNDE	3.00	3.00	00.00%	
PUBLICA	32.00	41.20	28.74%	
PRESENT	69.00	88.83	28.74%	
COPYRIGH	0.00	0.00	28.74%	
TEACHING	3.00	15.13	404.18%	
TRAINING	3.00	3.86	28.74%	
TOTAL_SA ^a	257.79	118.31	-54.10%	
TOT_OPS ^b	63.48	62.40	-01.70%	
TOTAL_EX ^c	1559.51	1000.13	-35.87%	
TOTAL_OCO ^d	21.00	21.00	00.00%	

Note. a Total faculty salary was divide by \$1,000. b. Total OPS was divide by \$1,000. c. Total expense was divided by \$100. d. Total OCO was divided by \$100.

Table 16 shows, for example, the strategy for research center 4597907¹⁹, which obtains

¹⁹ For purposes of DEA, each center has been assigned a specific identity number such as this.

77.67 comparative efficiency score, to be an effective research center in the rational goal model. The actual column shows the value that center 4597907 is currently achieving, and the target column displays the value that the research center should reach to be effective in this model setting. Potential improvement column shows the percentage difference between actual and target values.

If decision makers were to interpret these results literally, center 4597907, for example, would need to reduce 1 FTE administrative and professional, 2 FTE technical staff, decrease faculty salary by \$140,000, and reduce expenses by \$56,000 in terms of input resources. Furthermore, it needs to produce 9 more publications, 17 more presentations, and 12 more classes in terms of output. However, DEA should not be used in this way only. Ideally, decision makers would use DEA as diagnostic tool for helping to identify best practices. The use of DEA as a diagnostic tool is discussed more fully in Chapter V.

Strategies for all of the less effective CIs in terms of four different models: rational goal model; open system model; human relation model; and internal process model, are provided in the Appendix F.

Organizational Effectiveness Comparison between Models

Overall Effectiveness Comparison between Models

Profiles of CIs' effectiveness by models. Since the Competing Values Framework (CVF) integrates four paradoxical effectiveness models in one theoretical framework, how different they are and how they relate to each other are intriguing issues that this research seeks to address. In Table 17, 8 centers were chosen at random to illustrate CIs' efficiency scores across the four models (for all CIs, see Appendix E). This result indicates that there is difference of CIs effectiveness by models.

For example, CI 109801 is effective in terms of open system model and internal process model, but it is very ineffective in terms of human relations model (0.04) and rational goal model (13.25). On the other hand, both CI 1189613 and CI 1419507 are effective in all four models.

Table 17. CIs Efficiency Score by Models

CIs	Rational Goal	Open System	Human Relations	Internal Process
1098901	13.25	100	0.04	100
1159613	100	100	16.06	54.41
1179412	100	33.33	4.61	100
1189613	100	100	100	100
1319913	53.71	100	20.68	100
1340012	100	39.72	100	56.94
1419507	100	100	100	100
1427101	100	100	28.97	100

Figure 4 also answers a part of the question about differences between models as to organizational effectiveness. As shown in Figure 4, which was produced by mean scores for models, even though each model measured organizational effectiveness of the same CIs, the average efficiency scores for each model are different.

According to these results, we could judge that research CIs in the Florida State University System (SUS) are more effective from the open system approach than the other approaches. The results show that the best two average efficiency scores; open system (90.9) and rational goal model (80.1) are located in the external focus frame. This suggests that research CIs are more outcome driven. When we remember that open system model focuses on the relationship with the environment to obtain research resources, we conclude that research CIs in the universities maintain a good relationship with their constituencies. The second high efficiency score, the rational goal model, provides us with the information that research CIs carry out well their conventional missions such as publications, presentations, teaching, and training students.

However, the lower efficiency scores in the internal focus frame (internal process model 77.9; human relation model 56.0) show that research CIs less concentrated on their routine internal process and human development. These results seem to be plausible when we remember that research work itself is very dynamic and creative rather than routine, the researchers are more self-committed, and they have more of a sense of challenging unexploited research areas than other kinds of organizations. Therefore, compared to the

external focus models, lower average efficiency scores of the stability-focused internal process model and human development-focused human relations model are not that surprising.

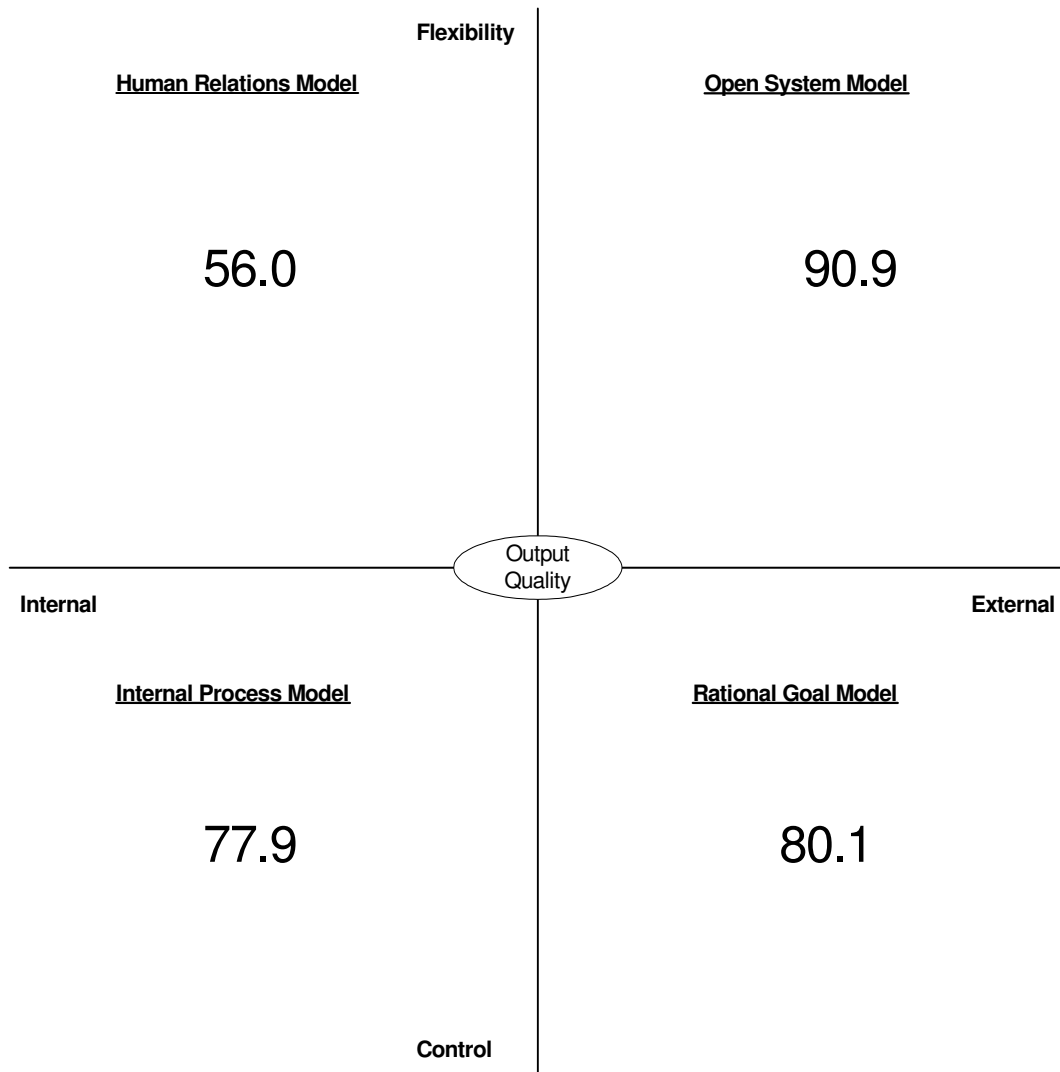


Figure 4. CIs Average Efficiency Scores by Models

Examination of the difference of CIs’ effectiveness. To answer the question dealing with how the four models in the CVF figure out the effectiveness of CIs differently, one-way ANOVA test was implemented. As shown in Table 18, the results of ANOVA indicate that there was significant difference between four groups ($F=33.092$, $P<.000$).

Table 18. One-Way ANOVA Results for the Four Models in the CVF

Source	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	96,174.983	3	32,058.328	33.092	0.000
Within Groups	577,382.688	596	968.763		
Total	673,557.672	599			

Therefore, we can say that there are differences between the efficiency scores of the CIs in terms of four models: rational goal model; open system model; internal process model; and human relations model in the CVF. This suggests that the four models capture distinctive vantage points about organizational effectiveness. Thus, we can say that it is not a good idea to see organizational effectiveness from any single model's perspective.

Examination of the relationship between CIs' effectiveness by models. One other intriguing question is whether there are any relationships between the four models. The reason we are interested in this question as much as the question about the difference between models is that, even though the four different models focus on different aspects of organizational effectiveness in the CIs, the organizational effectiveness models' ultimate goals are to enhance overall effectiveness of the CIs in terms of the multiplicity of CIs' purposes. To answer this question, we implemented correlation analysis between the four models. Table 19 shows the results of correlation analysis between four models.

The result of correlation analysis between the four models indicates that human relations model and rational goal model are correlated with a pearson's R of 0.53 and statistically significant at the $p < .001$ level. This result lets us assume that human development activities that learning opportunities for the researchers in the CIs will be helpful to enhance the rational goal outcomes such as publications, presentations, and teaching and training students. It may not seem intuitively logical that human relations and rational goal activities should be correlated. However, recent literature and research have illustrated that private firms which invest in their employees' development actually perform better over time than other organizations whose internal organizing activities are more narrowly focused on the bottom line (Huselid 1995; Locke 1995; Welbourne and Andrews 1996; Pfeffer and Veiga 1999). However, even though there are other correlations between models, these relations

are not statistically significant.

Table 19. Correlation Analysis between the Four Models in the CVF

Model		Rational Goal	Open System	Human Relations	Internal Process
Rational	Pearson correlation	1	0.103	0.53*	0.065
Goal	Sig. (2-tailed)		0.210	0.000	0.428
Open	Pearson correlation		1	0.130	0.014
System	Sig. (2-tailed)			0.113	0.868
Human	Pearson correlation			1	0.031
Relations	Sig. (2-tailed)				0.704
Internal	Pearson correlation				1
Process	Sig. (2-tailed)				

Note. * Correlation is significant at the 0.01 level (2-tailed)

Effectiveness Comparison by Age

According to Quinn and Cameron (1983), there are relationships between organizational life cycle and organizational effectiveness. They suggested that certain models within the CVF are more important than others when evaluating the organizational effectiveness in a particular life cycle stage. Their suggestion that there are relations between organizational life cycle and criteria of effectiveness encourages this research to explore the relationship between age of research CIs and the four effectiveness models in the CVF.²⁰

There are big age differences among research CIs. They vary from one year to seventy-two years, and all 150 CIs have been classified within four age groups as shown Table 20: 1-5; 6-9; 10-20; and over 20. Table 20 also shows the efficiency mean by ages and models, and Figure 5 shows these scores graphically.

²⁰ Quinn and Cameron (1983) suggested that the open system model is important in the early stages of life cycle, and human relations model, internal process model and rational goal model increase in importance over time in a study about a development center in the former New York State Department of Mental Hygiene for a three year period, 1974-1976; In addition, Cameron and Whetton (as cited in Quinn and Cameron 1983) argued that the open system model was found to be important in early stages, and rational goal model and internal process were important in later stages of development.

Table 20. Descriptive CIs Efficiency Score by Age and Models

Model	Age	Score Mean	S.D.	N
Rational Goal	1-5	74.2014	34.33237	35
	6-9	88.3152	22.54530	27
	10-20	80.4113	29.69259	46
	Over 20	79.2802	30.89854	42
Open System	1-5	89.8951	21.19085	35
	6-9	93.8781	18.16403	27
	10-20	91.0600	22.17830	46
	Over 20	89.5350	19.99212	42
Human Relations	1-5	53.9986	38.74558	35
	6-9	59.0578	39.82442	27
	10-20	51.9293	41.46642	46
	Over 20	60.1379	37.61771	42
Internal Process	1-5	77.9863	31.17946	35
	6-9	83.6626	23.65497	27
	10-20	73.1946	35.92886	46
	Over 20	79.1205	32.10656	42
Overall Score	1-5	74.0204	34.22748	35
	6-9	81.2284	30.06003	27
	10-20	74.1488	35.83402	46
	Over 20	77.0184	32.34931	42

According to these descriptive statistics, the 6-9 year old group earns comparatively better overall efficiency scores, 81.2, than the other three age groups. Other age groups (1-5 group; 10-20 group; and over 20 group) earn 74.0, 74.1, and 77.0 efficiency scores, respectively.

Table 21 shows the distribution of number of effective CIs by age and models. From this, we could find that the 6-10 age group has more effective CIs than other age groups in terms of the rational goal model (19 CIs, 70.4%) and open system model (23 CIs, 85.2%), respectively. In addition, the over 20 age group (16 CIs, 38.1%) and 1-5 age group (22 CIs, 62.9%) have more effective CIs than other age groups in terms of the human relations model and internal process model, respectively.

Table 21. Effective CIs Distribution by Age and Models

Models	Age				Total (N=150)
	1-5 (N=35)	6-10 (N=27)	11-20 (N=46)	Over 20 (N=42)	
Rational Goal	21 (60.0)	19 (70.4)	29 (63.0)	26 (61.9)	95 (63.3)
Open System	24 (68.6)	23 (85.2)	37 (80.4)	31 (73.8)	115 (76.7)
Human Relations	9(25.7)	10 (37.0)	17 (37.0)	16 (38.1)	52 (34.7)
Internal Process	22 (62.9)	16 (59.3)	28 (60.9)	26 (61.9)	92 (61.3)

Note. Percentage in the parenthesis

According to the marginal means of each age group by models in Figure 5, the 6-9 age group showed higher ranks in three models: rational goal model; open system model; and internal process model. In the case of human relations model, even though the 6-9 age group ranked second highest in efficiency scores, it is very near the over 20 age group.

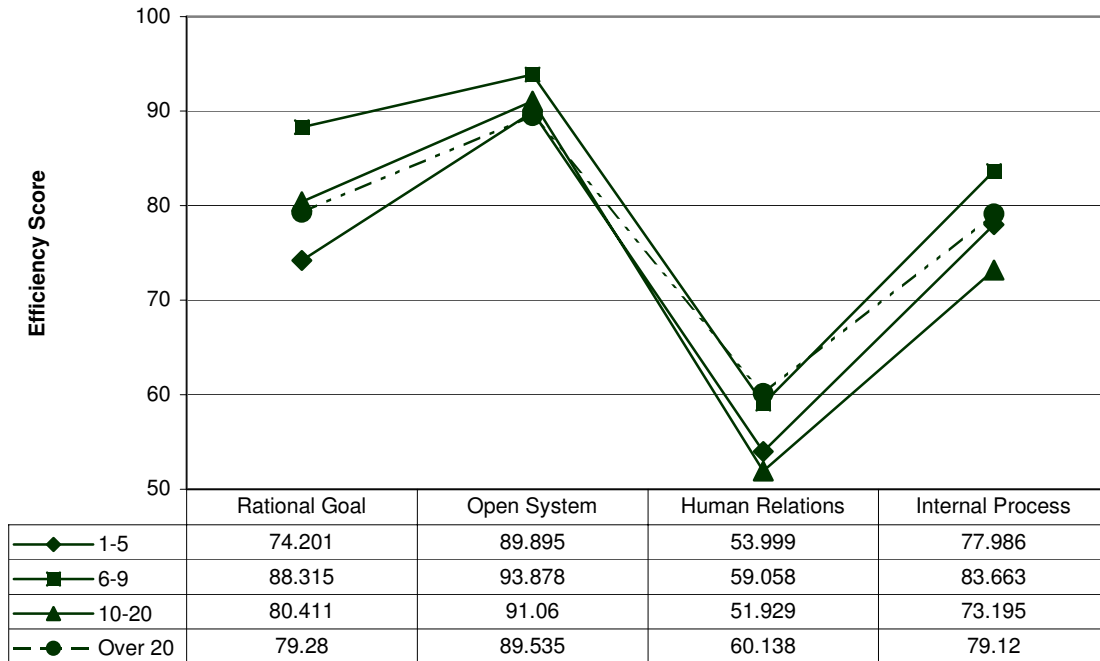


Figure 5. CIs Marginal Efficiency Score Means by Age and Models

Furthermore, the 1-5 age group scores at the 4th rank in rational goal model, and the 3rd rank in the other three models. These results show that even though the score trend by models in terms of age group are the same, changes of age group efficiency score ranks by models make us suspect that age has some influence on organizational effectiveness by models.

Therefore, the influence of age on organizational effectiveness by models was tested by applying the Two-Way ANOVA test. Table 22 shows the results of the Two-Way ANOVA test. The ANOVA results show a valid ($F=7.065$, $P<0.000$) corrected model when age groups and effectiveness models are combined in one model. However, the effect of age group on the effectiveness of the CIs does not seem to be statistically significant ($F=1.462$, $P=0.224$). In addition, the effect of the interaction of effectiveness models and age groups on the effectiveness of CIs was not statistically significant ($F=0.341$, $P=0.961$), either. Therefore, it is possible to say that age, at least as operationalized for this analysis, is not a valid predictor of CIs' organizational effectiveness.

Table 22. Two-Way ANOVA Results for CIs Effectiveness by Age and Models

Source	Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	103,453.202	15	6,896.880	7.065	0.000
Intercept	3,378,668.072	1	3,378,668.072	3,461.019	0.000
MODEL	92,421.368	3	30,807.123	31.558	0.000
AGE	4,282.582	3	1,427.527	1.462	0.224
MODEL * AGE	2,995.637	9	332.849	0.341	0.961
Error	570,104.470	584	976.206		
Total	4,157,115.355	600			
Corrected Total	673,557.672	599			

a. R Squared = .154 (Adjusted R Squared = .132)

Effectiveness Comparison by Discipline

The research CIs in the public universities encompass a wide variety of academic disciplines. Due to the wide spectrum of the research interests by discipline, research outcomes of the research CIs could vary as much as their supporting discipline. One of the compelling research questions of this study is how the paradoxical effectiveness models show the effectiveness of the CIs differently by discipline. This kind of research interest has rarely been answered by related research efforts so far.

To answer the intriguing question about the relationship between discipline and effectiveness models, this study categorized the wide variety of disciplines into five related

areas: Engineering; Natural Applied Science; Natural Basic Science; Social Science; and Interdisciplinary as shown Table 8 (Chap.III, p.58). Table 23 summarizes descriptive statistics of efficiency scores of CIs by models and disciplines.

Table 23. Descriptive CIs Efficiency Score by Disciplines and Models

Model	Discipline	Score Mean	S.D.	N
Rational Goal	Engineering	71.5879	34.84991	19
	Natural Applied	65.2794	35.53682	18
	Natural Basic	89.2789	26.25278	27
	Social Science	87.9026	23.31469	43
	Interdisciplinary	76.3886	30.97130	43
Open System	Engineering	96.4911	15.29515	19
	Natural Applied	89.2322	17.58521	18
	Natural Basic	89.1774	20.20099	27
	Social Science	89.3298	23.10025	43
	Interdisciplinary	91.6695	21.47866	43
Human Relations	Engineering	48.1358	39.31572	19
	Natural Applied	45.8394	38.16690	18
	Natural Basic	56.3126	41.16815	27
	Social Science	61.9905	37.08271	43
	Interdisciplinary	57.5193	40.95865	43
Internal Process	Engineering	68.4721	37.29215	19
	Natural Applied	72.1439	35.86872	18
	Natural Basic	81.7459	27.40277	27
	Social Science	78.7170	32.30593	43
	Interdisciplinary	81.0905	29.48785	43
Overall Score	Engineering	71.1717	36.75731	19
	Natural Applied	68.1238	35.75284	18
	Natural Basic	79.1287	32.33397	27
	Social Science	79.4849	31.27244	43
	Interdisciplinary	76.6670	33.58951	43

According to these statistics, social science reveals the best overall efficiency score among the disciplines, 79.5. This is followed by natural basic science (79.1),

interdisciplinary (76.7), engineering (71.2), and natural applied science (68.1). In addition, it is noted that all disciplines make better efficiency scores in the open system model than any other model, and they get relatively worst scores in the human relations model.

Table 24. Effective CIs Distribution by Discipline and Models

Efficiency Score	Discipline					Total (N=150)
	Engineering (N=19)	Natural Applied Science (N= 18)	Natural Basic Science (N=27)	Social Science (N=43)	Inter-disciplinary (N=43)	
Rational Goal	10 (52.6)	8 (44.4)	21 (77.8)	32 (74.4)	24 (55.8)	95 (63.3)
Open System	18 (94.7)	12 (66.7)	18 (66.7)	35 (81.4)	32 (74.4)	115 (76.7)
Human Relations	6 (15.8)	4 (11.1)	9 (14.8)	16 (44.2)	17 (30.2)	52 (27.3)
Internal Process	8 (42.1)	10 (55.6)	17 (63.0)	28 (65.1)	29 (67.4)	92 (61.3)

Note. Percentage in the parenthesis.

Interestingly, according to the distribution of effective CIs by models as shown Table 24, each discipline has more effective CIs than any other discipline in at least one model except for natural applied science: Engineering in open system model (18 CIs, 94.7%); Natural Basic Science in rational goal model (21 CIs, 77.8%); Social Science in human relations model (16, 44.2%); and Interdisciplinary in internal process model (29, 67.4%). However, we have to note that this result does not necessarily mean that the discipline which holds the greatest number of effective CIs in an effectiveness model is the most effective discipline in the model. For one thing, this percentage statistic does not reveal how far from the efficiency frontier the other CIs within each discipline are located. Secondly, these results are exploratory in the sense that subsequent DEA procedures might employ different inputs and outputs and generate different results.

One could speculate that there are characteristics of these disciplines that partially explain their effectiveness within the four models. For example, it may be that engineering CIs, because of their focus on “real life” projects, must be especially attentive to the political

implications surrounding the funding of applied projects. Regarding the natural basic sciences, it may be that they find it relatively easier to attend to rational goals since, arguably, these sciences have relatively high paradigm consensus and spend little energy arguing about the goals. Finally, because human relations is part of the subject matter of the social sciences, it is not surprising that they are more effective in this model than other disciplines. We must be cautious, however, and note that these are only speculations.

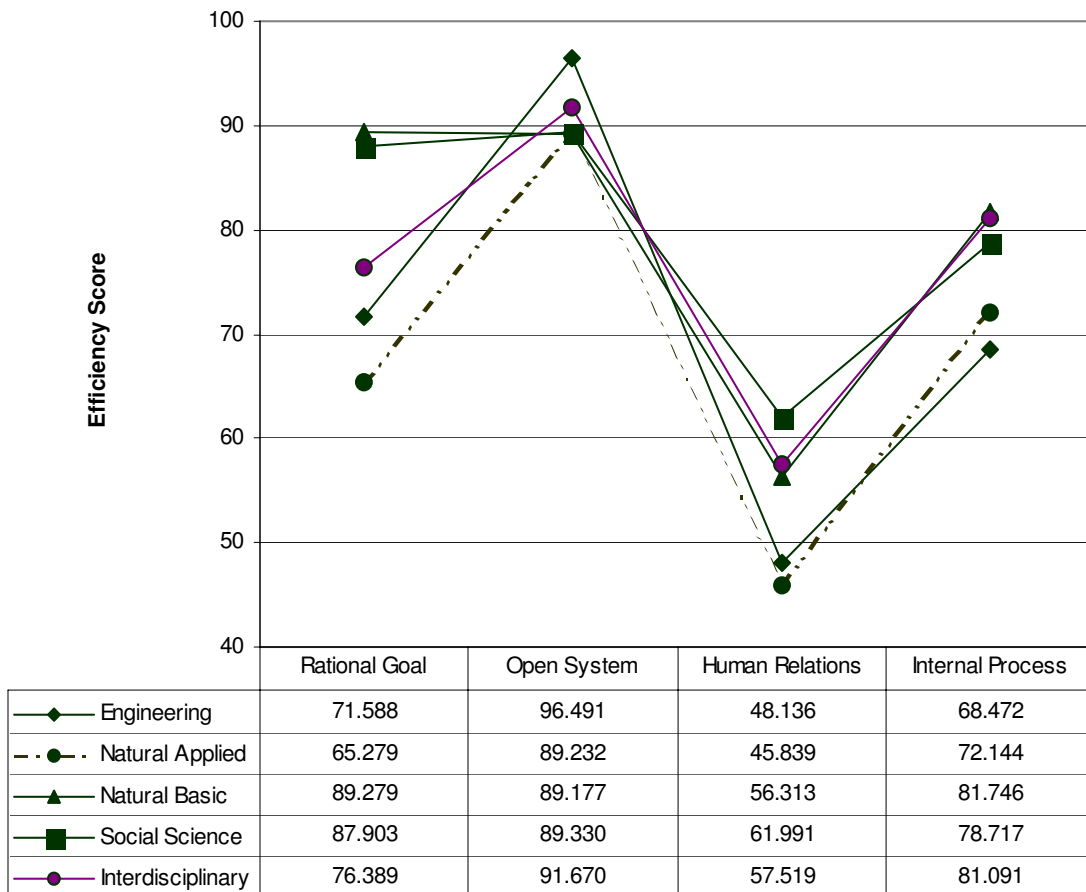


Figure 6. CIs Marginal Efficiency Score Means by Discipline and Models

Figure 6 shows a clearer picture about the efficiency ranks in each model by discipline. According to the marginal means of each discipline by models in Figure 6, efficiency score ranks by discipline and models are similar to the number of effective CIs by each discipline in each of the models, but not the same: Natural Basic Science earns the best efficiency score, 89.3, in the rational goal model; Engineering holds the best efficiency score, 96.5, in the open system model; Social Science makes the best efficiency score, 62.0, in the human relations

model; and Natural Basic Science get the best efficiency score, 81.7, in the internal process model.

Even though the score trends of disciplines by models are likely as shown Figure 6, the variation of the efficiency score ranks make us wonder whether discipline has an effect on efficiency score by models. To answer this question, we analyzed the data using a Two-Way ANOVA test. Table 25 summarizes the result of the ANOVA test.

Table 25. Two-Way ANOVA Results for CIs Effectiveness by Discipline and Models

Source	Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	115,674.565	19	6,088.135	6.329	0.000
Intercept	2,927,095.352	1	2,927,095.352	3,043.138	0.000
MODEL	93,364.660	3	31,121.553	32.355	0.000
DISCIPLI	9,437.694	4	2,359.424	2.453	0.045
MODEL * DISCIPLI	10,061.887	12	838.491	0.872	0.576
Error	557,883.107	580	961.867		
Total	4,157,115.355	600			
Corrected Total	673,557.672	599			

a. R Squared = .172 (Adjusted R Squared = .145)

The validity of this model, which examines the effect of discipline and effectiveness models on DEA efficiency score, turns out to be statistically significant ($F=6.329$, $P<0.001$). Moreover, the effect of discipline on CIs' DEA efficiency score was also statistically significant ($F=2.453$, $P=0.045$). Therefore, it seems to be reasonable not to evaluate CIs without regard to disciplinary field but to evaluate the CIs' efficiency within discipline. However, the effect of interaction of discipline and models turns out not to be statistically significant ($F=0.872$, $P=0.576$). That is, when the effects of discipline and CVF model are combined, they lose their ability to produce distinctively different DEA efficiencies. These results suggest that it is fairer to evaluate CIs against other CIs in their own discipline rather than against all other CIs.

Discussion

Broadly, the research questions of this study could be categorized into three groups:

effectiveness within each model; effectiveness between the models; and effectiveness relative to external factors.

The first category is related to the question: How does each model in the Competing Values Framework (CVF) individually evaluate the effectiveness of organizations?

The second category is related to the question: How does each model evaluate the effectiveness of organizations in the CVF differently?

The third category is related to the question: Is there any difference between the models when they evaluate the effectiveness of organizations by age and discipline?

With regard to the first question, each model justified organizational effectiveness from its own vantage point. For example, the rational goal model focused on generally conceived outcomes of the organizations such as publications, presentations, teaching, and training. The open system model justified organizational effectiveness in terms of attaining research funds from the environment and public services the organizations rendered. The human relations model emphasized learning opportunities by the organizations. The internal process model calls attention to organizations' stability, such as formal work processes.

Related to the first question, each model has its own justified organizational effectiveness, and organizational effectiveness by each model could be defined differently. For example, there is a possibility that an organization identified as effective in one model could be identified as ineffective by the other models. In the second question, we want to see whether this question turns out to be true.

It has been hypothesized, for example, that at different stages in their life cycle, organizations focus on different aspects of their multiple purposes, and this shift in organizational interest could change the effectiveness criteria. In addition, organizations, especially research organizations, have defined their purpose by their interest or discipline, and this diverse disciplinary research interest could differentiate the effectiveness of the organizations. This is part of the third question.

This study produces answers for these questions using various research techniques such as Data Envelopment Analysis (DEA), ANOVA, correlation analysis, and ratio analysis.

Before proceeding with the discussion, effectiveness in this research needs to be defined. As mentioned in chapter two, there is disarray about the definition of effectiveness in academia. Therefore, it is not easy to define effectiveness arbitrarily; however, according to Argyris (1968), we want to justify that an organization is effective to the extent that it accomplishes the core activities with outputs that are greater than the costs, including input costs and internal maintenance costs. The present study is supported by the suggestion of Lewin and Minton (1986) that organizational effectiveness research might integrate models such as CVF and techniques such as DEA. Thus a technique usually conceived as measuring efficiency was used in an expanded way in the present study to measure a more integrated model of effectiveness.

Effectiveness in Each Model

As mentioned above, each model in the CVF has its own perspective in terms of organizational effectiveness. Through comparison between effective CIs and less effective CIs in each model for inputs and outputs, this study reaches a definitive conclusion.

In the rational goal model, effective CIs utilized fewer input resource than the CIs which were shown to be ineffective by the model by a difference of 27.7% to 84.2% (Table 12). From the output side, effective CIs produced more outputs than ineffective CIs by a difference of 118.9% to 395.5%.

The open system model shows similar features to the rational goal model (Table 13). However, in this model effective CIs used more resource than ineffective CIs, with differences in such input categories as FTE administrative and professional (51.4%) and expense (23.7%). Also, effective CIs provided less public service than ineffective CIs (34.2%). However, effective CIs use less resource in many parts of the input category, and, of special importance, they attain more resource from the environment than ineffective CIs by a difference of 73.9% to 905%. It seems that these output achievements essentially draw the line between effective CIs and ineffective CIs in the open system model.

Effective CIs in the human relations model (Table 14) produce much more output than ineffective CIs: in conferences by 314.7%; in workshop by 1,386.3%; and in training by

173.2%. Furthermore they used less input resource in all categories except FTE administrative and professional and paid graduate students. Therefore, it is possible to say that human-relations driven and effective CIs provide their researchers with more education opportunities with less input resource.

In the internal process model (Table 15), we see that effective CIs utilized less resource than ineffective CIs in all input categories. Effective CIs adopted evaluation processes more than ineffective CIs by 142.9% (external evaluation) to 219.4% (internal evaluation). Even though effective CIs employ fewer staff (technical staff 58.8%; support staff 91.3%) than ineffective CIs, their much higher evaluation adoption rate and much lower input resource utilization rate differentiate them from ineffective CIs.

According to the results of this study, the research centers and institutes which are shown to be effective use fewer inputs and produce more outputs in all four different models: rational goal model, open system model, human relations model, and internal process model.

Effectiveness between Models

Fundamentally, each model in the CVF has its own logic and principles regarding organizational effectiveness. Based on these theoretical considerations, researchers evaluate organizational effectiveness from distinctive vantage points. These fundamentally different views justify organizational effectiveness of a particular organization in very different ways. For example, an organization which was defined as effective from one effectiveness model, could be justified as ineffective by other models (refer to Table 17 and Figure 4).

In this study we identified only 25 (16%) of 150 CIs defined as effective from all four different models in the CVF. On the contrary, 84% (125) of the population was validated by one but not all models of the CVF. ANOVA results support this conclusion that the four different models in the CVF assume the effectiveness of individual organizations differently (Table 18). However, we did concurrently find that there is a statistically significant correlation between the human relations model and the rational goal model (Table 19).

The four different models in the CVF, the rational goal model, the open system model, the human relations model, and the internal process model, have their own theoretical

backgrounds and long histories. However, their common goal is to enhance the effectiveness of individual organizations. An organization could place emphasis on one perspective according to its particular time and spatial circumstances. However, if the organization disregards any one perspective on effectiveness, it is likely to cause ineffectiveness in one way or another. This is an important reason why we have to see the organizational effectiveness of an organization from an integrated perspective encompassing all four different effectiveness approaches concomitantly.

Effectiveness by External Factors: Age and Discipline

Effectiveness by age. There are many studies about life cycle and organizational effectiveness (Quinn and Cameron 1983). In short, at different stages in their development organizations place an importance on certain aspects of their multiple facets in terms of structure and process. Such emphases could relate to the relationships among organizational members, productivity of the organization, relationships with the environment, or organizational work processes.

Based on this idea, we examined the age of research CIs relative to effectiveness criteria in the CVF. There is some variation of effectiveness by age in the CVF, but we did not find any statistically significant results (Table 22, Figure 5). We assume that this is attributed to the common characteristics of research CIs such as competence of their members and organizational purpose, none of which are affected by the age of the organization. Basically, research organizations consist of well-educated people who are willing to challenge unexploited research questions spontaneously under clear organizational goals. This leads research CIs to show a comparatively constant shape of organizational effectiveness without regard age of the CIs.

Effectiveness by discipline. Research CIs in universities consist of a variety of disciplines from the natural sciences to the social sciences. It is common knowledge that there are many differences between disciplines, including their respective research areas. However, it seems not to be easy to prove how they are different, and there is not much study about this issue. This study tried to fill this void.

Grouping thirteen different disciplines into five related disciplines (Table 8), this study measured the effect of discipline on the four models in the CVF. The efficiency scores by discipline show some variation, and the ANOVA results show that discipline affects overall organizational effectiveness, but it does not affect effectiveness by models (Table 25, Figure 6). It seems implausible or unfair to measure the comparative effectiveness of engineering research centers and psychology research centers with the same criteria.

This study provides clear evidence for the common sense understanding that comparing engineering and psychology centers is like comparing apples and oranges. Therefore, if we want to measure organizational effectiveness of research institutes and use the findings for decisions about their managements, we need to emphasize within-discipline rather than inter-disciplinary comparisons. This is one important finding of this study.

CHAPTER V: CONCLUSIONS

As a study to explore a new approach to organizational effectiveness, this dissertation focused on research centers and institutes in public universities. Universities and colleges play an essential role in a society through education, research, and public service. In particular, universities and colleges provide society with various useful practical instruments to sustain and develop the society. In these processes, research centers and institutes (CIs) take charge of large portions of the research work conducted by universities and colleges. Therefore, the activities of CIs are an important function of universities and colleges that bridge the gap between classroom and reality so that universities do not remain in the “ivory tower.”

However, the effectiveness of research centers and institutes has been rarely explored. In addition, with enduring resource constraints, increasing demand for performance of public organizations also reaches to the question of the effectiveness of research organizations in higher educations. Specifically, since 2003, Florida has conducted a 3-year cycle performance review of research CIs in the public universities. This study tried to find a new way, therefore, of evaluating organizational effectiveness to fulfill this practical purpose and with an academic purpose to contribute to organizational effectiveness theory building through empirical illustration.

A Hybrid Approach to Evaluate Organizational Effectiveness

Organizational effectiveness has been a central topic in the study of profit, not-for-profit, and public organizations. Therefore, organizational effectiveness is an intriguing subject to organization theorists and practitioners. In particular, it is a subject of lasting interest in the fields of organizational studies and management science. There are nearly as many theoretical approaches as there are interests in effectiveness. The width of the scope of

organizational effectiveness discussion causes controversy, confusion, and ambiguity on the subject. The plethora of organization theories creates conceptual confusion and methodological disarray in the field of organizational studies. The only consensus on organizational effectiveness is that there is no consensus in organizational effectiveness. Perhaps consensus regarding definition, the set of indicators, and a theory of organizational effectiveness could not possibly be reached in light of the breadth of scope of interest of scholars and practitioners.

As Cameron and Whetton (1983b) declared, “No one approach to effectiveness is inherently superior to another” (p.3), and they suggested (1983c) developing a framework for assessing effectiveness rather than to develop theories of effectiveness. Therefore, this study explores a third way to integrate different theories about organizational effectiveness and a method to measure the effectiveness that contributes to developing a framework for assessing organizational effectiveness.

Among a variety of effectiveness theories, the competing values framework (CVF) supports the idea that there can not be a universal model of organizational effectiveness in that the representative effectiveness models, such as rational goal approach and systems approach, interrelate and culminate in the competing values approach which integrates diversity of organizational effectiveness constructs in one framework.

Based upon the framework of the competing values approach, this research explores how to measure effectiveness empirically. It is important to specify variables to conduct empirical organizational effectiveness studies. It is not easy to create general justification for a variable whether it is one type or another in that an input variable in one context may be an output variable in another context. As Lewin and Minton said (1986), “It is clearly an empirical question whether specific organizational settings are more appropriate for certain organizational effectiveness criteria” (p.524). They also argued that empirical support for such relationships would provide the basis for externally validating any organizational effectiveness theory. Therefore, this study has provided empirical support for the external validity of the competing values framework by operationalizing specific effectiveness criteria with hard data.

From the practical and academic pursuit of a third way to approach organizational effectiveness, this study found a new way to measure the research CIs' effectiveness by combining an integrated theoretical framework, competing values framework (CVF), and a prominent measurement method, Data Envelopment Analysis (DEA). Following this third way, this study answered several important theoretical and practical inquiries.

First, four different effectiveness models, the rational goal model, the open system model, the human relations model, and internal process model, in the CVF have their own theoretical foundations. Therefore, they have justified organizational effectiveness from their specific perspectives. In this study, for example, 85% of research CIs' effectiveness have been judged differently by the four different models. According to Cameron (1986), due to the theoretical confusion and ambiguity of effectiveness, evaluators of effectiveness often select models and criteria arbitrarily in their assessments. This study shows that if the evaluators choose one of the models in the CVF, s/he reaches totally different conclusions about organizational effectiveness. In addition, a statistically significant relationship between the human relations models and the rational goal model shows a facet of the advantage of theoretical integration of effectiveness models. Therefore, if one wants to get a balanced opinion about effectiveness of certain organizations, he or she needs to integrate different perspectives concomitantly.

Second, since research CIs in the universities encompass various academic disciplines from engineering to education, evaluators who want to measure the effectiveness of research CIs in the universities should consider evaluating their effectiveness by academic discipline. We assumed that there are differences between academic disciplines. However, there have not been many studies to examine the differences with hard data. In this study, organizational effectiveness of research CIs in Florida's universities appears to be different depending on academic discipline, even though there was not statistically significant interaction between the CVF effectiveness models and disciplines. Therefore, evaluators and managers who attend to centers for various disciplines at the same time would be well served to make comparisons within disciplines and avoid making them across disciplines.

Third, research CIs in the public universities produce various outcomes encompassing

research activities, public service, instruction, and training using diverse resources such as financial and human inputs. Moreover, these various inputs and outputs are mixed in the different effectiveness models in the CVF, and this complexity makes it difficult to measure the effectiveness of research CIs. The advantage of DEA, which manages these multiple resources and multiple outcomes, allows this study to be possible. As Lewin and Minton (1986) argued, despite the aforementioned limitations such as number of inputs and outputs and no capability to measure errors, DEA turns out to be potentially useful to measure the organizational effectiveness, at least from the limited setting of this study.

Fourth, in a practical stance, the results of this research provide a different and integrated perspective of effectiveness for the various constituencies around the research CIs such as university administrators, legislators, directors of the CIs, and researchers. In particular, this result provides specific guidelines for enhancing effectiveness for those research CIs which were judged as ineffective in the model setting (Appendix F).

In this study, organizational effectiveness was specifically characterized as human relations within the organization, relationships with the environment, work process, and productivity. Furthermore, each model in the competing values framework has been shown to support those different values. This suggests that a certain organizational setting might be more prominently associated with certain organizational characteristics rather than others. This study provides further evidence that there is no universal effectiveness model in organization studies.

As a practical outcome of this study, research CIs in the Florida State University System are proven to be comparatively more open system driven. In addition, they are relatively effective from the perspective of the rational goal model. In fact, on which perspective we place a priority from among the four effectiveness models totally depends on decision makers' value judgment based on considerations about organizational circumstances. Therefore, it is the responsibility of decision makers to interpret and to utilize the results of this study. In addition, it is to be noted that these results can be used as diagnostic indicators of CIs' relative effectiveness.

Results of any DEA should always be used in a cautious manner. CIs are very

different in their missions and purposes, and are, therefore, an example of organizational form for which it is difficult to quantify relative contributions. Decision makers must contribute a careful qualitative assessment of the general societal impact of individual CIs rather than hastily discounting and eliminating CIs that do not initially reach the efficient frontier for the selected inputs and outputs.

To summarize the practical contribution, decision makers who broadly oversee university research CIs should especially heed following conclusions.

- Within each model of the Competing Values Framework, this study illustrates definitive levels of specific inputs and outputs that can be adjusted to maximize effectiveness among similar types of CIs.
- Evaluating CIs' organizational effectiveness based on one model such as the traditional rational goal model is likely to provide distorted information as to the subject organizations. Therefore, applying a multiple perspective such as the CVF is a better way to evaluate organizational effectiveness.
- To evaluate various disciplines supporting CIs at the same time is to evaluate apples and oranges. This study illustrates that managers should evaluate CIs within the same discipline rather than against all other CIs.
- DEA is a useful diagnostic tool to identify the frontier for best practices emulation by CIs, but other qualitative methods should be used to provide additional nuanced feedback that explains some details that the quantitative analysis alone cannot provide.

Research Limitations and Extensions

Organizational effectiveness shows soundness of an organization's process and structure in terms of performance. The purpose of evaluating organizational effectiveness is to diagnose the present soundness of organizations and to stimulate or enhance the performance of the organizations based on the diagnostic findings. In addition, if one could know the organization's position compared to the peer group in the same professional area, this would be more helpful to define its goals in the near future than an evaluation based solely

on self-appraisal.

It should be noted that the analysis in this study used data that had not been collected for measuring the Competing Values Framework. That is, the existing data resulted in underspecified models for the four dimensions in that they were unable to capture the four models of the CVF precisely. However, the results show the ability of the CVF to discriminate performance on the four models. Therefore, a more fully specified model and survey questionnaire designed specifically to capture the four models should yield even stronger results, and, therefore, suggest the viability of the CVF. In addition, this study did not find statistically significant results of the impact of age on the effectiveness of CIs. However, the results make us suspect age has an influence on organizational effectiveness. Thus, more thorough research based on more specified data would be suggested to find the influence of age on the effectiveness of CIs.

Evaluation of organizational effectiveness is generally assumed to be a part of a broad set of organization management or organization development tools. As a matter of fact, various organization development (OD) tools start from diagnosing the state of the organization, and go further to system management (French and Bell 1999). Furthermore, one current popular management system, “the Balanced Scorecard,” which use a similar to the CVF approach, evolved from organizational performance measurement techniques (Kaplan and Norton 1996). Therefore, if this approach we used in this study were used in a broader scope of management areas, this would be another benefit of this study.

The organizational effectiveness measurement approach this study used is a combined tool of a prominent theory in the organizational effectiveness field, “the competing values framework (CVF)” and a new operational research tool to optimize resource allocation, “data envelopment analysis (DEA).” This combined method, fortunately, has a lot of potential to broaden its scope to alternative management tools which could be applicable to all organizational forms from private to public.

Compared to other management tools, the approach this study used has several advantages. First, this approach could be used within a relatively short time frame. In contrast, many management approaches advise spending several years to design appropriate

management tools. Second, this approach could be used to compare the effectiveness of many similar organizations in the same fields simultaneously. Most management tools focus on one organization rather than provide comparisons, moreover, this approach is available to compare extensive peer groups. For example, this study dealt with 150 research CIs. Therefore, the approach in this study might be more helpful to people who direct many similar organizational units within one authority. Third, this approach automatically provides clear strategy with hard data to improve the effectiveness of subject organizations (refer to Appendix F). Many management tools recommend extensive interviews with various levels of employees in organizations. Based on the data, consultants have to interpret those data with various time-consuming procedures. The approach used in this study provides recommendations with hard data. However, this approach is not a substitute for interviews and other qualitative data, but it is a rigorous supplement to such approaches. This is another possible benefit of the approach in this study. Fourth, this approach has comparatively firm theoretical foundations. As already shown, the four models in the competing values framework, the rational goal model, the open system model, the human relations model, and the internal process model, have long and rich theoretical backgrounds that parallel the broader field of organization theory. In addition, DEA has been widely applied to various organizations and disciplines.

These points show the potential of this study as a better organizational evaluation method as well as an alternative and supplement to existing organization management tools. This study expounds the possibility of a new approach with data envelopment analysis based on the competing values framework. In addition, this approach has potential to broaden its scope as an alternative to existing organizational management tools. To further those advances it needs to be supported with subsequent studies on this issue by other scholars and practitioners who are well acquainted with the theory and methodology. It is expected that many empirical studies will follow this study to enrich the field of organizational effectiveness.

APPENDIX A: EFFICIENCY SCORE CHANGES

Efficiency Score Changes: in case of Adding No Faculty 13 CIs into the Data Set

Percentage Changes in the Efficiency Scores (%)	Rational Goal	Open System	Human Relations	Internal Process
Less than 10	111	145	118	134
10-19	11	2	7	9
20-29	4	-	3	3
30-39	4	1	3	1
40-49	5	1	5	-
50-59	4	-	3	-
60-69	4	-	3	-
70-79	-	-	1	-
80-89	-	-	1	-
90-99	-	-	1	1
Average Change	13.62%	9.36%	9.97%	14.15%
Status change DMUs	12 (6.2%)	3 (1.5%)	3 (1.5%)	8 (4.1%)

APPENDIX B: EFFICIENCY SCORE DISTRIBUTION BY MODELS

Rational Goal Model

Efficiency Score	Number of DMUs	Percentage
Less than 10	2	1.3
10-19	8	5.3
20-29	5	3.3
30-39	9	6.0
40-49	9	6.0
50-59	7	4.7
60-69	4	2.7
70-79	4	2.7
80-89	4	2.7
90-99	3	2.0
100	95	63.3
Average Score	80.1	

Open System Model

Efficiency Score	Number of DMUs	Percentage
Less than 10	1	0.7
10-19	-	-
20-29	-	-
30-39	11	7.3
40-49	2	1.3
50-59	3	2.0
60-69	4	2.7
70-79	2	1.3
80-89	6	4.0
90-99	6	4.0
100	115	76.7
Average Score	90.9	

Human Relations Model

Efficiency Score	Number of DMUs	Percentage
Less than 10	23	15.3
10-19	18	12.0
20-29	12	8.0
30-39	9	6.0
40-49	9	6.0
50-59	4	2.7
60-69	9	6.0
70-79	5	3.3
80-89	1	0.7
90-99	8	5.3
100	52	34.7
Average Score	56.0	

Internal Process Model

Efficiency Score	Number of DMUs	Percentage
Less than 10	3	2.0
10-19	10	6.7
20-29	7	4.7
30-39	5	3.3
40-49	11	7.3
50-59	8	5.3
60-69	7	4.7
70-79	3	2.0
80-89	2	1.3
90-99	2	1.3
100	92	61.3
Average Score	77.9	

APPENDIX C: EFFICIENCY SCORES BY AGE AND MODELS

Rational Goal Model

Efficiency Score	Age				Total
	1-5	6-10	11-20	Over 20	
Less than 10	1	0	1	0	2
10-19	2	0	2	4	8
20-29	2	1	1	1	5
30-39	4	1	1	3	9
40-49	2	1	5	1	9
50-59	1	1	2	3	7
60-69	1	1	2	0	4
70-79	1	0	1	2	4
80-89	0	2	1	1	4
90-99	0	1	1	1	3
100	21	19	29	26	95
Total	35	27	46	42	150
Percentage of Efficient DMUs	60.0%	70.4%	63.0%	61.9%	63.3%

Open System Model

Efficiency Score	Age				Total
	1-5	6-10	11-20	Over 20	
Less than 10	0	0	1	0	1
10-19	-	-	-	-	-
20-29	-	-	-	-	-
30-39	4	2	3	2	11
40-49	0	0	1	1	2
50-59	0	0	0	3	3
60-69	1	0	1	2	4
70-79	0	1	1	0	2
80-89	3	0	0	3	6
90-99	3	1	2	0	6

100	24	23	37	31	115
Total	35	27	46	42	150
Percentage of Efficient DMUs	68.6%	85.2%	80.4%	73.8%	76.7%

Human Relations Model

Efficiency Score	Age				Total
	1-5	6-10	11-20	Over 20	
Less than 10	6	4	8	5	23
10-19	2	3	8	5	18
20-29	3	4	2	3	12
30-39	5	0	3	1	9
40-49	3	2	1	3	9
50-59	0	0	2	2	4
60-69	1	1	2	5	9
70-79	3	1	0	1	5
80-89	0	0	0	1	1
90-99	3	2	3	0	8
100	9	10	17	16	52
Total	35	27	46	42	150
Percentage of Efficient DMUs	25.7%	37.0%	37.0%	38.1%	34.7%

Internal Process Model

Efficiency Score	Age				Total
	1-5	6-10	11-20	Over 20	
Less than 10	1	0	2	0	3
10-19	2	0	4	4	10
20-29	0	1	3	3	7
30-39	2	0	3	0	5
40-49	3	2	3	3	11
50-59	4	3	1	0	8
60-69	1	1	2	3	7
70-79	0	3	0	0	3

80-89	0	0	0	2	2
90-99	0	1	0	1	2
100	22	16	28	26	92
Total	35	27	46	42	150
Percentage of Efficient DMUs	62.9%	59.3%	60.9%	61.9%	61.3%

Estimated Marginal Means by Age

Model	Age	Mean	Std. Error	95% Confidence Interval	
				Lower bound	Upper bound
Rational Goal	1-5	74.201	5.281	63.829	84.574
	6-9	88.315	6.013	76.506	100.125
	10-20	80.411	4.607	71.364	89.459
	Over 20	79.280	4.821	69.811	88.749
Open System	1-5	89.895	5.281	79.523	100.268
	6-9	93.878	6.013	82.068	105.688
	10-20	91.060	4.607	82.012	100.108
	Over 20	89.535	4.821	80.066	99.004
Human Relations	1-5	53.999	5.281	43.626	64.371
	6-9	59.058	6.013	47.248	70.867
	10-20	51.929	4.607	42.882	60.977
	Over 20	60.138	4.821	50.669	69.607
Internal Process	1-5	77.986	5.281	67.614	88.359
	6-9	83.663	6.013	71.853	95.472
	10-20	73.195	4.607	64.147	82.242
	Over 20	79.120	4.821	69.652	88.589

APPENDIX D: EFFICIENCY SCORES BY DISCIPLINE AND MODELS

Rational Goal Model

Efficiency Score	Discipline					Total
	Engineering	Natural Applied Science	Natural Basic Science	Social Science	Inter-disciplinary	
Less than 10	0	0	1	0	1	2
10-19	3	3	1	1	0	8
20-29	0	1	0	0	4	5
30-39	2	3	1	0	3	9
40-49	1	0	0	5	3	9
50-59	0	1	0	2	4	7
60-69	2	1	0	1	0	4
70-79	1	1	1	0	1	4
80-89	0	0	1	1	2	4
90-99	0	0	1	1	1	3
100	10	8	21	32	24	95
Total	19	18	27	43	43	150
Percent of Efficient DMUs	52.6%	44.4%	77.8%	74.4%	55.8%	63.3%

Open System Model

Efficiency Score	Discipline					Total
	Engineering	Natural Applied Science	Natural Basic Science	Social Science	Inter-disciplinary	
Less than 10	0	0	1	0	1	2
10-19	-	-	-	-	-	-

20-29	-	-	-	-	-	-
30-39	1	0	2	5	3	11
40-49	0	1	0	1	0	2
50-59	0	1	1	1	0	3
60-69	0	2	1	1	0	4
70-79	0	0	1	0	1	2
80-89	0	2	2	0	2	6
90-99	0	0	2	0	4	6
100	18	12	18	35	32	115
Total	19	18	27	43	43	150
Percent of Efficient DMUs	94.7%	66.7%	66.7%	81.4%	74.4%	76.7%

Human Relations Model

Efficiency Score	Discipline					Total
	Engineering	Natural Applied Science	Natural Basic Science	Social Science	Inter-disciplinary	
Less than 10	4	4	6	3	6	23
10-19	1	3	2	5	7	18
20-29	4	2	1	2	3	12
30-39	1	0	1	5	2	9
40-49	2	2	3	0	2	9
50-59	1	0	0	3	0	4
60-69	0	1	2	4	2	9
70-79	0	1	1	2	1	5
80-89	0	1	0	0	0	1
90-99	0	0	2	3	3	8
100	6	4	9	16	17	52
Total	19	18	27	43	43	150
Percent of Efficient DMUs	31.6%	22.2%	33.3%	37.2%	39.5%	34.7%

Internal Process Model

Efficiency Score	Discipline					Total
	Engineering	Natural Applied Science	Natural Basic Science	Social Science	Inter-disciplinary	
Less than 10	1	0	0	1	1	3
10-19	2	2	2	3	1	10
20-29	2	2	0	1	2	7
30-39	0	1	0	2	2	5
40-49	2	1	1	4	3	11
50-59	1	1	3	1	2	8
60-69	0	0	2	2	3	7
70-79	1	0	2	0	0	3
80-89	0	1	0	1	0	2
90-99	2	0	0	0	0	2
100	8	10	17	28	29	92
Total	19	18	27	43	43	150
Percent of Efficient DMUs	42.1%	55.6%	63.0%	65.1%	67.4%	61.3%

Estimated Marginal Means by Discipline

Model	Discipline	Mean	Std. Error	95% Confidence Interval	
				Lower bound	Upper bound
Rational Goal	Engineering	71.588	7.115	57.613	85.562
	Natural Applied	65.279	7.310	50.922	79.637
	Natural Basic	89.279	5.969	77.556	101.002
	Social Science	87.903	4.730	78.613	97.192
	Interdisciplinary	76.389	4.730	67.099	85.678
Open System	Engineering	96.491	7.115	82.517	110.466
	Natural Applied	89.232	7.310	74.875	103.590
	Natural Basic	89.177	5.969	77.455	100.900
	Social Science	89.330	4.730	80.041	98.619

	Interdisciplinary	91.670	4.730	82.380	100.959
Human	Engineering	48.136	7.115	34.161	62.110
Relations	Natural Applied	45.839	7.310	31.482	60.197
	Natural Basic	56.313	5.969	44.590	68.035
	Social Science	61.990	4.730	52.701	71.280
	Interdisciplinary	57.519	4.730	48.230	66.809
Internal	Engineering	68.472	7.115	54.498	82.447
Process	Natural Applied	72.144	7.310	57.786	86.501
	Natural Basic	81.746	5.969	70.023	93.469
	Social Science	78.717	4.730	69.428	88.006
	Interdisciplinary	81.090	4.730	71.801	90.380

APPENDIX E: EFFICIENCY SCORES OF CIs BY MODELS

CIs	Rational Goal	Open System	Human Relations	Internal Process
1098901	13.25	100	0.04	100
1159613	100	100	16.06	54.41
1179412	100	33.33	4.61	100
1189613	100	100	100	100
1319913	53.71	100	20.68	100
1340012	100	39.72	100	56.94
1378401	100	100	100	0.12
1419507	100	100	100	100
1427101	100	100	28.97	100
1439007	100	100	0.03	100
1479302	100	100	100	76.34
1596812	97.36	100	4.88	45.57
1669702	100	100	0	100
1728710	100	100	100	32.13
1739510	100	100	9.94	100
1749407	93.39	100	100	71.8
1759812	100	100	93.9	100
1919601	100	100	100	98.89
1947701	13.27	100	11.66	100
2169212	100	100	24.99	100
2210013	100	100	100	100
2228213	52.8	100	6.11	100
2239813	26.88	100	41.08	100
2257810	100	100	100	100
2309301	40.95	100	21.81	73.17
2329707	100	100	100	100
2449907	0.96	100	0.96	53.56
2458401	100	100	42.23	49.07

2559712	100	100	100	33.39
2619113	100	100	100	100
2648013	100	100	100	100
2689901	38.45	100	38.42	10.37
2698813	100	100	18.78	100
2718813	100	100	19.92	100
2817510	100	100	62.03	100
3027804	19.61	100	19.61	100
3098713	92.51	100	8.18	100
3240112	43.39	33.33	37.2	65.4
3289405	62.94	100	41.19	100
3298013	100	100	36.19	22.55
3408910	46.18	100	31.15	100
3419912	100	100	9.63	40.04
3490113	30.01	33.33	30.01	57.89
3527212	100	100	58.22	100
3578803	77.44	100	5.21	100
3582912	40.01	100	11.04	60.66
3598607	100	100	100	53.73
3828413	7.38	3.67	2.24	100
3837705	100	86.75	100	27.28
3846502	39.48	100	62.87	100
3858502	100	100	100	100
3879013	100	100	22.27	42.96
3898001	100	100	100	21.42
3930113	100	100	100	100
4029713	100	100	100	7.99
4038011	100	50	64.79	88.58
4049907	100	33.88	95.98	100
4068112	80.62	100	100	100
4138613	100	100	100	100
4160107	100	91.49	0.39	100
4199308	100	100	92.64	40.11
4286213	23.66	100	5.15	42.49
4498210	100	100	100	100
4557407	18.6	60.89	1.14	62.46

4579813	100	99.99	100	100
4597907	77.67	53.94	12.56	66.38
4669509	100	100	100	100
4687712	100	100	100	100
4716910	52.52	100	65.46	100
4727913	72.74	100	100	100
4769713	28.87	100	66.14	100
4779413	100	93.77	96.15	100
4809007	100	90.44	60.45	12.69
4868913	100	100	100	100
5050113	100	90.09	100	100
5107303	100	100	100	10.36
5125307	100	100	47.08	100
5156212	100	100	100	100
5188713	21.64	91.56	11.83	43.61
5209912	100	100	12.28	45.8
5217203	55.25	54.02	20.6	100
5319301	100	100	29.49	49.47
5338012	100	67.73	100	100
5368613	100	100	95.11	100
5389113	42.82	77.21	29.37	61.47
5448103	31.56	100	3.64	89.03
5458205	16.06	69.28	10.45	21.56
5476702	100	81.99	46.64	16.63
5538612	43.83	100	16.28	18.85
5547401	100	100	2.43	95.12
5557203	100	100	62.62	100
5597313	100	85.48	100	100
5619507	100	100	100	100
5637806	37.47	49.09	23.59	100
5659805	100	100	100	39.75
5678613	33.35	100	13.2	100
5718701	100	33.33	100	100
5798702	100	100	100	100
5849609	100	33.33	75.03	53.44
5939210	54.99	100	13.83	100

5987403	100	100	80.34	16.24
6007912	18.5	100	75.23	43.95
6059710	61.23	100	30.01	100
6170110	100	100	75.13	100
6338013	51.45	100	100	100
6369713	40.29	100	3.39	100
6379407	100	74.28	20	100
6389912	100	100	37.11	100
6399403	28.13	100	17.74	100
6459913	37.69	100	76.11	100
6528613	100	100	67.64	38.04
6538512	100	100	58.77	14.51
6558513	80.36	37.01	19.84	14.23
6618412	100	100	6.58	100
6709903	12.22	81.15	7.22	44.22
6760003	100	65.89	79.89	100
6819503	100	100	47.06	100
6838709	100	100	31.55	100
6860007	100	87.55	14.18	100
6908513	41.12	100	7.58	27.66
6929710	100	100	97.09	100
6939503	100	100	100	100
6967112	100	100	100	14.34
6988410	100	100	94.08	100
7017610	100	34.11	13.11	100
7028213	58.1	39.77	14.23	37.93
7089612	100	100	68.21	24.59
7118710	100	100	100	100
7127509	100	100	49.08	100
7157913	100	100	100	100
7168510	41.18	100	33.18	100
7209313	89.33	100	100	66.52
7218712	100	100	100	0.08
7269601	100	100	100	100
7279101	62.04	100	1.81	100
7339013	100	100	2.75	100

7378610	100	100	100	100
7409901	34.24	100	25.39	100
7449607	80.43	100	9.86	100
7468813	100	100	100	100
7538413	100	100	100	69.14
7549506	34.35	100	5.95	50.15
7578401	68.86	100	57.89	29.15
7719901	76.12	100	46.97	15.8
7725112	100	36.47	56.86	100
7938012	100	100	100	100
8017501	100	100	100	100
8029901	12.99	100	7.47	58.37
8048512	100	46.47	100	100
8069913	100	89.91	43.32	100

APPENDIX F: STRATEGY TO BE EFFECTIVE FOR LESS EFFECTIVE CIs
BY MODELS²¹

Output Variables (16):

- Total number of publications produced (PUBLICA)
- Total number presentations made (PRESENT)
- Total number of public services rendered (PUBSERVI)
- Total number of patents and copyrights issued (COPYRIGH)
- Total number of courses taught (TEACHING)
- Total number of trainees (unpaid students)
- Total number of external evaluations (EXTERNAL)
- Internal evaluation (Dummy Variable; SELFEVAL)
- Total number of Full-time Equivalent (FTE) administrative and professional staff (FTEANDP)
- Total number of FTE technical staff (FTETECHS)
- Total number of FTE support staff (FTESUPPO)
- Total amount of contract and grant (C&G; CG_TOTAL; \$)
- Total amount of fees (FEES_TOT; \$)
- Total amount of private funds (PRIVTOTX; \$)
- Total number of conference (CONFEREN)
- Total number of workshop (WORKSHOP)

Input Variables (11):

Personnel (7)

- Total number of FTE faculty (FTEFACUL)
- Total number of FTE post-docs (FTEPOSTD)
- Total number of FTE administrative and professional staff (FTEANDP)
- Total number of FTE technical staff (FTETECHS)
- Total number of FTE support staff (FTESUPPO)
- Total number of graduate student (PAIDGRAD)

²¹ Contract and grant, fees, private funds, faculty salary, and OPS are divided by 1,000, and expense and OCO are divided by 100.

- Total number of undergraduate student (PAIDUNDE) Expenditures (4)
- Total amount of FTE salary (TOTAL_SA; \$)
- Total amount of other personnel service (OPS; TOT_OPS; \$)
- Total amount of expense category (TOTAL_EX; \$)
- Total amount of operating capital outlay (OCO; TOTAL_OC; \$)

Rational Goal Model

97.36%

1596812

	Actual:	Target:	Potential improvement:
FTEFACUL	7.00	3.06	-56.26%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	0.00	0.00	00.00%
FTETECHS	0.00	0.00	00.00%
FTESUPPO	2.50	1.71	-31.61%
PAIDGRAD	3.00	3.00	00.00%
PAIDUNDE	2.00	2.00	00.00%
PUBLICA	15.00	26.79	78.58%
PRESENT	26.00	26.70	02.71%
COPYRIGH	0.00	0.00	00.00%
TEACHING	26.00	26.70	02.71%
TRAINING	3.00	3.08	02.71%
TOTAL_SA	334.21	166.92	-50.06%
TOT_OPS	205.54	85.68	-58.32%
TOTAL_EX	8561.67	2499.43	-70.81%
TOTAL_OC	84.79	4.37	-94.84%

93.39%

1749407

	Actual:	Target:	Potential improvement:
FTEFACUL	3.00	3.00	00.00%
FTEPOSTD	1.00	0.00	-99.90%
FTEANDP	2.00	0.38	-81.02%
FTETECHS	0.00	0.00	00.00%
FTESUPPO	1.00	1.00	00.00%
PAIDGRAD	2.00	2.00	00.00%
PAIDUNDE	0.00	0.00	00.00%
PUBLICA	12.00	12.85	07.08%
PRESENT	9.00	9.64	07.08%
COPYRIGH	0.00	0.00	00.00%
TEACHING	1.00	5.45	445.41%
TRAINING	2.00	2.14	07.08%

TOTAL_SA	250.55	86.50	-65.48%
TOT_OPS	27.84	17.39	-37.54%
TOTAL_EX	2008.70	394.18	-80.38%
TOTAL_OC	10.67	0.00	-99.99%

92.51% **3098713**

	Actual:	Target:	Potential improvement:
FTEFACUL	3.00	2.41	-19.75%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	2.00	1.66	-17.05%
FTETECHS	2.50	0.37	-85.23%
FTESUPPO	5.50	1.53	-72.11%
PAIDGRAD	5.00	3.21	-35.80%
PAIDUNDE	2.00	2.00	00.00%
PUBLICA	29.00	31.35	08.09%
PRESENT	19.00	23.87	25.61%
COPYRIGH	1.00	1.08	08.09%
TEACHING	8.00	8.65	08.09%
TRAINING	5.00	5.40	08.09%
TOTAL_SA	302.14	192.26	-36.37%
TOT_OPS	229.22	68.26	-70.22%
TOTAL_EX	1044.47	1044.47	00.00%
TOTAL_OC	23.11	23.11	00.00%

89.33% **7209313**

	Actual:	Target:	Potential improvement:
FTEFACUL	0.50	0.50	00.00%
FTEPOSTD	0.00	0.00	-24.84%
FTEANDP	0.00	0.00	00.00%
FTETECHS	0.00	0.00	00.00%
FTESUPPO	0.50	0.50	00.00%
PAIDGRAD	0.00	0.00	00.00%
PAIDUNDE	0.00	0.00	00.00%
PUBLICA	4.00	4.48	11.94%
PRESENT	2.00	2.24	11.94%
COPYRIGH	0.00	0.00	11.94%
TEACHING	2.00	2.24	11.94%
TRAINING	0.00	0.02	1788.73%
TOTAL_SA	71.76	42.10	-41.32%
TOT_OPS	59.43	14.53	-75.55%
TOTAL_EX	1729.99	92.72	-94.64%
TOTAL_OC	81.83	0.09	-99.89%

80.62% **4068112**

	Actual:	Target:	Potential improvement:
--	----------------	----------------	-------------------------------

FTEFACUL	2.00	2.00	00.00%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	11.00	0.05	-99.55%
FTETECHS	1.50	0.10	-93.38%
FTESUPPO	0.00	0.00	00.00%
PAIDGRAD	4.00	4.00	00.00%
PAIDUNDE	1.00	1.00	00.00%
PUBLICA	14.00	17.36	24.04%
PRESENT	6.00	8.17	36.22%
COPYRIGH	0.00	0.07	7046.66%
TEACHING	7.00	14.47	106.75%
TRAINING	4.00	4.96	24.04%
TOTAL_SA	72.69	39.56	-45.58%
TOT_OPS	118.16	41.36	-65.00%
TOTAL_EX	1190.83	80.01	-93.28%
TOTAL_OC	28.57	2.82	-90.12%

80.43%

7449607

	Actual:	Target:	Potential improvement:
FTEFACUL	27.00	2.73	-89.91%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	11.00	1.34	-87.80%
FTETECHS	0.00	0.00	00.00%
FTESUPPO	15.00	1.04	-93.09%
PAIDGRAD	4.00	4.00	00.00%
PAIDUNDE	2.00	2.00	00.00%
PUBLICA	38.00	47.25	24.33%
PRESENT	50.00	62.17	24.33%
COPYRIGH	0.00	0.00	24.33%
TEACHING	4.00	4.97	24.33%
TRAINING	4.00	4.97	24.33%
TOTAL_SA	2769.87	106.68	-96.15%
TOT_OPS	415.17	72.56	-82.52%
TOTAL_EX	32408.17	1318.02	-95.93%
TOTAL_OC	470.60	60.75	-87.09%

80.36%

6558513

	Actual:	Target:	Potential improvement:
FTEFACUL	13.00	13.00	00.00%
FTEPOSTD	7.00	2.98	-57.38%
FTEANDP	1.00	1.00	00.00%
FTETECHS	2.00	0.24	-88.24%
FTESUPPO	2.00	2.00	00.00%
PAIDGRAD	36.00	36.00	00.00%
PAIDUNDE	4.00	4.00	00.00%
PUBLICA	94.00	116.98	24.45%

PRESENT	123.00	153.07	24.45%
COPYRIGH	2.00	2.49	24.45%
TEACHING	39.00	84.19	115.87%
TRAINING	36.00	44.80	24.45%
TOTAL_SA	456.72	456.72	00.00%
TOT_OPS	494.15	319.39	-35.37%
TOTAL_EX	4155.25	2949.74	-29.01%
TOTAL_OC	5545.81	1252.17	-77.42%

77.67%

4597907

	Actual:	Target:	Potential improvement:
FTEFACUL	3.00	3.00	00.00%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	1.50	0.64	-57.22%
FTETECHS	2.50	0.29	-88.26%
FTESUPPO	1.00	1.00	00.00%
PAIDGRAD	3.00	2.92	-02.58%
PAIDUNDE	3.00	3.00	00.00%
PUBLICA	32.00	41.20	28.74%
PRESENT	69.00	88.83	28.74%
COPYRIGH	0.00	0.00	28.74%
TEACHING	3.00	15.13	404.18%
TRAINING	3.00	3.86	28.74%
TOTAL_SA	257.79	118.31	-54.10%
TOT_OPS	63.48	62.40	-01.70%
TOTAL_EX	1559.51	1000.13	-35.87%
TOTAL_OC	21.00	21.00	00.00%

77.44%

3578803

	Actual:	Target:	Potential improvement:
FTEFACUL	1.00	1.00	00.00%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	1.00	0.16	-84.48%
FTETECHS	9.50	0.08	-99.13%
FTESUPPO	3.00	1.91	-36.19%
PAIDGRAD	2.00	1.06	-47.11%
PAIDUNDE	3.00	3.00	00.00%
PUBLICA	36.00	46.49	29.13%
PRESENT	28.00	36.16	29.13%
COPYRIGH	0.00	0.00	29.13%
TEACHING	0.00	14.58	1457473.39%
TRAINING	2.00	2.58	29.13%
TOTAL_SA	172.10	124.11	-27.88%
TOT_OPS	182.60	117.32	-35.75%
TOTAL_EX	9356.48	3753.60	-59.88%
TOTAL_OC	317.58	11.25	-96.46%

76.12%

7719901

	Actual:	Target:	Potential improvement:
FTEFACUL	12.00	2.26	-81.19%
FTEPOSTD	3.00	0.07	-97.76%
FTEANDP	2.50	0.81	-67.57%
FTETECHS	0.00	0.00	00.00%
FTESUPPO	0.50	0.50	00.00%
PAIDGRAD	18.00	9.22	-48.76%
PAIDUNDE	12.00	5.31	-55.71%
PUBLICA	26.00	34.16	31.37%
PRESENT	30.00	39.41	31.37%
COPYRIGH	0.00	0.00	31.37%
TEACHING	10.00	13.14	31.37%
TRAINING	18.00	23.65	31.37%
TOTAL_SA	527.63	91.36	-82.68%
TOT_OPS	200.00	153.71	-23.14%
TOTAL_EX	821.07	821.07	00.00%
TOTAL_OC	1380.00	460.20	-66.65%

72.74%

4727913

	Actual:	Target:	Potential improvement:
FTEFACUL	1.50	1.50	00.00%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	5.00	0.38	-92.46%
FTETECHS	0.00	0.00	00.00%
FTESUPPO	5.00	2.20	-55.93%
PAIDGRAD	6.00	0.61	-89.79%
PAIDUNDE	6.00	4.15	-30.85%
PUBLICA	17.00	23.37	37.47%
PRESENT	106.00	145.72	37.47%
COPYRIGH	0.00	0.00	37.47%
TEACHING	8.00	11.00	37.47%
TRAINING	6.00	8.25	37.47%
TOTAL_SA	698.16	147.57	-78.86%
TOT_OPS	238.52	86.89	-63.57%
TOTAL_EX	3386.15	1932.99	-42.91%
TOTAL_OC	1.20	1.20	00.00%

68.86%

7578401

	Actual:	Target:	Potential improvement:
FTEFACUL	4.00	2.35	-41.37%
FTEPOSTD	1.00	0.62	-38.35%
FTEANDP	0.00	0.00	00.00%
FTETECHS	8.00	0.31	-96.14%
FTESUPPO	0.00	0.00	00.00%

PAIDGRAD	8.00	6.61	-17.34%
PAIDUNDE	12.00	0.62	-94.85%
PUBLICA	8.00	13.38	67.29%
PRESENT	5.00	11.85	136.91%
COPYRIGH	0.00	0.00	45.21%
TEACHING	9.00	13.07	45.21%
TRAINING	8.00	11.62	45.21%
TOTAL_SA	801.48	37.56	-95.31%
TOT_OPS	420.88	44.46	-89.44%
TOTAL_EX	1895.94	870.51	-54.09%
TOTAL_OC	709.95	7.99	-98.88%

62.94% **3289405**

	Actual:	Target:	Potential improvement:
FTEFACUL	5.00	5.00	00.00%
FTEPOSTD	4.00	3.06	-23.46%
FTEANDP	0.00	0.00	00.00%
FTETECHS	26.00	1.55	-94.05%
FTESUPPO	2.50	2.31	-07.74%
PAIDGRAD	23.00	14.47	-37.11%
PAIDUNDE	25.00	4.86	-80.58%
PUBLICA	25.00	39.72	58.89%
PRESENT	25.00	39.72	58.89%
COPYRIGH	0.00	0.31	30687.08%
TEACHING	17.00	27.01	58.89%
TRAINING	30.00	47.67	58.89%
TOTAL_SA	173.10	173.10	00.00%
TOT_OPS	795.06	158.69	-80.04%
TOTAL_EX	3185.32	1959.36	-38.49%
TOTAL_OC	1756.28	518.20	-70.49%

62.04% **7279101**

	Actual:	Target:	Potential improvement:
FTEFACUL	0.50	0.39	-22.62%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	0.00	0.00	-47.42%
FTETECHS	0.00	0.00	-63.21%
FTESUPPO	0.00	0.00	00.00%
PAIDGRAD	0.00	0.00	02.80%
PAIDUNDE	1.00	1.00	00.01%
PUBLICA	0.00	0.33	33320.02%
PRESENT	0.00	2.00	199957.25%
COPYRIGH	0.00	0.33	33237.51%
TEACHING	2.00	3.22	61.24%
TRAINING	0.00	1.03	103301.79%
TOTAL_SA	12.25	2.76	-77.51%

TOT_OPS	1.50	0.83	-44.40%
TOTAL_EX	2.50	2.50	00.08%
TOTAL_OC	0.00	0.00	151.37%

61.23% **6059710**

	Actual:	Target:	Potential improvement:
FTEFACUL	2.00	1.40	-29.96%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	1.00	0.16	-84.01%
FTETECHS	0.00	0.00	00.00%
FTESUPPO	0.00	0.00	00.00%
PAIDGRAD	1.00	1.00	00.00%
PAIDUNDE	2.00	1.90	-05.10%
PUBLICA	6.00	9.80	63.31%
PRESENT	0.00	11.79	1179337.77%
COPYRIGH	0.00	0.21	21087.72%
TEACHING	1.00	11.78	1078.13%
TRAINING	1.00	1.63	63.31%
TOTAL_SA	310.73	106.51	-65.72%
TOT_OPS	24.00	24.00	00.00%
TOTAL_EX	924.84	546.76	-40.88%
TOTAL_OC	325.20	80.57	-75.22%

58.10% **7028213**

	Actual:	Target:	Potential improvement:
FTEFACUL	5.00	3.28	-34.43%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	1.00	0.89	-10.95%
FTETECHS	0.50	0.50	00.00%
FTESUPPO	3.00	1.48	-50.59%
PAIDGRAD	4.00	1.56	-61.08%
PAIDUNDE	4.00	4.00	00.00%
PUBLICA	49.00	84.33	72.11%
PRESENT	34.00	58.52	72.11%
COPYRIGH	0.00	0.12	11703.64%
TEACHING	8.00	19.26	140.75%
TRAINING	4.00	7.66	91.59%
TOTAL_SA	555.93	272.55	-50.97%
TOT_OPS	171.31	101.01	-41.04%
TOTAL_EX	2543.21	2543.21	00.00%
TOTAL_OC	295.58	67.85	-77.04%

55.25% **5217203**

	Actual:	Target:	Potential improvement:
FTEFACUL	9.50	3.85	-59.50%

FTEPOSTD	0.00	0.00	00.00%
FTEANDP	2.00	0.87	-56.72%
FTETECHS	0.50	0.50	00.00%
FTESUPPO	3.00	2.25	-25.14%
PAIDGRAD	13.00	1.37	-89.43%
PAIDUNDE	2.00	2.00	00.00%
PUBLICA	34.00	61.54	80.99%
PRESENT	45.00	81.45	80.99%
COPYRIGH	0.00	0.23	23246.99%
TEACHING	2.00	28.94	1346.82%
TRAINING	13.00	23.53	80.99%
TOTAL_SA	646.44	396.63	-38.64%
TOT_OPS	314.15	115.93	-63.10%
TOTAL_EX	3843.68	3843.68	00.00%
TOTAL_OC	165.20	165.20	00.00%

54.99%

5939210

	Actual:	Target:	Potential improvement:
FTEFACUL	10.50	2.57	-75.51%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	2.00	0.36	-81.89%
FTETECHS	0.00	0.00	00.00%
FTESUPPO	1.00	0.61	-38.80%
PAIDGRAD	1.00	1.00	00.00%
PAIDUNDE	1.00	1.00	00.00%
PUBLICA	2.00	3.64	81.87%
PRESENT	11.00	20.01	81.87%
COPYRIGH	0.00	0.00	81.87%
TEACHING	15.00	27.28	81.87%
TRAINING	1.00	1.82	81.87%
TOTAL_SA	227.53	105.68	-53.55%
TOT_OPS	18.06	18.06	00.00%
TOTAL_EX	2695.66	146.34	-94.57%
TOTAL_OC	25.00	18.38	-26.49%

53.71%

1319913

	Actual:	Target:	Potential improvement:
FTEFACUL	3.00	2.32	-22.73%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	1.00	0.79	-21.25%
FTETECHS	0.00	0.00	00.00%
FTESUPPO	2.00	1.56	-22.17%
PAIDGRAD	2.00	2.00	00.00%
PAIDUNDE	8.00	3.69	-53.86%
PUBLICA	30.00	55.85	86.17%
PRESENT	47.00	87.50	86.17%

COPYRIGH	0.00	0.00	86.17%
TEACHING	0.00	3.22	321830.30%
TRAINING	2.00	3.72	86.17%
TOTAL_SA	374.05	63.41	-83.05%
TOT_OPS	180.20	61.97	-65.61%
TOTAL_EX	8746.65	1198.40	-86.30%
TOTAL_OC	638.83	28.30	-95.57%

52.80%

2228213

	Actual:	Target:	Potential improvement:
FTEFACUL	2.00	1.25	-37.66%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	1.00	0.63	-37.35%
FTETECHS	22.50	0.91	-95.96%
FTESUPPO	0.50	0.50	00.00%
PAIDGRAD	2.00	1.96	-02.18%
PAIDUNDE	15.00	2.29	-84.70%
PUBLICA	10.00	18.94	89.40%
PRESENT	5.00	14.64	192.84%
COPYRIGH	0.00	0.00	89.40%
TEACHING	1.00	12.63	1162.88%
TRAINING	2.00	3.79	89.40%
TOTAL_SA	149.37	149.37	00.00%
TOT_OPS	193.84	42.79	-77.92%
TOTAL_EX	681.14	681.14	00.00%
TOTAL_OC	0.00	0.00	00.01%

52.52%

4716910

	Actual:	Target:	Potential improvement:
FTEFACUL	8.00	2.18	-72.73%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	0.00	0.00	00.00%
FTETECHS	0.00	0.00	00.00%
FTESUPPO	2.50	1.86	-25.51%
PAIDGRAD	6.00	6.00	00.00%
PAIDUNDE	2.00	2.00	00.00%
PUBLICA	4.00	23.40	484.98%
PRESENT	15.00	28.56	90.42%
COPYRIGH	0.00	0.00	90.42%
TEACHING	2.00	10.47	423.60%
TRAINING	6.00	11.42	90.42%
TOTAL_SA	2476.77	82.40	-96.67%
TOT_OPS	558.63	58.93	-89.45%
TOTAL_EX	10260.38	2011.62	-80.39%
TOTAL_OC	1248.52	98.39	-92.12%

51.45%

6338013

	Actual:	Target:	Potential improvement:
FTEFACUL	1.00	1.00	00.00%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	4.50	0.37	-91.67%
FTETECHS	0.00	0.00	00.00%
FTESUPPO	4.00	0.90	-77.51%
PAIDGRAD	2.00	2.00	00.00%
PAIDUNDE	0.00	0.00	00.00%
PUBLICA	4.00	7.77	94.37%
PRESENT	1.00	1.94	94.37%
COPYRIGH	0.00	0.00	94.37%
TEACHING	1.00	2.78	177.94%
TRAINING	2.00	3.89	94.37%
TOTAL_SA	530.86	60.13	-88.67%
TOT_OPS	114.24	21.10	-81.53%
TOTAL_EX	1767.39	432.01	-75.56%
TOTAL_OC	115.25	2.32	-97.99%

46.18%

3408910

	Actual:	Target:	Potential improvement:
FTEFACUL	5.00	1.51	-69.76%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	0.00	0.00	00.00%
FTETECHS	0.00	0.00	00.00%
FTESUPPO	6.00	0.84	-86.06%
PAIDGRAD	0.00	0.00	00.00%
PAIDUNDE	44.00	0.68	-98.46%
PUBLICA	0.00	5.05	504543.97%
PRESENT	3.00	6.50	116.54%
COPYRIGH	0.00	0.00	116.54%
TEACHING	0.00	6.08	607948.35%
TRAINING	19.00	41.14	116.54%
TOTAL_SA	352.97	163.09	-53.80%
TOT_OPS	85.02	8.72	-89.74%
TOTAL_EX	723.00	269.57	-62.72%
TOTAL_OC	0.00	0.00	00.01%

43.83%

5538612

	Actual:	Target:	Potential improvement:
FTEFACUL	3.50	3.45	-01.52%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	1.00	0.61	-38.78%
FTETECHS	0.00	0.00	00.00%
FTESUPPO	1.00	1.00	00.00%

PAIDGRAD	10.00	2.94	-70.57%
PAIDUNDE	2.00	2.00	00.00%
PUBLICA	15.00	34.23	128.17%
PRESENT	14.00	31.94	128.17%
COPYRIGH	0.00	0.00	128.18%
TEACHING	7.00	15.97	128.17%
TRAINING	10.00	22.82	128.17%
TOTAL_SA	270.10	156.80	-41.95%
TOT_OPS	265.78	49.46	-81.39%
TOTAL_EX	1260.23	656.97	-47.87%
TOTAL_OC	160.02	160.02	00.00%

43.39%

3240112

	Actual:	Target:	Potential improvement:
FTEFACUL	2.00	1.41	-29.66%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	1.00	0.18	-82.20%
FTETECHS	0.00	0.00	00.00%
FTESUPPO	1.00	0.95	-04.98%
PAIDGRAD	1.00	0.81	-18.99%
PAIDUNDE	1.00	1.00	00.00%
PUBLICA	1.00	7.59	658.67%
PRESENT	14.00	32.27	130.47%
COPYRIGH	0.00	0.00	130.47%
TEACHING	2.00	7.42	271.22%
TRAINING	16.00	36.88	130.47%
TOTAL_SA	136.88	136.88	00.00%
TOT_OPS	17.84	17.84	00.00%
TOTAL_EX	594.49	495.23	-16.70%
TOTAL_OC	131.53	131.53	00.00%

42.82%

5389113

	Actual:	Target:	Potential improvement:
FTEFACUL	7.50	4.78	-36.33%
FTEPOSTD	2.00	0.16	-91.93%
FTEANDP	2.50	0.54	-78.50%
FTETECHS	0.00	0.00	00.00%
FTESUPPO	7.00	1.80	-74.30%
PAIDGRAD	13.00	5.72	-55.97%
PAIDUNDE	3.00	3.00	00.00%
PUBLICA	8.00	18.68	133.51%
PRESENT	53.00	123.76	133.51%
COPYRIGH	0.00	0.00	133.51%
TEACHING	9.00	21.02	133.51%
TRAINING	13.00	30.36	133.51%
TOTAL_SA	478.89	289.03	-39.65%

TOT_OPS	248.48	93.66	-62.31%
TOTAL_EX	3506.23	862.53	-75.40%
TOTAL_OC	391.26	296.71	-24.17%

41.18% **7168510**

	Actual:	Target:	Potential improvement:
FTEFACUL	2.50	2.50	00.00%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	7.50	0.64	-91.46%
FTETECHS	15.00	0.17	-98.89%
FTESUPPO	1.50	1.28	-14.67%
PAIDGRAD	2.00	1.84	-8.20%
PAIDUNDE	2.00	2.00	00.00%
PUBLICA	24.00	58.28	142.85%
PRESENT	11.00	33.25	202.31%
COPYRIGH	0.00	0.01	1257.67%
TEACHING	6.00	14.57	142.85%
TRAINING	2.00	5.94	197.14%
TOTAL_SA	157.60	157.60	00.00%
TOT_OPS	351.73	73.26	-79.17%
TOTAL_EX	2229.40	2229.40	00.00%
TOTAL_OC	62.03	43.11	-30.49%

41.12% **6908513**

	Actual:	Target:	Potential improvement:
FTEFACUL	21.50	21.50	00.00%
FTEPOSTD	22.00	4.13	-81.24%
FTEANDP	3.00	3.00	00.00%
FTETECHS	2.00	2.00	00.00%
FTESUPPO	15.00	15.00	00.00%
PAIDGRAD	75.00	24.09	-67.88%
PAIDUNDE	15.00	15.00	00.00%
PUBLICA	175.00	425.55	143.17%
PRESENT	142.00	446.36	214.34%
COPYRIGH	4.00	9.73	143.17%
TEACHING	26.00	209.37	705.28%
TRAINING	75.00	182.38	143.17%
TOTAL_SA	3537.72	1347.13	-61.92%
TOT_OPS	1824.47	564.11	-69.08%
TOTAL_EX	26273.92	19791.14	-24.67%
TOTAL_OC	27348.61	2690.97	-90.16%

40.95% **2309301**

	Actual:	Target:	Potential improvement:
FTEFACUL	5.00	5.00	00.00%

FTEPOSTD	2.00	0.00	-99.75%
FTEANDP	1.00	0.08	-92.02%
FTETECHS	1.00	0.15	-84.51%
FTESUPPO	4.00	0.44	-89.09%
PAIDGRAD	14.00	4.76	-66.02%
PAIDUNDE	22.00	6.88	-68.74%
PUBLICA	24.00	58.61	144.19%
PRESENT	7.00	46.30	561.43%
COPYRIGH	0.00	0.46	45428.67%
TEACHING	16.00	59.35	270.92%
TRAINING	14.00	34.19	144.19%
TOTAL_SA	151.52	151.52	00.00%
TOT_OPS	285.49	50.25	-82.40%
TOTAL_EX	240.65	240.65	00.00%
TOTAL_OC	779.01	513.65	-34.06%

40.29%

6369713

	Actual:	Target:	Potential improvement:
FTEFACUL	1.00	1.00	00.00%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	0.00	0.00	00.00%
FTETECHS	1.00	0.02	-98.23%
FTESUPPO	1.00	1.00	00.00%
PAIDGRAD	1.00	0.61	-38.66%
PAIDUNDE	1.00	0.64	-35.69%
PUBLICA	6.00	14.89	148.21%
PRESENT	0.00	6.28	627605.73%
COPYRIGH	0.00	0.00	148.21%
TEACHING	0.00	8.02	802246.30%
TRAINING	1.00	2.48	148.21%
TOTAL_SA	107.70	94.88	-11.90%
TOT_OPS	36.25	33.44	-07.75%
TOTAL_EX	413.81	413.81	00.00%
TOTAL_OC	26.08	22.76	-12.74%

40.01%

3582912

	Actual:	Target:	Potential improvement:
FTEFACUL	6.00	2.53	-57.76%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	7.00	0.76	-89.13%
FTETECHS	0.00	0.00	00.00%
FTESUPPO	4.00	1.16	-71.12%
PAIDGRAD	7.00	2.54	-63.67%
PAIDUNDE	275.00	2.83	-98.97%
PUBLICA	22.00	54.98	149.92%
PRESENT	19.00	47.48	149.92%

COPYRIGH	0.00	0.00	149.92%
TEACHING	1.00	2.50	149.92%
TRAINING	7.00	17.49	149.92%
TOTAL_SA	1139.22	32.07	-97.18%
TOT_OPS	851.47	37.74	-95.57%
TOTAL_EX	3505.77	570.35	-83.73%
TOTAL_OC	472.69	300.52	-36.42%

39.48%

3846502

	Actual:	Target:	Potential improvement:
FTEFACUL	1.00	1.00	00.00%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	1.00	0.06	-94.23%
FTETECHS	2.50	0.11	-95.62%
FTESUPPO	0.00	0.00	00.00%
PAIDGRAD	1.00	0.03	-96.54%
PAIDUNDE	4.00	3.38	-15.50%
PUBLICA	5.00	12.67	153.31%
PRESENT	2.00	6.23	211.39%
COPYRIGH	0.00	0.83	83088.21%
TEACHING	0.00	9.04	903990.57%
TRAINING	1.00	2.53	153.31%
TOTAL_SA	87.93	23.13	-73.69%
TOT_OPS	10.92	10.92	00.00%
TOTAL_EX	215.33	55.41	-74.27%
TOTAL_OC	10.78	3.76	-65.09%

38.45%

2689901

	Actual:	Target:	Potential improvement:
FTEFACUL	6.00	2.00	-66.69%
FTEPOSTD	2.00	2.00	-00.16%
FTEANDP	0.00	0.00	00.00%
FTETECHS	1.00	0.85	-14.71%
FTESUPPO	0.00	0.00	00.00%
PAIDGRAD	8.00	7.40	-07.44%
PAIDUNDE	2.00	1.86	-07.20%
PUBLICA	0.00	19.95	1994717.75%
PRESENT	0.00	14.38	1438047.46%
COPYRIGH	0.00	0.00	160.05%
TEACHING	0.00	2.74	273862.18%
TRAINING	8.00	20.80	160.05%
TOTAL_SA	247.12	64.72	-73.81%
TOT_OPS	142.38	70.13	-50.74%
TOTAL_EX	2366.89	2366.89	00.00%
TOTAL_OC	352.16	22.11	-93.72%

37.69%

6459913

	Actual:	Target:	Potential improvement:
FTEFACUL	3.00	1.70	-43.47%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	1.00	0.53	-47.46%
FTETECHS	1.00	0.59	-40.87%
FTESUPPO	0.00	0.00	00.00%
PAIDGRAD	1.00	1.00	00.00%
PAIDUNDE	4.00	4.00	00.00%
PUBLICA	6.00	15.92	165.33%
PRESENT	5.00	13.27	165.33%
COPYRIGH	0.00	0.53	53190.42%
TEACHING	0.00	11.33	1133005.92%
TRAINING	1.00	2.65	165.33%
TOTAL_SA	278.12	194.41	-30.10%
TOT_OPS	44.04	39.29	-10.77%
TOTAL_EX	801.69	801.69	00.00%
TOTAL_OC	524.56	114.49	-78.17%

37.47%

5637806

	Actual:	Target:	Potential improvement:
FTEFACUL	4.00	4.00	00.00%
FTEPOSTD	4.00	0.00	-99.89%
FTEANDP	1.00	1.00	00.00%
FTETECHS	5.00	0.00	-99.91%
FTESUPPO	5.00	2.62	-47.55%
PAIDGRAD	5.00	3.40	-31.93%
PAIDUNDE	1.00	1.00	00.00%
PUBLICA	15.00	40.03	166.86%
PRESENT	26.00	69.38	166.86%
COPYRIGH	0.00	0.00	337.14%
TEACHING	1.00	9.30	830.18%
TRAINING	5.00	13.34	166.86%
TOTAL_SA	583.65	147.24	-74.77%
TOT_OPS	135.93	64.14	-52.81%
TOTAL_EX	418.92	418.92	00.00%
TOTAL_OC	79.47	79.47	00.00%

34.35%

7549506

	Actual:	Target:	Potential improvement:
FTEFACUL	5.00	5.00	00.00%
FTEPOSTD	0.50	0.00	-99.24%
FTEANDP	1.00	0.56	-44.33%
FTETECHS	1.00	0.24	-76.11%
FTESUPPO	1.00	1.00	00.00%

PAIDGRAD	1.00	1.00	00.00%
PAIDUNDE	2.00	2.00	00.00%
PUBLICA	5.00	14.56	191.12%
PRESENT	7.00	20.38	191.12%
COPYRIGH	0.00	0.00	280.04%
TEACHING	18.00	52.40	191.12%
TRAINING	1.00	2.91	191.12%
TOTAL_SA	433.83	144.07	-66.79%
TOT_OPS	31.94	30.19	-05.47%
TOTAL_EX	262.06	262.06	00.00%
TOTAL_OC	1401.51	405.28	-71.08%

34.24%

7409901

	Actual:	Target:	Potential improvement:
FTEFACUL	27.00	2.32	-91.42%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	2.00	0.51	-74.70%
FTETECHS	2.00	0.25	-87.61%
FTESUPPO	2.00	1.08	-45.97%
PAIDGRAD	8.00	0.85	-89.40%
PAIDUNDE	4.00	3.71	-07.30%
PUBLICA	16.00	46.73	192.04%
PRESENT	20.00	58.41	192.04%
COPYRIGH	0.00	0.00	192.04%
TEACHING	3.00	8.76	192.04%
TRAINING	8.00	23.36	192.04%
TOTAL_SA	230.68	163.13	-29.28%
TOT_OPS	42.38	42.38	00.00%
TOTAL_EX	512.53	512.53	00.00%
TOTAL_OC	77.20	77.20	00.00%

33.35%

5678613

	Actual:	Target:	Potential improvement:
FTEFACUL	6.00	4.44	-26.04%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	11.00	0.91	-91.75%
FTETECHS	2.50	0.88	-64.78%
FTESUPPO	5.00	1.99	-60.11%
PAIDGRAD	0.00	0.00	00.00%
PAIDUNDE	4.00	4.00	00.00%
PUBLICA	25.00	74.96	199.85%
PRESENT	23.00	68.97	199.85%
COPYRIGH	0.00	0.00	199.85%
TEACHING	1.00	31.28	3027.90%
TRAINING	0.00	5.33	532542.00%
TOTAL_SA	657.80	468.79	-28.73%

TOT_OPS	429.05	113.04	-73.65%
TOTAL_EX	3123.67	3123.67	00.00%
TOTAL_OC	295.36	50.70	-82.83%

31.56% **5448103**

	Actual:	Target:	Potential improvement:
FTEFACUL	9.00	4.34	-51.73%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	2.00	0.81	-59.33%
FTETECHS	2.00	0.90	-55.01%
FTESUPPO	4.00	2.34	-41.53%
PAIDGRAD	0.00	0.00	00.00%
PAIDUNDE	5.00	3.85	-23.04%
PUBLICA	30.00	95.05	216.85%
PRESENT	28.00	88.72	216.85%
COPYRIGH	0.00	0.00	216.85%
TEACHING	7.00	54.03	671.89%
TRAINING	0.00	18.44	1844287.84%
TOTAL_SA	687.44	687.44	00.00%
TOT_OPS	670.57	202.14	-69.86%
TOTAL_EX	9455.37	6343.24	-32.91%
TOTAL_OC	830.09	93.61	-88.72%

30.01% **3490113**

	Actual:	Target:	Potential improvement:
FTEFACUL	2.50	1.33	-46.67%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	2.50	0.00	-99.96%
FTETECHS	0.00	0.00	00.00%
FTESUPPO	0.00	0.00	00.00%
PAIDGRAD	1.00	1.00	00.00%
PAIDUNDE	2.00	2.00	00.00%
PUBLICA	0.00	2.33	233107.34%
PRESENT	0.00	5.66	566395.60%
COPYRIGH	0.00	0.67	66591.00%
TEACHING	3.00	10.00	233.28%
TRAINING	1.00	3.33	233.24%
TOTAL_SA	205.50	14.96	-92.72%
TOT_OPS	50.02	10.23	-79.54%
TOTAL_EX	1552.08	18.85	-98.79%
TOTAL_OC	841.75	0.00	-100.00%

28.87% **4769713**

	Actual:	Target:	Potential improvement:
FTEFACUL	4.50	4.50	00.00%

FTEPOSTD	1.00	0.00	-99.90%
FTEANDP	0.00	0.00	00.00%
FTETECHS	4.00	1.48	-62.91%
FTESUPPO	5.00	1.82	-63.53%
PAIDGRAD	0.00	0.00	00.00%
PAIDUNDE	1.00	0.38	-62.13%
PUBLICA	5.00	17.32	246.37%
PRESENT	7.00	24.25	246.37%
COPYRIGH	0.00	0.00	246.37%
TEACHING	0.00	33.87	3386536.98%
TRAINING	0.00	0.01	739.61%
TOTAL_SA	736.14	114.63	-84.43%
TOT_OPS	115.12	74.60	-35.20%
TOTAL_EX	4560.36	3626.40	-20.48%
TOTAL_OC	2567.07	236.20	-90.80%

28.13%

6399403

	Actual:	Target:	Potential improvement:
FTEFACUL	1.00	1.00	00.00%
FTEPOSTD	0.50	0.01	-98.24%
FTEANDP	5.00	0.26	-94.73%
FTETECHS	12.50	0.01	-99.94%
FTESUPPO	7.50	2.52	-66.38%
PAIDGRAD	5.00	1.41	-71.83%
PAIDUNDE	4.00	4.00	00.00%
PUBLICA	11.00	39.10	255.44%
PRESENT	24.00	85.30	255.44%
COPYRIGH	0.00	0.00	255.44%
TEACHING	2.00	13.03	551.30%
TRAINING	5.00	17.77	255.44%
TOTAL_SA	409.69	106.10	-74.10%
TOT_OPS	396.24	121.29	-69.39%
TOTAL_EX	4267.58	3588.34	-15.92%
TOTAL_OC	851.18	291.70	-65.73%

26.88%

2239813

	Actual:	Target:	Potential improvement:
FTEFACUL	2.00	2.00	00.00%
FTEPOSTD	0.00	0.00	-46.86%
FTEANDP	3.00	0.31	-89.62%
FTETECHS	1.00	0.29	-70.65%
FTESUPPO	4.00	1.18	-70.62%
PAIDGRAD	0.00	0.00	00.00%
PAIDUNDE	3.00	0.53	-82.20%
PUBLICA	6.00	22.33	272.09%

PRESENT	10.00	37.21	272.09%
COPYRIGH	0.00	0.00	272.09%
TEACHING	6.00	22.33	272.09%
TRAINING	6.00	22.33	272.09%
TOTAL_SA	413.44	284.82	-31.11%
TOT_OPS	658.82	64.36	-90.23%
TOTAL_EX	3646.83	2467.33	-32.34%
TOTAL_OC	826.67	32.05	-96.12%

23.66%

4286213

	Actual:	Target:	Potential improvement:
FTEFACUL	15.00	15.00	00.00%
FTEPOSTD	11.00	0.11	-99.00%
FTEANDP	4.00	4.00	00.00%
FTETECHS	5.00	0.92	-81.63%
FTESUPPO	12.00	11.95	-00.39%
PAIDGRAD	36.00	13.60	-62.21%
PAIDUNDE	13.00	13.00	00.00%
PUBLICA	77.00	325.49	322.71%
PRESENT	39.00	164.86	322.71%
COPYRIGH	0.00	0.01	1157.21%
TEACHING	18.00	76.09	322.71%
TRAINING	36.00	152.17	322.71%
TOTAL_SA	1111.85	914.96	-17.71%
TOT_OPS	1820.63	349.40	-80.81%
TOTAL_EX	6420.00	6420.00	00.00%
TOTAL_OC	7820.92	2562.10	-67.24%

21.64%

5188713

	Actual:	Target:	Potential improvement:
FTEFACUL	12.00	12.00	00.00%
FTEPOSTD	1.00	1.00	00.00%
FTEANDP	2.00	2.00	00.00%
FTETECHS	20.00	4.07	-79.65%
FTESUPPO	5.00	5.00	00.00%
PAIDGRAD	10.00	4.88	-51.22%
PAIDUNDE	39.00	39.00	00.00%
PUBLICA	57.00	263.37	362.05%
PRESENT	37.00	170.96	362.05%
COPYRIGH	3.00	13.86	362.05%
TEACHING	4.00	106.22	2555.46%
TRAINING	10.00	46.20	362.05%
TOTAL_SA	1354.63	731.50	-46.00%
TOT_OPS	392.10	376.09	-04.08%
TOTAL_EX	11264.22	7738.06	-31.30%
TOTAL_OC	1147.51	613.36	-46.55%

19.61%

3027804

	Actual:	Target:	Potential improvement:
FTEFACUL	12.00	1.30	-89.17%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	0.00	0.00	00.00%
FTETECHS	0.00	0.00	00.00%
FTESUPPO	1.00	0.30	-69.94%
PAIDGRAD	4.00	0.00	-99.97%
PAIDUNDE	8.00	2.40	-70.00%
PUBLICA	0.00	2.80	279834.38%
PRESENT	0.00	4.20	419995.46%
COPYRIGH	0.00	0.70	69940.90%
TEACHING	0.00	9.00	899899.80%
TRAINING	4.00	20.39	409.84%
TOTAL_SA	113.07	72.42	-35.95%
TOT_OPS	36.52	4.56	-87.51%
TOTAL_EX	119.87	119.87	00.00%
TOTAL_OC	0.00	0.00	00.01%

18.60%

4557407

	Actual:	Target:	Potential improvement:
FTEFACUL	11.50	11.50	00.00%
FTEPOSTD	14.00	2.28	-83.69%
FTEANDP	1.00	1.00	00.00%
FTETECHS	15.50	1.19	-92.31%
FTESUPPO	11.00	11.00	00.00%
PAIDGRAD	5.00	5.00	00.00%
PAIDUNDE	9.00	9.00	00.00%
PUBLICA	37.00	198.92	437.61%
PRESENT	57.00	306.44	437.61%
COPYRIGH	1.00	5.38	437.61%
TEACHING	9.00	74.85	731.63%
TRAINING	5.00	26.88	437.61%
TOTAL_SA	1321.37	924.68	-30.02%
TOT_OPS	721.80	372.25	-48.43%
TOTAL_EX	7374.28	7374.28	00.00%
TOTAL_OC	5426.92	362.59	-93.32%

18.50%

6007912

	Actual:	Target:	Potential improvement:
FTEFACUL	4.00	2.33	-41.69%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	1.50	0.47	-68.52%
FTETECHS	0.00	0.00	00.00%
FTESUPPO	1.00	1.00	00.00%

PAIDGRAD	6.00	2.31	-61.51%
PAIDUNDE	8.00	2.44	-69.55%
PUBLICA	6.00	32.43	440.45%
PRESENT	6.00	32.43	440.45%
COPYRIGH	0.00	0.01	440.45%
TEACHING	0.00	6.45	645284.30%
TRAINING	6.00	32.43	440.45%
TOTAL_SA	566.09	140.21	-75.23%
TOT_OPS	76.59	43.26	-43.52%
TOTAL_EX	3463.72	529.29	-84.72%
TOTAL_OC	38.92	38.92	00.00%

16.06%

5458205

	Actual:	Target:	Potential improvement:
FTEFACUL	40.00	40.00	00.00%
FTEPOSTD	3.00	3.00	00.00%
FTEANDP	10.00	10.00	00.00%
FTETECHS	19.00	6.17	-67.52%
FTESUPPO	7.00	7.00	00.00%
PAIDGRAD	43.00	43.00	00.00%
PAIDUNDE	36.00	36.00	00.00%
PUBLICA	114.00	709.68	522.53%
PRESENT	32.00	199.21	522.53%
COPYRIGH	1.00	6.23	522.53%
TEACHING	18.00	167.43	830.16%
TRAINING	43.00	267.69	522.53%
TOTAL_SA	3386.27	2031.67	-40.00%
TOT_OPS	1442.29	1324.71	-08.15%
TOTAL_EX	18824.03	18824.03	00.00%
TOTAL_OC	9458.94	5108.52	-45.99%

13.27%

1947701

	Actual:	Target:	Potential improvement:
FTEFACUL	4.00	2.18	-45.48%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	1.00	0.27	-73.10%
FTETECHS	0.00	0.00	00.00%
FTESUPPO	5.00	1.09	-78.26%
PAIDGRAD	6.00	0.73	-87.77%
PAIDUNDE	5.00	1.74	-65.27%
PUBLICA	3.00	22.61	653.66%
PRESENT	3.00	22.61	653.66%
COPYRIGH	0.00	0.01	653.66%
TEACHING	0.00	6.67	666898.32%
TRAINING	6.00	45.22	653.66%
TOTAL_SA	679.25	175.44	-74.17%

TOT_OPS	166.80	20.31	-87.82%
TOTAL_EX	5539.82	452.68	-91.83%
TOTAL_OC	50.76	50.76	00.00%

13.25% **1098901**

	Actual:	Target:	Potential improvement:
FTEFACUL	1.00	0.00	-99.69%
FTEPOSTD	1.00	0.00	-99.73%
FTEANDP	0.00	0.00	00.00%
FTETECHS	12.00	0.00	-100.00%
FTESUPPO	2.00	0.00	-99.89%
PAIDGRAD	0.00	0.00	00.00%
PAIDUNDE	0.00	0.00	00.00%
PUBLICA	0.00	0.01	832.46%
PRESENT	0.00	0.01	975.91%
COPYRIGH	0.00	0.01	654.81%
TEACHING	0.00	0.01	654.81%
TRAINING	0.00	0.01	654.81%
TOTAL_SA	1466.46	0.23	-99.98%
TOT_OPS	73.14	0.06	-99.92%
TOTAL_EX	1532.21	0.57	-99.96%
TOTAL_OC	534.80	0.10	-99.98%

12.99% **8029901**

	Actual:	Target:	Potential improvement:
FTEFACUL	40.50	40.50	00.00%
FTEPOSTD	5.00	0.04	-99.14%
FTEANDP	12.00	12.00	00.00%
FTETECHS	29.50	1.57	-94.67%
FTESUPPO	20.00	19.69	-01.54%
PAIDGRAD	49.00	49.00	00.00%
PAIDUNDE	28.00	28.00	00.00%
PUBLICA	31.00	238.56	669.55%
PRESENT	15.00	310.64	1970.90%
COPYRIGH	0.00	0.04	4175.46%
TEACHING	94.00	723.38	669.55%
TRAINING	49.00	377.08	669.55%
TOTAL_SA	1999.73	1999.73	00.00%
TOT_OPS	729.65	729.65	00.00%
TOTAL_EX	9293.60	9293.60	00.00%
TOTAL_OC	2079.64	2079.64	00.00%

12.22% **6709903**

	Actual:	Target:	Potential improvement:
FTEFACUL	12.00	12.00	00.00%

FTEPOSTD	6.00	0.01	-99.84%
FTEANDP	3.00	1.77	-40.94%
FTETECHS	47.00	2.58	-94.51%
FTESUPPO	11.00	11.00	00.00%
PAIDGRAD	33.00	7.57	-77.05%
PAIDUNDE	48.00	36.20	-24.59%
PUBLICA	51.00	417.24	718.12%
PRESENT	38.00	310.89	718.12%
COPYRIGH	0.00	0.01	889.31%
TEACHING	9.00	100.36	1015.12%
TRAINING	33.00	269.98	718.12%
TOTAL_SA	2384.15	1222.86	-48.71%
TOT_OPS	2228.18	599.69	-73.09%
TOTAL_EX	15372.24	12998.19	-15.44%
TOTAL_OC	2933.53	2933.53	00.00%

7.38%

3828413

	Actual:	Target:	Potential improvement:
FTEFACUL	12.00	5.58	-53.49%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	14.50	0.92	-93.63%
FTETECHS	8.00	0.72	-91.03%
FTESUPPO	3.00	2.46	-17.90%
PAIDGRAD	0.00	0.00	00.00%
PAIDUNDE	3.00	3.00	00.00%
PUBLICA	5.00	67.79	1255.88%
PRESENT	4.00	54.24	1255.88%
COPYRIGH	0.00	0.01	1255.88%
TEACHING	0.00	30.23	3023211.49%
TRAINING	0.00	7.00	700242.44%
TOTAL_SA	1618.42	559.80	-65.41%
TOT_OPS	115.88	115.88	00.00%
TOTAL_EX	22107.79	3316.42	-85.00%
TOTAL_OC	16035.02	50.25	-99.69%

0.96%

2449907

	Actual:	Target:	Potential improvement:
FTEFACUL	13.00	13.00	00.00%
FTEPOSTD	6.00	0.05	-99.19%
FTEANDP	5.00	0.26	-94.85%
FTETECHS	11.00	0.26	-97.68%
FTESUPPO	7.00	7.00	00.00%
PAIDGRAD	2.00	2.00	00.00%
PAIDUNDE	3.00	3.00	00.00%
PUBLICA	0.00	54.01	5401374.03%
PRESENT	0.00	34.87	3486740.14%

COPYRIGH	0.00	0.10	10351.47%
TEACHING	0.00	67.35	6735232.24%
TRAINING	2.00	209.03	10351.47%
TOTAL_SA	1710.43	1089.11	-36.33%
TOT_OPS	351.56	132.83	-62.22%
TOTAL_EX	4888.63	4888.63	00.00%
TOTAL_OC	553.09	553.09	00.00%

Open System Model

99.99%

4579813

	Actual:	Target:	Potential improvement:
FTEFACUL	0.50	0.50	00.00%
FTEPOSTD	0.00	0.00	-66.66%
FTEANDP	2.50	0.00	-99.98%
FTETECHS	0.00	0.00	-66.66%
FTESUPPO	0.00	0.00	-66.66%
PAIDGRAD	2.00	0.00	-99.98%
PAIDUNDE	1.00	0.00	-99.96%
PUBSERVI	0.00	0.00	00.00%
EXTERNAL	1.00	1.00	00.01%
CG_TOTAL	0.00	7.46	745923.06%
FEES_TOT	0.00	1.33	133225.93%
PRIVTOTX	0.00	2.37	237253.49%
TOTAL_SA	155.31	18.65	-87.99%
TOT_OPS	21.13	1.00	-95.26%
TOTAL_EX	506.48	24.43	-95.18%
TOTAL_OC	0.00	0.00	233.46%

93.77%

4779413

	Actual:	Target:	Potential improvement:
FTEFACUL	1.50	1.28	-14.45%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	2.00	0.43	-78.29%
FTETECHS	0.00	0.00	00.00%
FTESUPPO	1.00	0.43	-56.59%
PAIDGRAD	4.00	0.00	-99.97%
PAIDUNDE	1.00	0.87	-13.23%
PUBSERVI	0.00	0.00	00.00%
EXTERNAL	2.00	2.13	06.64%
CG_TOTAL	79.34	84.61	06.64%
FEES_TOT	0.00	40.42	4041808.86%
PRIVTOTX	0.00	4.03	403304.71%
TOTAL_SA	195.48	87.61	-55.18%
TOT_OPS	112.25	7.30	-93.50%

TOTAL_EX	2174.06	693.90	-68.08%
TOTAL_OC	44.00	0.00	-100.00%

91.56% **5188713**

	Actual:	Target:	Potential improvement:
FTEFACUL	12.00	12.00	00.00%
FTEPOSTD	1.00	0.34	-65.75%
FTEANDP	2.00	2.00	00.00%
FTETECHS	20.00	1.96	-90.19%
FTESUPPO	5.00	5.00	00.00%
PAIDGRAD	10.00	2.92	-70.83%
PAIDUNDE	39.00	7.87	-79.82%
PUBSERVI	38.00	38.00	00.00%
EXTERNAL	1.00	21.74	2073.99%
CG_TOTAL	283.14	309.24	09.22%
FEES_TOT	1091.02	1191.57	09.22%
PRIVTOTX	0.00	46.16	4615690.63%
TOTAL_SA	1354.63	765.76	-43.47%
TOT_OPS	392.10	379.37	-03.25%
TOTAL_EX	11264.22	7052.65	-37.39%
TOTAL_OC	1147.51	130.80	-88.60%

91.49% **4160107**

	Actual:	Target:	Potential improvement:
FTEFACUL	1.00	0.20	-80.43%
FTEPOSTD	0.00	0.00	-25.40%
FTEANDP	0.00	0.00	00.00%
FTETECHS	0.00	0.00	00.00%
FTESUPPO	0.50	0.02	-96.54%
PAIDGRAD	0.00	0.00	00.00%
PAIDUNDE	0.00	0.00	00.00%
PUBSERVI	1.00	0.05	-94.96%
EXTERNAL	0.00	0.36	36275.72%
CG_TOTAL	3.86	4.22	09.30%
FEES_TOT	0.00	0.56	56160.03%
PRIVTOTX	1.15	1.25	09.30%
TOTAL_SA	12.75	8.44	-33.82%
TOT_OPS	5.36	0.76	-85.77%
TOTAL_EX	11.46	11.46	00.00%
TOTAL_OC	0.00	0.00	00.00%

90.44% **4809007**

	Actual:	Target:	Potential improvement:
FTEFACUL	5.00	5.00	00.00%
FTEPOSTD	3.50	0.49	-86.12%

FTEANDP	0.00	0.00	00.00%
FTETECHS	0.00	0.00	00.00%
FTESUPPO	1.00	1.00	00.00%
PAIDGRAD	13.00	6.67	-48.69%
PAIDUNDE	33.00	0.91	-97.26%
PUBSERVI	76.00	8.69	-88.56%
EXTERNAL	1.00	1.11	10.57%
CG_TOTAL	753.13	832.71	10.57%
FEES_TOT	0.00	10.45	1045351.18%
PRIVTOTX	0.00	14.80	1479946.55%
TOTAL_SA	520.64	520.64	00.00%
TOT_OPS	264.44	264.44	00.00%
TOTAL_EX	2915.25	2915.25	00.00%
TOTAL_OC	365.17	229.02	-37.28%

90.09%

5050113

	Actual:	Target:	Potential improvement:
FTEFACUL	1.00	0.55	-44.50%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	0.00	0.00	00.00%
FTETECHS	0.00	0.00	00.00%
FTESUPPO	1.00	0.28	-71.58%
PAIDGRAD	2.00	0.57	-71.61%
PAIDUNDE	1.00	0.38	-62.18%
PUBSERVI	17.00	3.59	-78.87%
EXTERNAL	1.00	1.11	11.00%
CG_TOTAL	0.00	19.50	1949997.82%
FEES_TOT	0.00	0.22	21985.55%
PRIVTOTX	0.00	0.39	39144.07%
TOTAL_SA	11.03	11.03	00.00%
TOT_OPS	10.01	2.43	-75.69%
TOTAL_EX	253.33	253.33	00.00%
TOTAL_OC	1179.46	0.00	-100.00%

89.91%

8069913

	Actual:	Target:	Potential improvement:
FTEFACUL	0.50	0.50	00.00%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	0.50	0.11	-77.55%
FTETECHS	0.00	0.00	00.00%
FTESUPPO	0.50	0.14	-71.79%
PAIDGRAD	2.00	1.04	-47.89%
PAIDUNDE	1.00	0.00	-99.95%
PUBSERVI	2.00	1.02	-49.25%
EXTERNAL	0.00	0.22	22293.17%
CG_TOTAL	31.50	35.03	11.22%

FEES_TOT	0.00	0.00	-67.59%
PRIVTOTX	0.00	0.00	11.22%
TOTAL_SA	15.09	15.09	00.00%
TOT_OPS	32.16	10.19	-68.33%
TOTAL_EX	61.57	61.57	00.00%
TOTAL_OC	0.00	0.00	00.00%

87.55%

6860007

	Actual:	Target:	Potential improvement:
FTEFACUL	8.00	6.91	-13.59%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	2.00	1.18	-40.93%
FTETECHS	7.00	0.42	-94.01%
FTESUPPO	8.00	2.33	-70.82%
PAIDGRAD	3.00	1.85	-38.18%
PAIDUNDE	1.00	1.00	00.00%
PUBSERVI	10.00	5.36	-46.38%
EXTERNAL	2.00	2.28	14.22%
CG_TOTAL	1016.00	1160.47	14.22%
FEES_TOT	0.00	20.11	2011347.39%
PRIVTOTX	50.00	57.11	14.22%
TOTAL_SA	1011.59	851.58	-15.82%
TOT_OPS	149.78	149.78	00.00%
TOTAL_EX	4965.13	4965.13	00.00%
TOTAL_OC	831.14	294.22	-64.60%

86.75%

3837705

	Actual:	Target:	Potential improvement:
FTEFACUL	5.50	2.85	-48.12%
FTEPOSTD	2.00	0.38	-80.82%
FTEANDP	1.00	1.00	00.00%
FTETECHS	0.50	0.50	00.00%
FTESUPPO	0.00	0.00	00.00%
PAIDGRAD	33.00	4.98	-84.92%
PAIDUNDE	2.00	1.58	-21.01%
PUBSERVI	15.00	0.81	-94.59%
EXTERNAL	1.00	1.15	15.27%
CG_TOTAL	310.26	357.64	15.27%
FEES_TOT	0.00	0.58	58203.43%
PRIVTOTX	0.00	1.04	103628.02%
TOTAL_SA	140.27	131.26	-06.42%
TOT_OPS	125.18	125.18	00.00%
TOTAL_EX	377.90	377.90	00.00%
TOTAL_OC	70.28	70.28	00.00%

85.48%

5597313

	Actual:	Target:	Potential improvement:
FTEFACUL	3.00	0.71	-76.27%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	1.00	0.00	-99.90%
FTETECHS	0.00	0.00	00.00%
FTESUPPO	1.00	0.47	-53.33%
PAIDGRAD	3.00	2.31	-22.96%
PAIDUNDE	3.00	0.00	-99.97%
PUBSERVI	75.00	4.38	-94.17%
EXTERNAL	1.00	1.17	16.99%
CG_TOTAL	55.04	64.39	16.99%
FEES_TOT	0.00	0.41	41210.69%
PRIVTOTX	0.00	0.73	73373.36%
TOTAL_SA	14.51	14.51	00.00%
TOT_OPS	42.54	11.58	-72.77%
TOTAL_EX	735.81	602.06	-18.18%
TOTAL_OC	46.90	1.99	-95.76%

81.99%

5476702

	Actual:	Target:	Potential improvement:
FTEFACUL	12.00	2.42	-79.84%
FTEPOSTD	1.50	0.24	-84.12%
FTEANDP	1.50	0.66	-55.79%
FTETECHS	0.00	0.00	00.00%
FTESUPPO	1.50	0.25	-83.31%
PAIDGRAD	5.00	1.14	-77.18%
PAIDUNDE	13.00	2.58	-80.15%
PUBSERVI	1.00	1.00	00.00%
EXTERNAL	2.00	2.44	21.96%
CG_TOTAL	325.41	396.89	21.96%
FEES_TOT	0.59	9.55	1512.86%
PRIVTOTX	0.00	10.52	1051533.76%
TOTAL_SA	360.46	317.16	-12.01%
TOT_OPS	203.94	114.46	-43.87%
TOTAL_EX	1110.51	1110.51	00.00%
TOTAL_OC	374.27	190.14	-49.20%

81.15%

6709903

	Actual:	Target:	Potential improvement:
FTEFACUL	12.00	12.00	00.00%
FTEPOSTD	6.00	2.99	-50.23%
FTEANDP	3.00	2.50	-16.81%
FTETECHS	47.00	34.21	-27.22%
FTESUPPO	11.00	5.35	-51.34%
PAIDGRAD	33.00	33.00	00.00%

PAIDUNDE	48.00	34.60	-27.93%
PUBSERVI	48.00	48.00	00.00%
EXTERNAL	2.00	2.46	23.23%
CG_TOTAL	5826.45	7179.88	23.23%
FEES_TOT	0.00	28.84	2883402.47%
PRIVTOTX	0.00	2.00	199913.85%
TOTAL_SA	2384.15	2384.15	00.00%
TOT_OPS	2228.18	1509.89	-32.24%
TOTAL_EX	15372.24	15372.24	00.00%
TOTAL_OC	2933.53	2548.16	-13.14%

77.21%

5389113

	Actual:	Target:	Potential improvement:
FTEFACUL	7.50	6.34	-15.53%
FTEPOSTD	2.00	0.00	-99.95%
FTEANDP	2.50	0.35	-86.08%
FTETECHS	0.00	0.00	00.00%
FTESUPPO	7.00	2.22	-68.25%
PAIDGRAD	13.00	2.74	-78.89%
PAIDUNDE	3.00	3.00	00.00%
PUBSERVI	11.00	11.00	00.00%
EXTERNAL	2.00	2.59	29.52%
CG_TOTAL	513.41	664.97	29.52%
FEES_TOT	26.37	34.15	29.52%
PRIVTOTX	151.83	196.66	29.52%
TOTAL_SA	478.89	426.71	-10.90%
TOT_OPS	248.48	144.31	-41.92%
TOTAL_EX	3506.23	2476.33	-29.37%
TOTAL_OC	391.26	123.82	-68.35%

74.28%

6379407

	Actual:	Target:	Potential improvement:
FTEFACUL	21.00	19.10	-09.03%
FTEPOSTD	22.00	3.06	-86.10%
FTEANDP	2.00	2.00	00.00%
FTETECHS	19.00	1.77	-90.70%
FTESUPPO	3.00	1.99	-33.70%
PAIDGRAD	10.00	8.05	-19.50%
PAIDUNDE	2.00	2.00	00.00%
PUBSERVI	37.00	13.79	-62.72%
EXTERNAL	2.00	2.69	34.62%
CG_TOTAL	358.81	483.01	34.62%
FEES_TOT	0.00	1.69	168826.24%
PRIVTOTX	0.00	0.32	31699.50%
TOTAL_SA	202.19	202.19	00.00%
TOT_OPS	78.44	78.44	00.00%

TOTAL_EX	693.63	693.63	00.00%
TOTAL_OC	88.12	88.12	00.00%

69.28% **5458205**

	Actual:	Target:	Potential improvement:
FTEFACUL	40.00	29.45	-26.38%
FTEPOSTD	3.00	3.00	00.00%
FTEANDP	10.00	10.00	00.00%
FTETECHS	19.00	19.00	00.00%
FTESUPPO	7.00	7.00	00.00%
PAIDGRAD	43.00	43.00	00.00%
PAIDUNDE	36.00	36.00	00.00%
PUBSERVI	44.00	42.58	-03.22%
EXTERNAL	1.00	3.84	284.31%
CG_TOTAL	5720.18	8256.31	44.34%
FEES_TOT	0.00	2.17	216758.13%
PRIVTOTX	7.13	17.57	146.46%
TOTAL_SA	3386.27	3386.27	00.00%
TOT_OPS	1442.29	1442.29	00.00%
TOTAL_EX	18824.03	18824.03	00.00%
TOTAL_OC	9458.94	3880.17	-58.98%

67.73% **5338012**

	Actual:	Target:	Potential improvement:
FTEFACUL	4.00	3.86	-03.48%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	0.00	0.00	00.00%
FTETECHS	1.50	0.29	-80.39%
FTESUPPO	2.00	0.19	-90.30%
PAIDGRAD	14.00	5.94	-57.54%
PAIDUNDE	6.00	0.02	-99.61%
PUBSERVI	653.00	0.89	-99.86%
EXTERNAL	1.00	1.48	47.65%
CG_TOTAL	154.38	227.95	47.65%
FEES_TOT	0.00	0.99	99387.49%
PRIVTOTX	0.00	1.77	176953.97%
TOTAL_SA	338.38	97.39	-71.22%
TOT_OPS	104.72	104.73	00.00%
TOTAL_EX	395.93	395.93	00.00%
TOTAL_OC	3.52	3.52	00.00%

65.89% **6760003**

	Actual:	Target:	Potential improvement:
FTEFACUL	5.00	0.76	-84.82%
FTEPOSTD	0.00	0.00	00.00%

FTEANDP	0.00	0.00	00.00%
FTETECHS	1.00	0.00	-99.90%
FTESUPPO	1.00	0.37	-62.92%
PAIDGRAD	2.00	0.74	-62.93%
PAIDUNDE	0.00	0.00	00.00%
PUBSERVI	33.00	3.71	-88.77%
EXTERNAL	1.00	1.52	51.78%
CG_TOTAL	0.00	29.66	2965401.72%
FEES_TOT	0.00	1.04	103525.86%
PRIVTOTX	0.00	1.84	184322.10%
TOTAL_SA	18.83	18.83	00.00%
TOT_OPS	3.96	3.00	-24.24%
TOTAL_EX	383.76	343.33	-10.53%
TOTAL_OC	2316.10	0.00	-100.00%

60.89%

4557407

	Actual:	Target:	Potential improvement:
FTEFACUL	11.50	11.50	00.00%
FTEPOSTD	14.00	0.66	-95.32%
FTEANDP	1.00	1.00	00.00%
FTETECHS	15.50	15.50	00.00%
FTESUPPO	11.00	7.04	-35.99%
PAIDGRAD	5.00	5.00	00.00%
PAIDUNDE	9.00	9.00	00.00%
PUBSERVI	109.00	43.13	-60.43%
EXTERNAL	1.00	4.00	300.04%
CG_TOTAL	1823.09	2993.96	64.22%
FEES_TOT	0.00	2.86	285546.76%
PRIVTOTX	0.00	11.30	1129765.40%
TOTAL_SA	1321.37	1321.37	00.00%
TOT_OPS	721.80	721.80	00.00%
TOTAL_EX	7374.28	7374.28	00.00%
TOTAL_OC	5426.92	1190.75	-78.06%

54.02%

5217203

	Actual:	Target:	Potential improvement:
FTEFACUL	9.50	6.01	-36.69%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	2.00	0.77	-61.44%
FTETECHS	0.50	0.50	00.00%
FTESUPPO	3.00	3.00	00.00%
PAIDGRAD	13.00	1.89	-85.49%
PAIDUNDE	2.00	2.00	00.00%
PUBSERVI	32.00	19.97	-37.60%
EXTERNAL	1.00	1.85	85.11%
CG_TOTAL	372.05	688.70	85.11%

FEES_TOT	173.17	320.55	85.11%
PRIVTOTX	0.00	34.01	3400448.26%
TOTAL_SA	646.44	509.67	-21.16%
TOT_OPS	314.15	245.41	-21.88%
TOTAL_EX	3843.68	3843.68	00.00%
TOTAL_OC	165.20	165.20	00.00%

53.94%

4597907

	Actual:	Target:	Potential improvement:
FTEFACUL	3.00	3.00	00.00%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	1.50	0.95	-36.89%
FTETECHS	2.50	1.64	-34.34%
FTESUPPO	1.00	1.00	00.00%
PAIDGRAD	3.00	1.84	-38.69%
PAIDUNDE	3.00	2.29	-23.80%
PUBSERVI	94.00	11.66	-87.60%
EXTERNAL	1.00	1.85	85.38%
CG_TOTAL	220.86	409.42	85.38%
FEES_TOT	0.00	1.61	161220.49%
PRIVTOTX	0.00	8.61	860593.31%
TOTAL_SA	257.79	210.90	-18.19%
TOT_OPS	63.48	63.48	00.00%
TOTAL_EX	1559.51	1559.51	00.00%
TOTAL_OC	21.00	21.00	00.00%

50.00%

4038011

	Actual:	Target:	Potential improvement:
FTEFACUL	1.00	1.00	00.00%
FTEPOSTD	0.00	0.00	-33.32%
FTEANDP	1.00	0.00	-99.93%
FTETECHS	2.00	0.00	-99.97%
FTESUPPO	0.00	0.00	00.00%
PAIDGRAD	1.00	0.00	-99.92%
PAIDUNDE	4.00	0.00	-99.97%
PUBSERVI	8.00	0.01	-99.93%
EXTERNAL	1.00	2.00	100.02%
CG_TOTAL	0.00	14.92	1491778.23%
FEES_TOT	0.00	2.76	276233.69%
PRIVTOTX	0.00	4.75	474592.32%
TOTAL_SA	239.11	37.31	-84.40%
TOT_OPS	23.00	2.02	-91.22%
TOTAL_EX	114.00	49.49	-56.59%
TOTAL_OC	0.00	0.00	00.00%

49.09%

5637806

	Actual:	Target:	Potential improvement:
FTEFACUL	4.00	3.38	-15.45%
FTEPOSTD	4.00	0.30	-92.52%
FTEANDP	1.00	1.00	00.00%
FTETECHS	5.00	1.79	-64.12%
FTESUPPO	5.00	0.84	-83.12%
PAIDGRAD	5.00	5.00	00.00%
PAIDUNDE	1.00	1.00	00.00%
PUBSERVI	192.00	3.23	-98.32%
EXTERNAL	1.00	2.04	103.72%
CG_TOTAL	242.50	494.03	103.72%
FEES_TOT	0.00	0.62	61894.36%
PRIVTOTX	0.00	1.10	110142.69%
TOTAL_SA	583.65	349.44	-40.13%
TOT_OPS	135.93	135.93	00.00%
TOTAL_EX	418.92	418.92	00.00%
TOTAL_OC	79.47	79.47	00.00%

46.47%

8048512

	Actual:	Target:	Potential improvement:
FTEFACUL	2.00	1.50	-25.14%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	0.00	0.00	00.00%
FTETECHS	0.00	0.00	00.00%
FTESUPPO	1.00	0.18	-81.66%
PAIDGRAD	0.00	0.00	00.00%
PAIDUNDE	1.00	0.00	-99.90%
PUBSERVI	2.00	0.82	-59.10%
EXTERNAL	1.00	2.71	171.03%
CG_TOTAL	20.00	43.04	115.20%
FEES_TOT	0.00	3.42	341968.73%
PRIVTOTX	3.00	6.46	115.20%
TOTAL_SA	235.89	66.87	-71.65%
TOT_OPS	10.17	10.17	00.00%
TOTAL_EX	399.71	109.31	-72.65%
TOTAL_OC	0.00	0.00	00.01%

39.77%

7028213

	Actual:	Target:	Potential improvement:
FTEFACUL	5.00	5.00	00.00%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	1.00	1.00	00.00%
FTETECHS	0.50	0.47	-05.18%
FTESUPPO	3.00	2.84	-05.19%
PAIDGRAD	4.00	4.00	00.00%

PAIDUNDE	4.00	4.00	00.00%
PUBSERVI	19.00	10.69	-43.71%
EXTERNAL	0.00	0.53	52463.25%
CG_TOTAL	298.18	749.75	151.45%
FEES_TOT	48.07	120.87	151.45%
PRIVTOTX	14.23	35.78	151.45%
TOTAL_SA	555.93	555.93	00.00%
TOT_OPS	171.31	171.31	00.00%
TOTAL_EX	2543.21	2543.21	00.00%
TOTAL_OC	295.58	202.48	-31.50%

39.72%

1340012

	Actual:	Target:	Potential improvement:
FTEFACUL	0.50	0.50	00.00%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	0.00	0.00	00.00%
FTETECHS	2.00	0.17	-91.42%
FTESUPPO	0.00	0.00	00.00%
PAIDGRAD	4.00	1.65	-58.77%
PAIDUNDE	1.00	0.34	-66.12%
PUBSERVI	5.00	0.51	-89.84%
EXTERNAL	0.00	0.00	151.75%
CG_TOTAL	24.20	60.92	151.75%
FEES_TOT	0.00	0.02	2193.21%
PRIVTOTX	0.00	0.02	1802.32%
TOTAL_SA	42.00	29.17	-30.55%
TOT_OPS	88.40	12.09	-86.32%
TOTAL_EX	578.00	77.61	-86.57%
TOTAL_OC	860.00	23.41	-97.28%

37.01%

6558513

	Actual:	Target:	Potential improvement:
FTEFACUL	13.00	13.00	00.00%
FTEPOSTD	7.00	2.76	-60.56%
FTEANDP	1.00	1.00	00.00%
FTETECHS	2.00	2.00	00.00%
FTESUPPO	2.00	0.58	-71.04%
PAIDGRAD	36.00	28.34	-21.28%
PAIDUNDE	4.00	4.00	00.00%
PUBSERVI	6.00	6.00	00.00%
EXTERNAL	0.00	2.88	287539.30%
CG_TOTAL	602.42	1627.82	170.22%
FEES_TOT	29.19	78.88	170.22%
PRIVTOTX	0.00	1.94	193517.53%
TOTAL_SA	456.72	456.72	00.00%
TOT_OPS	494.15	489.16	-01.01%

TOTAL_EX	4155.25	4155.25	00.00%
TOTAL_OC	5545.81	626.79	-88.70%

36.47% **7725112**

	Actual:	Target:	Potential improvement:
FTEFACUL	1.50	1.50	00.00%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	1.00	0.26	-74.09%
FTETECHS	0.00	0.00	00.00%
FTESUPPO	0.00	0.00	00.00%
PAIDGRAD	3.00	0.31	-89.64%
PAIDUNDE	5.00	0.62	-87.58%
PUBSERVI	9.00	2.43	-73.01%
EXTERNAL	1.00	2.74	174.17%
CG_TOTAL	26.43	72.45	174.17%
FEES_TOT	0.00	10.41	1041269.61%
PRIVTOTX	0.00	10.07	1006673.09%
TOTAL_SA	111.64	90.97	-18.51%
TOT_OPS	46.97	13.54	-71.18%
TOTAL_EX	353.46	332.01	-06.07%
TOTAL_OC	178.82	49.04	-72.58%

34.11% **7017610**

	Actual:	Target:	Potential improvement:
FTEFACUL	2.00	1.59	-20.71%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	1.00	0.00	-99.90%
FTETECHS	0.00	0.00	00.00%
FTESUPPO	3.00	0.00	-99.97%
PAIDGRAD	0.00	0.00	00.00%
PAIDUNDE	7.00	0.00	-99.99%
PUBSERVI	29.00	0.31	-98.93%
EXTERNAL	1.00	2.93	193.14%
CG_TOTAL	10.04	29.43	193.14%
FEES_TOT	0.00	3.86	386181.09%
PRIVTOTX	0.00	7.42	741735.97%
TOTAL_SA	189.28	57.55	-69.60%
TOT_OPS	75.09	7.18	-90.43%
TOTAL_EX	102.81	92.84	-09.70%
TOTAL_OC	0.00	0.00	00.01%

33.88% **4049907**

	Actual:	Target:	Potential improvement:
FTEFACUL	2.00	1.64	-17.78%
FTEPOSTD	1.00	0.00	-99.90%
FTEANDP	2.00	0.10	-95.14%

FTETECHS	0.50	0.07	-85.37%
FTESUPPO	1.00	0.19	-80.65%
PAIDGRAD	2.00	0.00	-99.95%
PAIDUNDE	0.00	0.00	00.00%
PUBSERVI	13.00	2.65	-79.62%
EXTERNAL	1.00	2.95	195.18%
CG_TOTAL	0.00	68.92	6891419.67%
FEES_TOT	0.00	3.81	380645.65%
PRIVTOTX	6.39	18.87	195.18%
TOTAL_SA	161.54	74.90	-53.63%
TOT_OPS	106.25	8.74	-91.78%
TOTAL_EX	950.08	381.81	-59.81%
TOTAL_OC	227.15	3.99	-98.24%

33.33%

3240112

	Actual:	Target:	Potential improvement:
FTEFACUL	2.00	1.50	-25.00%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	1.00	0.00	-99.90%
FTETECHS	0.00	0.00	00.00%
FTESUPPO	1.00	0.00	-99.90%
PAIDGRAD	1.00	0.00	-99.90%
PAIDUNDE	1.00	0.00	-99.90%
PUBSERVI	16.00	0.00	-99.99%
EXTERNAL	1.00	3.00	200.00%
CG_TOTAL	0.00	22.38	2237898.84%
FEES_TOT	0.00	4.00	399899.79%
PRIVTOTX	0.00	7.12	711999.63%
TOTAL_SA	136.88	55.95	-59.13%
TOT_OPS	17.84	3.00	-83.19%
TOTAL_EX	594.49	73.28	-87.67%
TOTAL_OC	131.53	0.00	-100.00%

33.33%

3490113

	Actual:	Target:	Potential improvement:
FTEFACUL	2.50	1.50	-40.00%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	2.50	0.00	-99.96%
FTETECHS	0.00	0.00	00.00%
FTESUPPO	0.00	0.00	00.00%
PAIDGRAD	1.00	0.00	-99.90%
PAIDUNDE	2.00	0.00	-99.95%
PUBSERVI	9.00	0.00	-99.99%
EXTERNAL	1.00	3.00	200.00%
CG_TOTAL	0.00	22.38	2237898.84%
FEES_TOT	0.00	4.00	399899.79%

PRIVTOTX	0.00	7.12	711999.63%
TOTAL_SA	205.50	55.95	-72.77%
TOT_OPS	50.02	3.00	-94.00%
TOTAL_EX	1552.08	73.28	-95.28%
TOTAL_OC	841.75	0.00	-100.00%

33.33% **1179412**

	Actual:	Target:	Potential improvement:
FTEFACUL	2.00	1.50	-25.00%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	0.00	0.00	00.00%
FTETECHS	0.00	0.00	00.00%
FTESUPPO	1.00	0.00	-99.90%
PAIDGRAD	1.00	0.00	-99.90%
PAIDUNDE	3.00	0.00	-99.97%
PUBSERVI	17.00	0.00	-99.99%
EXTERNAL	1.00	3.00	200.00%
CG_TOTAL	0.00	22.38	2237899.52%
FEES_TOT	0.00	4.00	399899.91%
PRIVTOTX	0.00	7.12	711999.84%
TOTAL_SA	187.79	55.95	-70.21%
TOT_OPS	61.07	3.00	-95.09%
TOTAL_EX	207.60	73.28	-64.70%
TOTAL_OC	0.00	0.00	00.01%

33.33% **5849609**

	Actual:	Target:	Potential improvement:
FTEFACUL	10.00	1.50	-85.00%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	0.00	0.00	00.00%
FTETECHS	0.00	0.00	00.00%
FTESUPPO	1.00	0.00	-99.90%
PAIDGRAD	4.00	0.00	-99.97%
PAIDUNDE	0.00	0.00	00.00%
PUBSERVI	0.00	0.00	00.00%
EXTERNAL	1.00	3.00	200.00%
CG_TOTAL	0.00	22.38	2237899.52%
FEES_TOT	0.00	4.00	399899.91%
PRIVTOTX	0.00	7.12	711999.84%
TOTAL_SA	478.39	55.95	-88.30%
TOT_OPS	53.33	3.00	-94.37%
TOTAL_EX	242.76	73.28	-69.81%
TOTAL_OC	13.00	0.00	-99.99%

33.33% **5718701**

	Actual:	Target:	Potential improvement:
--	----------------	----------------	-------------------------------

FTEFACUL	13.00	1.50	-88.46%
FTEPOSTD	1.00	0.00	-99.90%
FTEANDP	0.00	0.00	00.00%
FTETECHS	1.00	0.00	-99.90%
FTESUPPO	2.00	0.00	-99.95%
PAIDGRAD	92.00	0.00	-100.00%
PAIDUNDE	13.00	0.00	-99.99%
PUBSERVI	93.00	0.00	-100.00%
EXTERNAL	1.00	3.00	200.00%
CG_TOTAL	0.00	22.38	2237899.03%
FEES_TOT	0.00	4.00	399899.83%
PRIVTOTX	0.00	7.12	711999.69%
TOTAL_SA	686.80	55.95	-91.85%
TOT_OPS	24.27	3.00	-87.64%
TOTAL_EX	912.81	73.28	-91.97%
TOTAL_OC	0.00	0.00	00.01%

3.67%

3828413

	Actual:	Target:	Potential improvement:
FTEFACUL	12.00	5.54	-53.82%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	14.50	1.12	-92.26%
FTETECHS	8.00	0.43	-94.63%
FTESUPPO	3.00	1.98	-33.97%
PAIDGRAD	0.00	0.00	00.00%
PAIDUNDE	3.00	1.63	-45.57%
PUBSERVI	7.00	7.00	00.00%
EXTERNAL	0.00	1.31	130553.65%
CG_TOTAL	27.40	746.60	2624.61%
FEES_TOT	0.00	50.21	5021231.40%
PRIVTOTX	0.00	19.18	1918111.20%
TOTAL_SA	1618.42	504.01	-68.86%
TOT_OPS	115.88	115.88	00.00%
TOTAL_EX	22107.79	5828.06	-73.64%
TOTAL_OC	16035.02	49.81	-99.69%

Human Relations Model

99.01%

4579813

	Actual:	Target:	Potential improvement:
FTEFACUL	0.50	0.50	00.00%
FTEPOSTD	0.00	0.00	-50.05%
FTEANDP	2.50	0.00	-99.98%
FTETECHS	0.00	0.00	-48.24%
FTESUPPO	0.00	0.00	00.00%

PAIDGRAD	2.00	0.50	-75.05%
PAIDUNDE	1.00	0.50	-50.04%
CONFEREN	1.00	1.01	01.00%
WORKSHOP	0.00	1.50	150208.76%
EXTERNAL	1.00	0.50	-50.05%
TOTAL_SA	155.31	15.09	-90.28%
TOT_OPS	21.13	4.25	-79.90%
TOTAL_EX	506.48	7.69	-98.48%
TOTAL_OC	0.00	0.00	00.00%

96.15%

4779413

	Actual:	Target:	Potential improvement:
FTEFACUL	1.50	1.50	00.00%
FTEPOSTD	0.00	0.00	-24.56%
FTEANDP	2.00	0.23	-88.30%
FTETECHS	0.00	0.00	00.00%
FTESUPPO	1.00	0.93	-06.91%
PAIDGRAD	4.00	0.30	-92.42%
PAIDUNDE	1.00	1.00	00.00%
CONFEREN	18.00	18.72	04.00%
WORKSHOP	3.00	9.33	210.98%
EXTERNAL	2.00	0.80	-60.07%
TOTAL_SA	195.48	195.48	00.00%
TOT_OPS	112.25	18.15	-83.83%
TOTAL_EX	2174.06	438.29	-79.84%
TOTAL_OC	44.00	0.67	-98.48%

95.96%

6059710

	Actual:	Target:	Potential improvement:
FTEFACUL	2.00	0.64	-67.86%
FTEPOSTD	0.00	0.00	-92.52%
FTEANDP	1.00	0.23	-77.48%
FTETECHS	0.00	0.00	00.00%
FTESUPPO	0.00	0.00	00.00%
PAIDGRAD	1.00	0.37	-62.97%
PAIDUNDE	2.00	0.74	-62.92%
CONFEREN	0.00	0.01	864.06%
WORKSHOP	2.00	2.08	04.21%
EXTERNAL	0.00	0.00	00.00%
TOTAL_SA	310.73	117.30	-62.25%
TOT_OPS	24.00	24.00	00.00%
TOTAL_EX	924.84	752.56	-18.63%
TOTAL_OC	325.20	112.34	-65.45%

93.75%

5798702

	Actual:	Target:	Potential improvement:
FTEFACUL	10.50	0.65	-93.77%
FTEPOSTD	19.00	0.00	-99.99%
FTEANDP	0.00	0.00	00.00%
FTETECHS	0.00	0.00	00.00%
FTESUPPO	5.50	0.55	-89.97%
PAIDGRAD	26.00	0.00	-100.00%
PAIDUNDE	13.00	0.10	-99.20%
CONFEREN	4.00	4.27	06.67%
WORKSHOP	2.00	2.13	06.67%
EXTERNAL	2.00	0.10	-94.80%
TOTAL_SA	35.36	35.36	00.00%
TOT_OPS	84.55	6.19	-92.67%
TOTAL_EX	1447.79	41.18	-97.16%
TOTAL_OC	706.08	0.00	-100.00%

90.00%

3828413

	Actual:	Target:	Potential improvement:
FTEFACUL	12.00	1.50	-87.50%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	14.50	2.00	-86.21%
FTETECHS	8.00	0.00	-99.99%
FTESUPPO	3.00	1.00	-66.67%
PAIDGRAD	0.00	0.00	00.00%
PAIDUNDE	3.00	0.00	-99.97%
CONFEREN	1.00	2.00	100.00%
WORKSHOP	9.00	10.00	11.11%
EXTERNAL	0.00	0.00	00.00%
TOTAL_SA	1618.42	354.71	-78.08%
TOT_OPS	115.88	22.97	-80.18%
TOTAL_EX	22107.79	69.44	-99.69%
TOTAL_OC	16035.02	10.00	-99.94%

88.81%

6007912

	Actual:	Target:	Potential improvement:
FTEFACUL	4.00	1.64	-58.94%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	1.50	1.50	00.00%
FTETECHS	0.00	0.00	00.00%
FTESUPPO	1.00	1.00	00.00%
PAIDGRAD	6.00	4.69	-21.88%
PAIDUNDE	8.00	2.87	-64.08%
CONFEREN	6.00	6.76	12.60%
WORKSHOP	90.00	101.34	12.60%

EXTERNAL	1.00	1.00	00.00%
TOTAL_SA	566.09	165.25	-70.81%
TOT_OPS	76.59	67.49	-11.88%
TOTAL_EX	3463.72	643.33	-81.43%
TOTAL_OC	38.92	38.92	00.00%

83.44%

6819503

	Actual:	Target:	Potential improvement:
FTEFACUL	2.00	0.33	-83.42%
FTEPOSTD	0.00	0.00	-40.09%
FTEANDP	0.00	0.00	00.00%
FTETECHS	0.00	0.00	-10.03%
FTESUPPO	0.50	0.31	-38.91%
PAIDGRAD	2.00	0.42	-79.16%
PAIDUNDE	3.00	0.00	-99.98%
CONFEREN	1.00	1.20	19.85%
WORKSHOP	1.00	1.20	19.85%
EXTERNAL	0.00	0.00	00.00%
TOTAL_SA	79.82	8.41	-89.47%
TOT_OPS	5.89	5.89	00.00%
TOTAL_EX	475.42	63.80	-86.58%
TOTAL_OC	21.10	0.59	-97.22%

83.33%

6988410

	Actual:	Target:	Potential improvement:
FTEFACUL	25.00	1.50	-94.00%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	0.00	0.00	00.00%
FTETECHS	0.00	0.00	00.00%
FTESUPPO	10.00	0.00	-99.99%
PAIDGRAD	9.00	0.00	-99.99%
PAIDUNDE	7.00	0.00	-99.99%
CONFEREN	0.00	1.00	99900.02%
WORKSHOP	50.00	60.00	20.00%
EXTERNAL	3.00	3.00	00.00%
TOTAL_SA	1490.20	55.95	-96.25%
TOT_OPS	663.75	3.00	-99.55%
TOTAL_EX	7641.60	73.28	-99.04%
TOTAL_OC	628.79	0.00	-100.00%

82.70%

6528613

	Actual:	Target:	Potential improvement:
FTEFACUL	8.00	1.68	-79.03%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	0.00	0.00	00.00%

FTETECHS	2.00	0.38	-80.87%
FTESUPPO	1.00	1.00	00.00%
PAIDGRAD	25.00	0.00	-99.99%
PAIDUNDE	14.00	0.10	-99.30%
CONFEREN	0.00	1.37	137390.74%
WORKSHOP	23.00	27.81	20.92%
EXTERNAL	1.00	1.00	00.00%
TOTAL_SA	346.84	88.38	-74.52%
TOT_OPS	408.44	34.03	-91.67%
TOTAL_EX	1045.32	1045.32	00.00%
TOTAL_OC	617.69	60.83	-90.15%

77.30%

2698813

	Actual:	Target:	Potential improvement:
FTEFACUL	44.00	5.65	-87.16%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	4.00	4.00	00.00%
FTETECHS	10.00	0.49	-95.09%
FTESUPPO	10.00	1.89	-81.08%
PAIDGRAD	12.00	12.00	00.00%
PAIDUNDE	12.00	0.33	-97.27%
CONFEREN	2.00	5.47	173.29%
WORKSHOP	30.00	38.81	29.37%
EXTERNAL	0.00	0.00	00.00%
TOTAL_SA	3180.70	319.70	-89.95%
TOT_OPS	416.16	116.87	-71.92%
TOTAL_EX	11928.98	2170.38	-81.81%
TOTAL_OC	1105.21	23.99	-97.83%

69.51%

6459913

	Actual:	Target:	Potential improvement:
FTEFACUL	3.00	1.24	-58.72%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	1.00	0.24	-76.11%
FTETECHS	1.00	0.41	-59.26%
FTESUPPO	0.00	0.00	00.00%
PAIDGRAD	1.00	1.00	00.00%
PAIDUNDE	4.00	4.00	00.00%
CONFEREN	2.00	2.88	43.85%
WORKSHOP	0.00	5.32	532341.50%
EXTERNAL	1.00	0.97	-03.17%
TOTAL_SA	278.12	97.94	-64.79%
TOT_OPS	44.04	44.04	00.00%
TOTAL_EX	801.69	250.60	-68.74%
TOTAL_OC	524.56	20.79	-96.04%

66.18%

7028213

	Actual:	Target:	Potential improvement:
FTEFACUL	5.00	5.00	00.00%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	1.00	1.00	00.00%
FTETECHS	0.50	0.00	-99.80%
FTESUPPO	3.00	2.33	-22.22%
PAIDGRAD	4.00	0.56	-86.10%
PAIDUNDE	4.00	0.00	-99.97%
CONFEREN	5.00	7.56	51.11%
WORKSHOP	3.00	6.67	122.22%
EXTERNAL	0.00	0.00	00.00%
TOTAL_SA	555.93	352.74	-36.55%
TOT_OPS	171.31	30.51	-82.19%
TOTAL_EX	2543.21	305.41	-87.99%
TOTAL_OC	295.58	0.00	-100.00%

66.14%

4769713

	Actual:	Target:	Potential improvement:
FTEFACUL	4.50	4.50	00.00%
FTEPOSTD	1.00	0.00	-99.90%
FTEANDP	0.00	0.00	00.00%
FTETECHS	4.00	1.18	-70.48%
FTESUPPO	5.00	1.43	-71.46%
PAIDGRAD	0.00	0.00	00.00%
PAIDUNDE	1.00	0.69	-31.04%
CONFEREN	9.00	13.61	51.19%
WORKSHOP	34.00	51.40	51.19%
EXTERNAL	3.00	1.92	-36.11%
TOTAL_SA	736.14	174.42	-76.31%
TOT_OPS	115.12	55.89	-51.45%
TOTAL_EX	4560.36	3022.38	-33.73%
TOTAL_OC	2567.07	187.98	-92.68%

62.52%

1427101

	Actual:	Target:	Potential improvement:
FTEFACUL	0.50	0.40	-20.19%
FTEPOSTD	0.00	0.00	-20.25%
FTEANDP	2.50	0.00	-99.97%
FTETECHS	0.00	0.00	-20.25%
FTESUPPO	1.50	0.40	-73.41%
PAIDGRAD	1.00	0.00	-99.92%
PAIDUNDE	3.00	0.00	-99.97%
CONFEREN	1.00	1.60	59.94%
WORKSHOP	0.00	0.80	79870.29%

EXTERNAL	0.00	0.00	00.00%
TOTAL_SA	29.26	9.88	-66.24%
TOT_OPS	4.58	4.58	00.00%
TOTAL_EX	61.64	0.08	-99.87%
TOTAL_OC	0.00	0.00	-20.24%

53.16%

8069913

	Actual:	Target:	Potential improvement:
FTEFACUL	0.50	0.16	-68.39%
FTEPOSTD	0.00	0.00	-86.10%
FTEANDP	0.50	0.14	-72.02%
FTETECHS	0.00	0.00	00.00%
FTESUPPO	0.50	0.14	-72.11%
PAIDGRAD	2.00	0.14	-93.06%
PAIDUNDE	1.00	0.00	-99.64%
CONFEREN	0.00	0.57	56457.31%
WORKSHOP	1.00	1.88	88.10%
EXTERNAL	0.00	0.00	00.00%
TOTAL_SA	15.09	15.09	00.00%
TOT_OPS	32.16	3.79	-88.20%
TOTAL_EX	61.57	37.09	-39.75%
TOTAL_OC	0.00	0.00	00.00%

51.04%

5557203

	Actual:	Target:	Potential improvement:
FTEFACUL	3.00	1.04	-65.48%
FTEPOSTD	1.00	0.00	-99.91%
FTEANDP	6.50	0.06	-99.08%
FTETECHS	0.00	0.00	00.00%
FTESUPPO	0.00	0.00	00.00%
PAIDGRAD	3.00	1.60	-46.64%
PAIDUNDE	5.00	1.19	-76.24%
CONFEREN	1.00	1.96	95.94%
WORKSHOP	3.00	5.88	95.94%
EXTERNAL	1.00	1.00	00.00%
TOTAL_SA	299.90	32.83	-89.05%
TOT_OPS	395.27	19.44	-95.08%
TOTAL_EX	241.73	76.68	-68.28%
TOTAL_OC	15.94	15.94	00.00%

50.00%

4038011

	Actual:	Target:	Potential improvement:
FTEFACUL	1.00	1.00	00.00%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	1.00	0.00	-99.90%

FTETECHS	2.00	0.00	-99.95%
FTESUPPO	0.00	0.00	00.00%
PAIDGRAD	1.00	1.00	00.00%
PAIDUNDE	4.00	1.00	-75.00%
CONFEREN	1.00	2.00	100.00%
WORKSHOP	1.00	3.00	200.00%
EXTERNAL	1.00	1.00	00.00%
TOTAL_SA	239.11	30.00	-87.45%
TOT_OPS	23.00	8.50	-63.04%
TOTAL_EX	114.00	15.00	-86.84%
TOTAL_OC	0.00	0.00	00.01%

49.82%

3846502

	Actual:	Target:	Potential improvement:
FTEFACUL	1.00	1.00	00.00%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	1.00	0.03	-97.25%
FTETECHS	2.50	0.04	-98.42%
FTESUPPO	0.00	0.00	00.00%
PAIDGRAD	1.00	0.92	-07.54%
PAIDUNDE	4.00	1.22	-69.46%
CONFEREN	1.00	2.01	100.74%
WORKSHOP	2.00	4.01	100.74%
EXTERNAL	1.00	1.00	00.00%
TOTAL_SA	87.93	35.68	-59.42%
TOT_OPS	10.92	10.92	00.00%
TOTAL_EX	215.33	34.01	-84.20%
TOTAL_OC	10.78	1.07	-90.07%

48.74%

5849609

	Actual:	Target:	Potential improvement:
FTEFACUL	10.00	0.59	-94.15%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	0.00	0.00	00.00%
FTETECHS	0.00	0.00	00.00%
FTESUPPO	1.00	0.46	-54.24%
PAIDGRAD	4.00	0.00	-99.97%
PAIDUNDE	0.00	0.00	00.00%
CONFEREN	1.00	2.05	105.17%
WORKSHOP	3.00	6.15	105.17%
EXTERNAL	1.00	0.26	-74.39%
TOTAL_SA	478.39	24.16	-94.95%
TOT_OPS	53.33	12.85	-75.91%
TOTAL_EX	242.76	242.76	00.00%
TOTAL_OC	13.00	11.19	-13.93%

48.55%

6389912

	Actual:	Target:	Potential improvement:
FTEFACUL	5.00	0.54	-89.19%
FTEPOSTD	0.00	0.00	-62.07%
FTEANDP	0.00	0.00	00.00%
FTETECHS	0.00	0.00	-45.44%
FTESUPPO	1.00	0.10	-89.57%
PAIDGRAD	1.00	0.00	-99.96%
PAIDUNDE	0.00	0.00	00.00%
CONFEREN	0.00	0.32	31585.54%
WORKSHOP	10.00	20.60	105.95%
EXTERNAL	1.00	1.00	00.00%
TOTAL_SA	130.78	27.01	-79.35%
TOT_OPS	3.60	3.60	00.00%
TOTAL_EX	460.54	42.33	-90.81%
TOTAL_OC	0.00	0.00	00.00%

47.08%

5125307

	Actual:	Target:	Potential improvement:
FTEFACUL	0.50	0.50	00.00%
FTEPOSTD	0.00	0.00	-72.93%
FTEANDP	0.00	0.00	00.00%
FTETECHS	0.00	0.00	-36.05%
FTESUPPO	2.00	0.17	-91.33%
PAIDGRAD	1.00	0.00	-99.97%
PAIDUNDE	3.00	0.17	-94.19%
CONFEREN	2.00	4.25	112.38%
WORKSHOP	4.00	8.50	112.38%
EXTERNAL	2.00	0.47	-76.71%
TOTAL_SA	76.99	46.41	-39.73%
TOT_OPS	117.41	2.08	-98.23%
TOTAL_EX	3831.92	79.87	-97.92%
TOTAL_OC	0.00	0.00	00.00%

46.87%

3598607

	Actual:	Target:	Potential improvement:
FTEFACUL	2.00	1.00	-50.00%
FTEPOSTD	2.00	0.05	-97.72%
FTEANDP	0.00	0.00	00.00%
FTETECHS	1.00	0.00	-99.90%
FTESUPPO	0.00	0.00	00.00%
PAIDGRAD	8.00	1.22	-84.71%
PAIDUNDE	2.00	1.00	-50.00%
CONFEREN	1.00	2.13	113.38%
WORKSHOP	0.00	2.96	295440.33%

EXTERNAL	2.00	0.96	-52.23%
TOTAL_SA	67.64	34.14	-49.53%
TOT_OPS	32.55	9.78	-69.95%
TOTAL_EX	2737.77	29.82	-98.91%
TOTAL_OC	25.93	25.93	00.00%

46.02% **5476702**

	Actual:	Target:	Potential improvement:
FTEFACUL	12.00	2.81	-76.56%
FTEPOSTD	1.50	0.00	-99.93%
FTEANDP	1.50	1.50	00.00%
FTETECHS	0.00	0.00	00.00%
FTESUPPO	1.50	1.50	00.00%
PAIDGRAD	5.00	3.37	-32.50%
PAIDUNDE	13.00	3.37	-74.04%
CONFEREN	13.00	28.25	117.31%
WORKSHOP	1.00	14.37	1337.50%
EXTERNAL	2.00	1.12	-43.75%
TOTAL_SA	360.46	99.97	-72.27%
TOT_OPS	203.94	67.04	-67.13%
TOTAL_EX	1110.51	1067.10	-03.91%
TOTAL_OC	374.27	41.19	-89.00%

43.90% **5209912**

	Actual:	Target:	Potential improvement:
FTEFACUL	5.50	0.50	-90.91%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	0.00	0.00	00.00%
FTETECHS	2.00	0.00	-99.95%
FTESUPPO	1.50	0.50	-66.67%
PAIDGRAD	7.00	0.00	-99.99%
PAIDUNDE	4.00	0.00	-99.97%
CONFEREN	1.00	2.28	127.77%
WORKSHOP	0.00	1.28	127672.36%
EXTERNAL	0.00	0.00	00.00%
TOTAL_SA	321.12	28.83	-91.02%
TOT_OPS	135.06	20.65	-84.71%
TOTAL_EX	480.46	480.46	00.00%
TOTAL_OC	36.08	22.73	-37.01%

42.23% **2458401**

	Actual:	Target:	Potential improvement:
FTEFACUL	2.00	1.49	-25.31%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	0.00	0.00	00.00%

FTETECHS	0.00	0.00	00.00%
FTESUPPO	1.00	0.83	-16.87%
PAIDGRAD	3.00	0.00	-99.97%
PAIDUNDE	5.00	0.66	-86.74%
CONFEREN	7.00	16.58	136.79%
WORKSHOP	0.00	8.29	828682.39%
EXTERNAL	1.00	0.66	-33.71%
TOTAL_SA	284.40	160.44	-43.59%
TOT_OPS	59.87	8.67	-85.52%
TOTAL_EX	264.82	264.82	00.00%
TOTAL_OC	0.00	0.00	00.01%

40.90%

2239813

	Actual:	Target:	Potential improvement:
FTEFACUL	2.00	2.00	00.00%
FTEPOSTD	0.00	0.00	-55.55%
FTEANDP	3.00	0.89	-70.31%
FTETECHS	1.00	0.67	-33.18%
FTESUPPO	4.00	1.78	-55.50%
PAIDGRAD	0.00	0.00	00.00%
PAIDUNDE	3.00	0.00	-99.96%
CONFEREN	10.00	24.45	144.50%
WORKSHOP	20.00	890.71	4353.54%
EXTERNAL	1.00	0.89	-11.11%
TOTAL_SA	413.44	199.99	-51.63%
TOT_OPS	658.82	54.48	-91.73%
TOTAL_EX	3646.83	2882.36	-20.96%
TOTAL_OC	826.67	36.86	-95.54%

39.41%

5718701

	Actual:	Target:	Potential improvement:
FTEFACUL	13.00	1.28	-90.17%
FTEPOSTD	1.00	0.00	-99.90%
FTEANDP	0.00	0.00	00.00%
FTETECHS	1.00	0.00	-99.90%
FTESUPPO	2.00	1.15	-42.42%
PAIDGRAD	92.00	0.00	-100.00%
PAIDUNDE	13.00	0.31	-97.64%
CONFEREN	3.00	7.61	153.74%
WORKSHOP	8.00	20.30	153.74%
EXTERNAL	1.00	1.00	00.00%
TOTAL_SA	686.80	148.64	-78.36%
TOT_OPS	24.27	24.27	00.00%
TOTAL_EX	912.81	263.50	-71.13%
TOTAL_OC	0.00	0.00	00.01%

38.66%

2718813

	Actual:	Target:	Potential improvement:
FTEFACUL	1.00	0.51	-48.97%
FTEPOSTD	0.00	0.00	-66.62%
FTEANDP	0.50	0.00	-99.39%
FTETECHS	1.00	0.00	-99.90%
FTESUPPO	0.00	0.00	00.00%
PAIDGRAD	0.00	0.00	00.00%
PAIDUNDE	4.00	0.00	-99.94%
CONFEREN	0.00	0.34	33901.82%
WORKSHOP	8.00	20.69	158.64%
EXTERNAL	1.00	1.00	00.00%
TOTAL_SA	108.96	18.91	-82.64%
TOT_OPS	22.40	1.05	-95.29%
TOTAL_EX	56.93	29.16	-48.79%
TOTAL_OC	0.00	0.01	409.33%

37.75%

3527212

	Actual:	Target:	Potential improvement:
FTEFACUL	9.50	1.77	-81.41%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	0.00	0.00	00.00%
FTETECHS	0.00	0.00	00.00%
FTESUPPO	4.00	0.53	-86.68%
PAIDGRAD	28.00	0.00	-100.00%
PAIDUNDE	3.00	0.53	-82.24%
CONFEREN	5.00	13.25	164.94%
WORKSHOP	13.00	34.44	164.94%
EXTERNAL	3.00	1.94	-35.50%
TOTAL_SA	245.74	151.76	-38.24%
TOT_OPS	20.61	6.82	-66.92%
TOTAL_EX	672.96	247.09	-63.28%
TOTAL_OC	0.00	0.00	00.01%

33.18%

7168510

	Actual:	Target:	Potential improvement:
FTEFACUL	2.50	2.50	00.00%
FTEPOSTD	0.00	0.00	-22.57%
FTEANDP	7.50	0.83	-88.93%
FTETECHS	15.00	0.36	-97.58%
FTESUPPO	1.50	1.50	00.00%
PAIDGRAD	2.00	1.04	-47.99%
PAIDUNDE	2.00	1.23	-38.70%
CONFEREN	9.00	27.12	201.36%
WORKSHOP	137.00	492.18	259.25%

EXTERNAL	2.00	1.02	-49.19%
TOTAL_SA	157.60	157.60	00.00%
TOT_OPS	351.73	46.18	-86.87%
TOTAL_EX	2229.40	1897.10	-14.91%
TOTAL_OC	62.03	36.29	-41.50%

31.90% **6838709**

	Actual:	Target:	Potential improvement:
FTEFACUL	2.00	2.00	00.00%
FTEPOSTD	0.00	0.00	-04.21%
FTEANDP	5.00	0.14	-97.29%
FTETECHS	1.00	0.00	-99.50%
FTESUPPO	4.00	0.96	-76.00%
PAIDGRAD	1.00	0.51	-49.39%
PAIDUNDE	3.00	1.31	-56.44%
CONFEREN	7.00	21.94	213.48%
WORKSHOP	8.00	25.08	213.48%
EXTERNAL	1.00	1.00	00.00%
TOTAL_SA	435.64	229.80	-47.25%
TOT_OPS	216.28	15.67	-92.76%
TOTAL_EX	2194.70	442.07	-79.86%
TOTAL_OC	0.00	0.00	00.00%

28.95% **5458205**

	Actual:	Target:	Potential improvement:
FTEFACUL	40.00	40.00	00.00%
FTEPOSTD	3.00	3.00	00.00%
FTEANDP	10.00	8.62	-13.82%
FTETECHS	19.00	16.05	-15.53%
FTESUPPO	7.00	7.00	00.00%
PAIDGRAD	43.00	43.00	00.00%
PAIDUNDE	36.00	13.21	-63.31%
CONFEREN	24.00	82.91	245.44%
WORKSHOP	11.00	58.19	429.01%
EXTERNAL	1.00	1.00	00.00%
TOTAL_SA	3386.27	2775.33	-18.04%
TOT_OPS	1442.29	1279.10	-11.31%
TOTAL_EX	18824.03	18824.03	00.00%
TOTAL_OC	9458.94	2712.01	-71.33%

28.51% **5188713**

	Actual:	Target:	Potential improvement:
FTEFACUL	12.00	8.10	-32.52%
FTEPOSTD	1.00	1.00	00.00%
FTEANDP	2.00	1.09	-45.52%

FTETECHS	20.00	0.03	-99.84%
FTESUPPO	5.00	5.00	00.00%
PAIDGRAD	10.00	10.00	00.00%
PAIDUNDE	39.00	4.42	-88.67%
CONFEREN	15.00	52.62	250.80%
WORKSHOP	17.00	59.64	250.80%
EXTERNAL	1.00	1.00	00.00%
TOTAL_SA	1354.63	522.65	-61.42%
TOT_OPS	392.10	392.10	00.00%
TOTAL_EX	11264.22	9242.59	-17.95%
TOTAL_OC	1147.51	1025.20	-10.66%

26.97%

3419912

	Actual:	Target:	Potential improvement:
FTEFACUL	6.00	0.68	-88.72%
FTEPOSTD	0.50	0.35	-29.05%
FTEANDP	0.00	0.00	00.00%
FTETECHS	1.00	0.00	-99.90%
FTESUPPO	3.00	0.32	-89.22%
PAIDGRAD	6.00	2.13	-64.58%
PAIDUNDE	1.00	0.35	-64.53%
CONFEREN	1.00	3.71	270.82%
WORKSHOP	0.00	2.00	199899.97%
EXTERNAL	0.00	0.00	00.00%
TOTAL_SA	426.47	89.85	-78.93%
TOT_OPS	89.98	51.56	-42.70%
TOTAL_EX	4376.49	1240.39	-71.66%
TOTAL_OC	258.74	258.74	00.00%

25.76%

5619507

	Actual:	Target:	Potential improvement:
FTEFACUL	3.00	1.99	-33.74%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	4.00	0.08	-97.98%
FTETECHS	0.00	0.00	00.00%
FTESUPPO	4.00	0.89	-77.75%
PAIDGRAD	11.00	0.00	-99.99%
PAIDUNDE	0.00	0.00	00.00%
CONFEREN	0.00	1.50	149628.67%
WORKSHOP	11.00	42.70	288.16%
EXTERNAL	2.00	2.00	00.00%
TOTAL_SA	135.03	135.03	00.00%
TOT_OPS	125.15	19.11	-84.73%
TOTAL_EX	492.07	173.17	-64.81%
TOTAL_OC	0.00	0.00	00.01%

25.73%

5389113

	Actual:	Target:	Potential improvement:
FTEFACUL	7.50	2.21	-70.49%
FTEPOSTD	2.00	0.00	-99.95%
FTEANDP	2.50	2.50	00.00%
FTETECHS	0.00	0.00	00.00%
FTESUPPO	7.00	2.34	-66.61%
PAIDGRAD	13.00	2.94	-77.35%
PAIDUNDE	3.00	2.29	-23.55%
CONFEREN	5.00	19.43	288.68%
WORKSHOP	36.00	139.92	288.68%
EXTERNAL	2.00	1.42	-29.21%
TOTAL_SA	478.89	244.23	-49.00%
TOT_OPS	248.48	83.54	-66.38%
TOTAL_EX	3506.23	1310.43	-62.63%
TOTAL_OC	391.26	65.04	-83.38%

25.43%

7409901

	Actual:	Target:	Potential improvement:
FTEFACUL	27.00	1.99	-92.63%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	2.00	0.04	-97.79%
FTETECHS	2.00	0.03	-98.33%
FTESUPPO	2.00	1.04	-48.19%
PAIDGRAD	8.00	0.00	-99.99%
PAIDUNDE	4.00	0.93	-76.75%
CONFEREN	6.00	23.60	293.30%
WORKSHOP	14.00	55.06	293.30%
EXTERNAL	1.00	1.00	00.00%
TOTAL_SA	230.68	230.09	-00.26%
TOT_OPS	42.38	12.35	-70.86%
TOTAL_EX	512.53	512.53	00.00%
TOTAL_OC	77.20	1.79	-97.68%

24.99%

2169212

	Actual:	Target:	Potential improvement:
FTEFACUL	1.00	1.00	00.00%
FTEPOSTD	0.00	0.00	-50.00%
FTEANDP	1.00	0.00	-99.87%
FTETECHS	0.00	0.00	00.00%
FTESUPPO	1.00	0.50	-49.91%
PAIDGRAD	0.00	0.00	00.00%
PAIDUNDE	2.00	0.50	-74.98%
CONFEREN	3.00	12.00	300.09%
WORKSHOP	0.00	6.06	605560.17%

EXTERNAL	1.00	0.50	-49.99%
TOTAL_SA	128.97	118.03	-08.48%
TOT_OPS	12.92	5.16	-60.09%
TOTAL_EX	1504.72	200.69	-86.66%
TOTAL_OC	0.00	0.02	1965.46%

24.20% **3858502**

	Actual:	Target:	Potential improvement:
FTEFACUL	1.00	0.00	-99.89%
FTEPOSTD	0.00	0.00	-99.79%
FTEANDP	0.00	0.00	-99.79%
FTETECHS	0.00	0.00	-99.79%
FTESUPPO	0.00	0.00	00.00%
PAIDGRAD	0.00	0.00	-93.15%
PAIDUNDE	3.00	0.00	-100.00%
CONFEREN	0.00	0.00	313.27%
WORKSHOP	0.00	0.00	119.93%
EXTERNAL	0.00	0.00	-93.15%
TOTAL_SA	2.39	0.03	-98.89%
TOT_OPS	2.16	0.01	-99.44%
TOTAL_EX	0.00	0.00	-00.01%
TOTAL_OC	0.00	0.00	-99.78%

23.59% **5637806**

	Actual:	Target:	Potential improvement:
FTEFACUL	4.00	4.00	00.00%
FTEPOSTD	4.00	0.01	-99.86%
FTEANDP	1.00	0.03	-96.67%
FTETECHS	5.00	0.03	-99.47%
FTESUPPO	5.00	3.17	-36.58%
PAIDGRAD	5.00	0.01	-99.89%
PAIDUNDE	1.00	0.83	-17.34%
CONFEREN	7.00	29.67	323.83%
WORKSHOP	10.00	42.38	323.83%
EXTERNAL	1.00	0.85	-14.55%
TOTAL_SA	583.65	256.72	-56.01%
TOT_OPS	135.93	36.37	-73.24%
TOTAL_EX	418.92	418.92	00.00%
TOTAL_OC	79.47	1.16	-98.54%

21.56% **1319913**

	Actual:	Target:	Potential improvement:
FTEFACUL	3.00	3.00	00.00%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	1.00	1.00	00.00%

FTETECHS	0.00	0.00	00.00%
FTESUPPO	2.00	1.39	-30.48%
PAIDGRAD	2.00	1.99	-00.69%
PAIDUNDE	8.00	2.08	-73.97%
CONFEREN	5.00	23.19	363.72%
WORKSHOP	9.00	41.73	363.72%
EXTERNAL	1.00	1.00	00.00%
TOTAL_SA	374.05	144.80	-61.29%
TOT_OPS	180.20	39.69	-77.97%
TOTAL_EX	8746.65	724.14	-91.72%
TOTAL_OC	638.83	38.19	-94.02%

20.83%

3298013

	Actual:	Target:	Potential improvement:
FTEFACUL	15.00	2.00	-86.67%
FTEPOSTD	3.00	0.00	-99.97%
FTEANDP	0.00	0.00	00.00%
FTETECHS	5.00	0.00	-99.98%
FTESUPPO	1.00	1.00	00.00%
PAIDGRAD	20.00	0.00	-99.99%
PAIDUNDE	5.00	1.00	-80.00%
CONFEREN	5.00	24.00	380.00%
WORKSHOP	0.00	12.00	1199900.00%
EXTERNAL	1.00	1.00	00.00%
TOTAL_SA	603.04	235.89	-60.88%
TOT_OPS	458.06	10.17	-97.78%
TOTAL_EX	2431.36	399.71	-83.56%
TOTAL_OC	2228.85	0.00	-100.00%

20.44%

5538612

	Actual:	Target:	Potential improvement:
FTEFACUL	3.50	2.25	-35.82%
FTEPOSTD	0.00	0.00	-25.91%
FTEANDP	1.00	1.00	00.00%
FTETECHS	0.00	0.00	00.00%
FTESUPPO	1.00	1.00	00.00%
PAIDGRAD	10.00	7.91	-20.85%
PAIDUNDE	2.00	0.00	-99.91%
CONFEREN	0.00	2.15	214953.88%
WORKSHOP	2.00	9.78	389.23%
EXTERNAL	0.00	0.00	00.00%
TOTAL_SA	270.10	239.40	-11.36%
TOT_OPS	265.78	60.94	-77.07%
TOTAL_EX	1260.23	1260.23	00.00%
TOTAL_OC	160.02	15.41	-90.37%

20.36%

5050113

	Actual:	Target:	Potential improvement:
FTEFACUL	1.00	0.48	-51.58%
FTEPOSTD	0.00	0.00	-30.85%
FTEANDP	0.00	0.00	00.00%
FTETECHS	0.00	0.00	-07.72%
FTESUPPO	1.00	0.28	-72.25%
PAIDGRAD	2.00	0.55	-72.32%
PAIDUNDE	1.00	0.00	-99.93%
CONFEREN	0.00	0.15	14591.19%
WORKSHOP	4.00	19.65	391.26%
EXTERNAL	1.00	0.97	-03.26%
TOTAL_SA	11.03	11.03	00.00%
TOT_OPS	10.01	2.09	-79.10%
TOTAL_EX	253.33	253.33	00.00%
TOTAL_OC	1179.46	0.01	-100.00%

20.00%

7578401

	Actual:	Target:	Potential improvement:
FTEFACUL	4.00	1.00	-75.00%
FTEPOSTD	1.00	1.00	00.00%
FTEANDP	0.00	0.00	00.00%
FTETECHS	8.00	0.00	-99.99%
FTESUPPO	0.00	0.00	00.00%
PAIDGRAD	8.00	6.00	-25.00%
PAIDUNDE	12.00	1.00	-91.67%
CONFEREN	1.00	5.00	400.00%
WORKSHOP	0.00	2.00	199900.00%
EXTERNAL	0.00	0.00	00.00%
TOTAL_SA	801.48	122.86	-84.67%
TOT_OPS	420.88	37.21	-91.16%
TOTAL_EX	1895.94	347.34	-81.68%
TOTAL_OC	709.95	581.43	-18.10%

19.77%

3879013

	Actual:	Target:	Potential improvement:
FTEFACUL	19.50	4.51	-76.85%
FTEPOSTD	1.00	0.84	-16.15%
FTEANDP	0.00	0.00	00.00%
FTETECHS	25.00	0.00	-100.00%
FTESUPPO	7.50	1.42	-81.08%
PAIDGRAD	13.00	7.54	-41.99%
PAIDUNDE	25.00	6.45	-74.21%
CONFEREN	4.00	20.23	405.74%
WORKSHOP	9.00	45.52	405.74%

EXTERNAL	2.00	1.00	-50.00%
TOTAL_SA	1828.62	471.80	-74.20%
TOT_OPS	1630.23	95.84	-94.12%
TOTAL_EX	4555.43	1177.95	-74.14%
TOTAL_OC	2622.03	11.78	-99.55%

18.97%

5368613

	Actual:	Target:	Potential improvement:
FTEFACUL	3.00	2.41	-19.70%
FTEPOSTD	11.00	0.00	-99.99%
FTEANDP	1.00	0.41	-58.69%
FTETECHS	0.50	0.20	-59.66%
FTESUPPO	1.50	1.47	-01.69%
PAIDGRAD	4.00	0.00	-99.98%
PAIDUNDE	0.00	0.00	00.00%
CONFEREN	2.00	10.54	427.07%
WORKSHOP	0.00	270.46	27046378.81%
EXTERNAL	3.00	0.27	-91.05%
TOTAL_SA	164.75	164.75	00.00%
TOT_OPS	167.76	25.55	-84.77%
TOTAL_EX	930.20	930.20	00.00%
TOTAL_OC	406.16	11.09	-97.27%

14.53%

7719901

	Actual:	Target:	Potential improvement:
FTEFACUL	12.00	2.01	-83.24%
FTEPOSTD	3.00	0.35	-88.18%
FTEANDP	2.50	0.62	-75.15%
FTETECHS	0.00	0.00	00.00%
FTESUPPO	0.50	0.50	00.00%
PAIDGRAD	18.00	4.17	-76.85%
PAIDUNDE	12.00	2.22	-81.53%
CONFEREN	2.00	13.77	588.35%
WORKSHOP	4.00	27.53	588.35%
EXTERNAL	1.00	1.00	00.00%
TOTAL_SA	527.63	75.84	-85.63%
TOT_OPS	200.00	41.03	-79.48%
TOTAL_EX	821.07	509.22	-37.98%
TOTAL_OC	1380.00	226.40	-83.59%

13.91%

6399403

	Actual:	Target:	Potential improvement:
FTEFACUL	1.00	1.00	00.00%
FTEPOSTD	0.50	0.00	-99.92%
FTEANDP	5.00	2.95	-40.96%

FTETECHS	12.50	1.38	-88.94%
FTESUPPO	7.50	3.50	-53.36%
PAIDGRAD	5.00	2.10	-57.96%
PAIDUNDE	4.00	2.25	-43.81%
CONFEREN	3.00	21.56	618.81%
WORKSHOP	41.00	294.71	618.81%
EXTERNAL	2.00	0.85	-57.65%
TOTAL_SA	409.69	409.69	00.00%
TOT_OPS	396.24	228.98	-42.21%
TOTAL_EX	4267.58	3155.78	-26.05%
TOTAL_OC	851.18	57.49	-93.25%

13.73%

7269601

	Actual:	Target:	Potential improvement:
FTEFACUL	5.00	0.67	-86.61%
FTEPOSTD	0.00	0.00	-44.43%
FTEANDP	2.00	0.00	-99.94%
FTETECHS	1.00	0.00	-99.93%
FTESUPPO	0.50	0.50	00.00%
PAIDGRAD	0.00	0.00	00.00%
PAIDUNDE	0.00	0.00	00.00%
CONFEREN	0.00	0.23	22544.48%
WORKSHOP	3.00	21.85	628.17%
EXTERNAL	1.00	1.00	00.00%
TOTAL_SA	400.93	58.08	-85.51%
TOT_OPS	180.54	13.55	-92.50%
TOTAL_EX	2410.69	104.29	-95.67%
TOTAL_OC	0.00	0.00	00.00%

13.20%

5678613

	Actual:	Target:	Potential improvement:
FTEFACUL	6.00	3.12	-48.00%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	11.00	0.90	-91.85%
FTETECHS	2.50	0.67	-73.10%
FTESUPPO	5.00	2.34	-53.13%
PAIDGRAD	0.00	0.00	00.00%
PAIDUNDE	4.00	0.55	-86.19%
CONFEREN	5.00	37.88	657.70%
WORKSHOP	1.00	904.21	90321.09%
EXTERNAL	2.00	1.45	-27.61%
TOTAL_SA	657.80	331.58	-49.59%
TOT_OPS	429.05	60.33	-85.94%
TOTAL_EX	3123.67	3123.67	00.00%
TOTAL_OC	295.36	37.09	-87.44%

13.12%

3930113

	Actual:	Target:	Potential improvement:
FTEFACUL	12.00	5.63	-53.12%
FTEPOSTD	5.00	3.00	-39.98%
FTEANDP	3.00	1.25	-58.34%
FTETECHS	0.50	0.38	-24.91%
FTESUPPO	1.00	1.00	00.00%
PAIDGRAD	25.00	0.00	-100.00%
PAIDUNDE	0.00	0.00	00.00%
CONFEREN	2.00	15.24	662.00%
WORKSHOP	10.00	500.62	4906.25%
EXTERNAL	2.00	1.25	-37.51%
TOTAL_SA	1334.72	118.41	-91.13%
TOT_OPS	511.73	30.97	-93.95%
TOTAL_EX	2425.84	1657.55	-31.67%
TOTAL_OC	1126.77	20.69	-98.16%

11.63%

4597907

	Actual:	Target:	Potential improvement:
FTEFACUL	3.00	2.34	-22.09%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	1.50	0.54	-64.14%
FTETECHS	2.50	0.30	-88.14%
FTESUPPO	1.00	1.00	00.00%
PAIDGRAD	3.00	0.76	-74.75%
PAIDUNDE	3.00	0.96	-67.90%
CONFEREN	2.00	17.19	759.68%
WORKSHOP	47.00	404.05	759.68%
EXTERNAL	1.00	1.00	00.00%
TOTAL_SA	257.79	134.69	-47.75%
TOT_OPS	63.48	33.74	-46.84%
TOTAL_EX	1559.51	1559.51	00.00%
TOTAL_OC	21.00	21.00	00.00%

11.63%

3027804

	Actual:	Target:	Potential improvement:
FTEFACUL	12.00	0.95	-92.08%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	0.00	0.00	00.00%
FTETECHS	0.00	0.00	00.00%
FTESUPPO	1.00	0.65	-35.01%
PAIDGRAD	4.00	0.00	-99.97%
PAIDUNDE	8.00	0.30	-96.24%
CONFEREN	1.00	8.60	759.76%
WORKSHOP	0.00	4.30	429779.69%

EXTERNAL	1.00	0.30	-69.94%
TOTAL_SA	113.07	79.37	-29.80%
TOT_OPS	36.52	7.07	-80.65%
TOTAL_EX	119.87	119.87	00.00%
TOTAL_OC	0.00	0.00	00.01%

11.27% 1947701

	Actual:	Target:	Potential improvement:
FTEFACUL	4.00	3.01	-24.72%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	1.00	1.00	00.00%
FTETECHS	0.00	0.00	00.00%
FTESUPPO	5.00	1.04	-79.11%
PAIDGRAD	6.00	2.89	-51.80%
PAIDUNDE	5.00	2.90	-41.93%
CONFEREN	3.00	26.62	787.24%
WORKSHOP	2.00	17.74	787.24%
EXTERNAL	1.00	1.00	00.00%
TOTAL_SA	679.25	28.92	-95.74%
TOT_OPS	166.80	42.17	-74.72%
TOTAL_EX	5539.82	732.47	-86.78%
TOTAL_OC	50.76	45.84	-09.70%

11.16% 6379407

	Actual:	Target:	Potential improvement:
FTEFACUL	21.00	3.95	-81.21%
FTEPOSTD	22.00	0.01	-99.97%
FTEANDP	2.00	0.21	-89.68%
FTETECHS	19.00	0.16	-99.18%
FTESUPPO	3.00	3.00	00.00%
PAIDGRAD	10.00	0.01	-99.94%
PAIDUNDE	2.00	0.01	-99.71%
CONFEREN	1.00	16.51	1550.57%
WORKSHOP	27.00	242.00	796.28%
EXTERNAL	2.00	2.00	00.00%
TOTAL_SA	202.19	142.60	-29.47%
TOT_OPS	78.44	43.86	-44.09%
TOTAL_EX	693.63	693.63	00.00%
TOTAL_OC	88.12	8.31	-90.57%

10.35% 5156212

	Actual:	Target:	Potential improvement:
FTEFACUL	7.00	2.50	-64.30%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	1.00	1.00	00.00%

FTETECHS	1.00	0.75	-24.99%
FTESUPPO	4.00	2.25	-43.77%
PAIDGRAD	0.00	0.00	00.00%
PAIDUNDE	0.00	0.00	00.00%
CONFEREN	3.00	28.99	866.23%
WORKSHOP	21.00	1002.50	4673.81%
EXTERNAL	2.00	1.00	-50.00%
TOTAL_SA	1169.21	260.55	-77.72%
TOT_OPS	322.54	90.78	-71.85%
TOTAL_EX	12116.25	4104.49	-66.12%
TOTAL_OC	162.48	82.31	-49.34%

9.94% **1739510**

	Actual:	Target:	Potential improvement:
FTEFACUL	0.50	0.50	00.00%
FTEPOSTD	0.50	0.00	-99.93%
FTEANDP	9.00	0.00	-99.99%
FTETECHS	0.50	0.00	-99.90%
FTESUPPO	1.00	0.00	-99.94%
PAIDGRAD	0.00	0.00	-66.91%
PAIDUNDE	0.00	0.00	00.00%
CONFEREN	0.00	0.33	33269.77%
WORKSHOP	2.00	20.12	905.93%
EXTERNAL	1.00	0.99	-00.76%
TOTAL_SA	431.59	18.61	-95.69%
TOT_OPS	51.81	1.01	-98.06%
TOTAL_EX	745.94	26.00	-96.51%
TOTAL_OC	0.00	0.00	00.00%

9.58% **5217203**

	Actual:	Target:	Potential improvement:
FTEFACUL	9.50	5.83	-38.61%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	2.00	1.33	-33.36%
FTETECHS	0.50	0.50	00.00%
FTESUPPO	3.00	3.00	-00.06%
PAIDGRAD	13.00	1.00	-92.29%
PAIDUNDE	2.00	1.00	-49.88%
CONFEREN	3.00	31.32	944.09%
WORKSHOP	4.00	675.45	16786.23%
EXTERNAL	1.00	1.00	00.00%
TOTAL_SA	646.44	374.99	-41.99%
TOT_OPS	314.15	66.53	-78.82%
TOTAL_EX	3843.68	2547.23	-33.73%
TOTAL_OC	165.20	43.22	-73.84%

9.28%

7449607

	Actual:	Target:	Potential improvement:
FTEFACUL	27.00	1.63	-93.97%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	11.00	2.36	-78.51%
FTETECHS	0.00	0.00	00.00%
FTESUPPO	15.00	2.74	-81.72%
PAIDGRAD	4.00	1.99	-50.16%
PAIDUNDE	2.00	2.00	00.00%
CONFEREN	2.00	21.54	977.06%
WORKSHOP	10.00	107.71	977.06%
EXTERNAL	2.00	1.50	-25.13%
TOTAL_SA	2769.87	424.38	-84.68%
TOT_OPS	415.17	92.96	-77.61%
TOTAL_EX	32408.17	1484.07	-95.42%
TOTAL_OC	470.60	28.88	-93.86%

8.92%

7017610

	Actual:	Target:	Potential improvement:
FTEFACUL	2.00	2.00	00.00%
FTEPOSTD	0.00	0.00	-49.16%
FTEANDP	1.00	0.15	-85.17%
FTETECHS	0.00	0.00	00.00%
FTESUPPO	3.00	0.65	-78.29%
PAIDGRAD	0.00	0.00	00.00%
PAIDUNDE	7.00	0.00	-99.96%
CONFEREN	0.00	2.09	208715.30%
WORKSHOP	2.00	22.43	1021.53%
EXTERNAL	1.00	1.00	00.00%
TOTAL_SA	189.28	121.03	-36.05%
TOT_OPS	75.09	7.76	-89.67%
TOTAL_EX	102.81	102.81	00.00%
TOTAL_OC	0.00	0.00	00.00%

8.51%

1179412

	Actual:	Target:	Potential improvement:
FTEFACUL	2.00	0.84	-58.22%
FTEPOSTD	0.00	0.00	-22.23%
FTEANDP	0.00	0.00	00.00%
FTETECHS	0.00	0.00	-10.99%
FTESUPPO	1.00	1.00	00.00%
PAIDGRAD	1.00	0.00	-99.92%
PAIDUNDE	3.00	0.00	-99.96%
CONFEREN	0.00	0.11	11257.81%
WORKSHOP	2.00	23.50	1075.13%

EXTERNAL	1.00	1.00	00.00%
TOTAL_SA	187.79	97.47	-48.10%
TOT_OPS	61.07	26.10	-57.26%
TOTAL_EX	207.60	182.99	-11.86%
TOTAL_OC	0.00	0.00	00.00%

8.41% **5338012**

	Actual:	Target:	Potential improvement:
FTEFACUL	4.00	1.99	-50.35%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	0.00	0.00	00.00%
FTETECHS	1.50	0.00	-99.93%
FTESUPPO	2.00	1.00	-50.24%
PAIDGRAD	14.00	0.00	-99.99%
PAIDUNDE	6.00	0.99	-83.49%
CONFEREN	2.00	23.79	1089.60%
WORKSHOP	0.00	11.90	1189497.39%
EXTERNAL	1.00	0.99	-00.94%
TOTAL_SA	338.38	233.77	-30.91%
TOT_OPS	104.72	10.13	-90.33%
TOTAL_EX	395.93	395.93	00.00%
TOTAL_OC	3.52	0.00	-99.97%

7.49% **7549506**

	Actual:	Target:	Potential improvement:
FTEFACUL	5.00	1.71	-65.76%
FTEPOSTD	0.50	0.00	-99.67%
FTEANDP	1.00	0.02	-97.54%
FTETECHS	1.00	0.02	-98.11%
FTESUPPO	1.00	1.00	00.00%
PAIDGRAD	1.00	0.00	-99.83%
PAIDUNDE	2.00	0.44	-78.11%
CONFEREN	1.00	13.36	1235.67%
WORKSHOP	3.00	40.07	1235.67%
EXTERNAL	1.00	1.00	00.00%
TOTAL_SA	433.83	130.94	-69.82%
TOT_OPS	31.94	12.32	-61.44%
TOTAL_EX	262.06	262.06	00.00%
TOTAL_OC	1401.51	0.95	-99.93%

6.93% **3837705**

	Actual:	Target:	Potential improvement:
FTEFACUL	5.50	0.80	-85.37%
FTEPOSTD	2.00	0.12	-94.16%
FTEANDP	1.00	1.00	00.00%

FTETECHS	0.50	0.14	-72.61%
FTESUPPO	0.00	0.00	00.00%
PAIDGRAD	33.00	1.06	-96.78%
PAIDUNDE	2.00	0.21	-89.56%
CONFEREN	0.00	1.01	100962.84%
WORKSHOP	2.00	28.87	1343.39%
EXTERNAL	1.00	1.00	00.00%
TOTAL_SA	140.27	39.72	-71.68%
TOT_OPS	125.18	16.09	-87.15%
TOTAL_EX	377.90	176.12	-53.39%
TOTAL_OC	70.28	70.28	00.00%

5.34%

6908513

	Actual:	Target:	Potential improvement:
FTEFACUL	21.50	21.50	00.00%
FTEPOSTD	22.00	12.40	-43.64%
FTEANDP	3.00	2.23	-25.82%
FTETECHS	2.00	2.00	00.00%
FTESUPPO	15.00	10.80	-27.98%
PAIDGRAD	75.00	75.00	00.00%
PAIDUNDE	15.00	14.05	-06.34%
CONFEREN	7.00	131.01	1771.55%
WORKSHOP	7.00	284.58	3965.42%
EXTERNAL	1.00	1.00	00.00%
TOTAL_SA	3537.72	2811.53	-20.53%
TOT_OPS	1824.47	1378.75	-24.43%
TOTAL_EX	26273.92	26273.92	00.00%
TOTAL_OC	27348.61	8177.54	-70.10%

5.30%

4809007

	Actual:	Target:	Potential improvement:
FTEFACUL	5.00	4.58	-08.37%
FTEPOSTD	3.50	1.33	-61.91%
FTEANDP	0.00	0.00	00.00%
FTETECHS	0.00	0.00	00.00%
FTESUPPO	1.00	1.00	00.00%
PAIDGRAD	13.00	11.00	-15.41%
PAIDUNDE	33.00	7.33	-77.79%
CONFEREN	0.00	9.33	932994.12%
WORKSHOP	3.00	56.64	1788.08%
EXTERNAL	1.00	1.00	00.00%
TOTAL_SA	520.64	449.60	-13.64%
TOT_OPS	264.44	120.19	-54.55%
TOTAL_EX	2915.25	1256.17	-56.91%
TOTAL_OC	365.17	208.02	-43.03%

4.43%

6939503

	Actual:	Target:	Potential improvement:
FTEFACUL	15.00	4.22	-71.88%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	76.00	6.92	-90.89%
FTETECHS	6.00	6.00	00.00%
FTESUPPO	12.00	9.91	-17.45%
PAIDGRAD	74.00	1.69	-97.72%
PAIDUNDE	68.00	2.25	-96.69%
CONFEREN	3.00	67.66	2155.21%
WORKSHOP	0.00	2002.87	200287356.08%
EXTERNAL	3.00	2.00	-33.33%
TOTAL_SA	6091.02	1031.07	-83.07%
TOT_OPS	1220.13	683.00	-44.02%
TOTAL_EX	70761.07	11397.44	-83.89%
TOTAL_OC	16647.65	257.25	-98.45%

4.28%

7339013

	Actual:	Target:	Potential improvement:
FTEFACUL	17.00	13.41	-21.12%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	23.00	2.00	-91.30%
FTETECHS	2.00	0.88	-55.99%
FTESUPPO	21.50	1.98	-90.79%
PAIDGRAD	0.00	0.00	00.00%
PAIDUNDE	13.00	2.08	-83.98%
CONFEREN	0.00	21.47	2146548.93%
WORKSHOP	55.00	1284.72	2235.86%
EXTERNAL	1.00	1.00	00.00%
TOTAL_SA	853.87	497.88	-41.69%
TOT_OPS	317.68	75.61	-76.20%
TOTAL_EX	6888.38	6888.38	00.00%
TOTAL_OC	1022.39	22.24	-97.82%

4.20%

6860007

	Actual:	Target:	Potential improvement:
FTEFACUL	8.00	4.10	-48.70%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	2.00	1.74	-13.19%
FTETECHS	7.00	1.10	-84.22%
FTESUPPO	8.00	3.21	-59.90%
PAIDGRAD	3.00	0.79	-73.59%
PAIDUNDE	1.00	0.79	-20.76%
CONFEREN	2.00	47.61	2280.54%
WORKSHOP	0.00	1479.11	147910502.20%

EXTERNAL	2.00	1.74	-13.19%
TOTAL_SA	1011.59	334.73	-66.91%
TOT_OPS	149.78	101.15	-32.47%
TOTAL_EX	4965.13	4965.13	00.00%
TOTAL_OC	831.14	73.33	-91.18%

4.19% **4029713**

	Actual:	Target:	Potential improvement:
FTEFACUL	0.50	0.00	-99.53%
FTEPOSTD	0.00	0.00	-96.91%
FTEANDP	0.00	0.00	-92.22%
FTETECHS	0.00	0.00	-85.21%
FTESUPPO	0.00	0.00	00.00%
PAIDGRAD	1.00	0.00	-99.99%
PAIDUNDE	0.00	0.00	00.00%
CONFEREN	0.00	0.02	2287.01%
WORKSHOP	0.00	0.02	2287.01%
EXTERNAL	0.00	0.00	00.00%
TOTAL_SA	17.10	0.25	-98.53%
TOT_OPS	1.75	0.01	-99.16%
TOTAL_EX	3.88	0.50	-87.21%
TOTAL_OC	0.00	0.00	00.00%

4.17% **3408910**

	Actual:	Target:	Potential improvement:
FTEFACUL	5.00	2.00	-60.00%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	0.00	0.00	00.00%
FTETECHS	0.00	0.00	00.00%
FTESUPPO	6.00	1.00	-83.33%
PAIDGRAD	0.00	0.00	00.00%
PAIDUNDE	44.00	1.00	-97.73%
CONFEREN	1.00	24.00	2300.00%
WORKSHOP	0.00	12.00	1199899.48%
EXTERNAL	2.00	1.00	-50.00%
TOTAL_SA	352.97	235.89	-33.17%
TOT_OPS	85.02	10.17	-88.04%
TOTAL_EX	723.00	399.71	-44.72%
TOTAL_OC	0.00	0.00	00.01%

4.06% **8029901**

	Actual:	Target:	Potential improvement:
FTEFACUL	40.50	40.50	00.00%
FTEPOSTD	5.00	3.26	-34.71%
FTEANDP	12.00	5.05	-57.94%

FTETECHS	29.50	9.15	-68.99%
FTESUPPO	20.00	20.00	00.00%
PAIDGRAD	49.00	31.19	-36.35%
PAIDUNDE	28.00	8.58	-69.37%
CONFEREN	5.00	123.30	2366.02%
WORKSHOP	3.00	73.98	2366.02%
EXTERNAL	1.00	1.00	00.00%
TOTAL_SA	1999.73	1920.51	-03.96%
TOT_OPS	729.65	729.65	00.00%
TOTAL_EX	9293.60	5045.81	-45.71%
TOTAL_OC	2079.64	2079.64	00.00%

3.77% 2309301

	Actual:	Target:	Potential improvement:
FTEFACUL	5.00	4.98	-00.39%
FTEPOSTD	2.00	0.01	-99.58%
FTEANDP	1.00	0.07	-93.19%
FTETECHS	1.00	0.05	-94.68%
FTESUPPO	4.00	4.00	00.00%
PAIDGRAD	14.00	0.01	-99.94%
PAIDUNDE	22.00	0.01	-99.96%
CONFEREN	0.00	17.81	1780456.05%
WORKSHOP	4.00	106.22	2555.51%
EXTERNAL	2.00	2.00	00.00%
TOTAL_SA	151.52	145.13	-04.22%
TOT_OPS	285.49	50.10	-82.45%
TOTAL_EX	240.65	240.65	00.00%
TOTAL_OC	779.01	2.48	-99.68%

3.70% 3582912

	Actual:	Target:	Potential improvement:
FTEFACUL	6.00	3.00	-50.00%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	7.00	1.00	-85.71%
FTETECHS	0.00	0.00	00.00%
FTESUPPO	4.00	1.00	-75.00%
PAIDGRAD	7.00	3.00	-57.14%
PAIDUNDE	275.00	3.00	-98.91%
CONFEREN	1.00	27.00	2600.00%
WORKSHOP	0.00	15.00	1499900.00%
EXTERNAL	1.00	1.00	00.00%
TOTAL_SA	1139.22	14.51	-98.73%
TOT_OPS	851.47	42.54	-95.00%
TOTAL_EX	3505.77	735.81	-79.01%
TOTAL_OC	472.69	46.90	-90.08%

3.64%

5448103

	Actual:	Target:	Potential improvement:
FTEFACUL	9.00	4.50	-50.00%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	2.00	2.00	00.00%
FTETECHS	2.00	1.50	-25.00%
FTESUPPO	4.00	4.00	00.00%
PAIDGRAD	0.00	0.00	00.00%
PAIDUNDE	5.00	0.00	-99.98%
CONFEREN	2.00	55.00	2650.00%
WORKSHOP	11.00	2004.00	18118.18%
EXTERNAL	2.00	2.00	00.00%
TOTAL_SA	687.44	449.53	-34.61%
TOT_OPS	670.57	122.16	-81.78%
TOTAL_EX	9455.37	6481.38	-31.45%
TOTAL_OC	830.09	82.80	-90.03%

3.61%

3098713

	Actual:	Target:	Potential improvement:
FTEFACUL	3.00	2.56	-14.77%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	2.00	0.51	-74.31%
FTETECHS	2.50	0.13	-94.73%
FTESUPPO	5.50	1.26	-77.06%
PAIDGRAD	5.00	1.02	-79.67%
PAIDUNDE	2.00	1.59	-20.50%
CONFEREN	1.00	27.72	2672.22%
WORKSHOP	5.00	186.93	3638.61%
EXTERNAL	2.00	1.09	-45.63%
TOTAL_SA	302.14	179.59	-40.56%
TOT_OPS	229.22	30.91	-86.52%
TOTAL_EX	1044.47	1044.47	00.00%
TOTAL_OC	23.11	23.11	00.00%

2.30%

4286213

	Actual:	Target:	Potential improvement:
FTEFACUL	15.00	15.00	00.00%
FTEPOSTD	11.00	4.36	-60.37%
FTEANDP	4.00	3.26	-18.43%
FTETECHS	5.00	2.28	-54.32%
FTESUPPO	12.00	12.00	00.00%
PAIDGRAD	36.00	29.01	-19.41%
PAIDUNDE	13.00	7.56	-41.88%
CONFEREN	2.00	87.02	4250.96%
WORKSHOP	0.00	294.95	29494752.84%

EXTERNAL	1.00	1.00	00.00%
TOTAL_SA	1111.85	1111.85	00.00%
TOT_OPS	1820.63	598.01	-67.15%
TOTAL_EX	6420.00	6420.00	00.00%
TOTAL_OC	7820.92	2710.36	-65.34%

2.00% **5547401**

	Actual:	Target:	Potential improvement:
FTEFACUL	49.00	28.01	-42.83%
FTEPOSTD	1.00	0.89	-11.16%
FTEANDP	4.00	1.79	-55.25%
FTETECHS	28.50	1.13	-96.04%
FTESUPPO	26.00	26.00	00.00%
PAIDGRAD	6.00	6.00	00.00%
PAIDUNDE	2.00	2.00	00.00%
CONFEREN	3.00	150.28	4909.19%
WORKSHOP	30.00	1502.76	4909.19%
EXTERNAL	2.00	2.00	00.00%
TOTAL_SA	5025.30	1206.05	-76.00%
TOT_OPS	544.61	544.61	00.00%
TOTAL_EX	25556.28	10135.35	-60.34%
TOTAL_OC	2795.37	793.37	-71.62%

1.81% **7279101**

	Actual:	Target:	Potential improvement:
FTEFACUL	0.50	0.05	-90.30%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	0.00	0.00	-36.37%
FTETECHS	0.00	0.00	00.00%
FTESUPPO	0.00	0.00	00.00%
PAIDGRAD	0.00	0.00	00.00%
PAIDUNDE	1.00	0.00	-99.71%
CONFEREN	0.00	0.06	5419.68%
WORKSHOP	0.00	1.71	171059.92%
EXTERNAL	1.00	0.09	-91.26%
TOTAL_SA	12.25	1.89	-84.60%
TOT_OPS	1.50	0.11	-92.65%
TOTAL_EX	2.50	2.50	00.00%
TOTAL_OC	0.00	0.01	630.29%

1.46% **4557407**

	Actual:	Target:	Potential improvement:
FTEFACUL	11.50	11.50	00.00%
FTEPOSTD	14.00	0.80	-94.30%
FTEANDP	1.00	1.00	00.00%
FTETECHS	15.50	0.90	-94.20%

FTESUPPO	11.00	10.92	-00.72%
PAIDGRAD	5.00	5.00	00.00%
PAIDUNDE	9.00	2.08	-76.88%
CONFEREN	1.00	68.41	6740.83%
WORKSHOP	1.00	133.49	13249.46%
EXTERNAL	1.00	1.00	00.00%
TOTAL_SA	1321.37	837.32	-36.63%
TOT_OPS	721.80	417.31	-42.18%
TOTAL_EX	7374.28	7374.28	00.00%
TOTAL_OC	5426.92	751.20	-86.16%

0.81% **2228213**

	Actual:	Target:	Potential improvement:
FTEFACUL	2.00	2.00	00.00%
FTEPOSTD	0.00	0.00	-20.68%
FTEANDP	1.00	0.60	-39.75%
FTETECHS	22.50	0.05	-99.77%
FTESUPPO	0.50	0.43	-14.28%
PAIDGRAD	2.00	2.00	00.00%
PAIDUNDE	15.00	1.70	-88.64%
CONFEREN	0.00	1.71	171080.02%
WORKSHOP	1.00	122.82	12182.27%
EXTERNAL	1.00	1.00	00.00%
TOTAL_SA	149.37	94.87	-36.49%
TOT_OPS	193.84	30.80	-84.11%
TOTAL_EX	681.14	681.14	00.00%
TOTAL_OC	0.00	0.00	00.00%

0.53% **1340012**

	Actual:	Target:	Potential improvement:
FTEFACUL	0.50	0.50	00.00%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	0.00	0.00	00.00%
FTETECHS	2.00	0.00	-99.98%
FTESUPPO	0.00	0.00	00.00%
PAIDGRAD	4.00	1.34	-66.60%
PAIDUNDE	1.00	0.01	-99.37%
CONFEREN	0.00	0.19	18792.55%
WORKSHOP	0.00	0.19	18792.55%
EXTERNAL	0.00	0.00	00.00%
TOTAL_SA	42.00	11.52	-72.56%
TOT_OPS	88.40	13.02	-85.27%
TOTAL_EX	578.00	63.09	-89.09%
TOTAL_OC	860.00	24.35	-97.17%

0.44%

3578803

	Actual:	Target:	Potential improvement:
FTEFACUL	1.00	1.00	00.00%
FTEPOSTD	0.00	0.00	-77.09%
FTEANDP	1.00	1.00	00.00%
FTETECHS	9.50	0.84	-91.17%
FTESUPPO	3.00	1.57	-47.78%
PAIDGRAD	2.00	0.19	-90.70%
PAIDUNDE	3.00	0.25	-91.74%
CONFEREN	0.00	13.99	1399280.80%
WORKSHOP	2.00	459.00	22849.85%
EXTERNAL	1.00	0.46	-54.18%
TOTAL_SA	172.10	167.00	-02.96%
TOT_OPS	182.60	89.72	-50.86%
TOTAL_EX	9356.48	2026.05	-78.35%
TOTAL_OC	317.58	38.17	-87.98%

0.27%

1479302

	Actual:	Target:	Potential improvement:
FTEFACUL	2.50	0.59	-76.50%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	0.00	0.00	00.00%
FTETECHS	0.00	0.00	-64.93%
FTESUPPO	0.00	0.00	00.00%
PAIDGRAD	6.00	0.00	-99.96%
PAIDUNDE	0.00	0.00	00.11%
CONFEREN	0.00	0.37	36478.28%
WORKSHOP	0.00	19.49	1948689.74%
EXTERNAL	1.00	1.00	00.00%
TOTAL_SA	24.20	20.86	-13.80%
TOT_OPS	49.80	4.04	-91.88%
TOTAL_EX	39.75	39.75	00.00%
TOTAL_OC	0.00	0.00	00.00%

0.18%

1919601

	Actual:	Target:	Potential improvement:
FTEFACUL	4.50	1.60	-64.37%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	0.00	0.00	00.00%
FTETECHS	0.50	0.00	-99.89%
FTESUPPO	0.00	0.00	00.00%
PAIDGRAD	8.00	0.00	-99.98%
PAIDUNDE	0.00	0.00	00.00%
CONFEREN	0.00	0.55	55356.90%
WORKSHOP	0.00	13.69	1368622.59%

EXTERNAL	1.00	1.00	00.00%
TOTAL_SA	99.42	45.16	-54.57%
TOT_OPS	161.50	40.04	-75.21%
TOTAL_EX	219.46	219.46	00.00%
TOTAL_OC	0.00	0.00	00.05%

0.10% **4160107**

	Actual:	Target:	Potential improvement:
FTEFACUL	1.00	0.47	-53.25%
FTEPOSTD	0.00	0.00	-06.65%
FTEANDP	0.00	0.00	00.00%
FTETECHS	0.00	0.00	-03.29%
FTESUPPO	0.50	0.47	-06.64%
PAIDGRAD	0.00	0.00	-06.65%
PAIDUNDE	0.00	0.00	06.33%
CONFEREN	0.00	1.87	186639.50%
WORKSHOP	0.00	0.99	98488.07%
EXTERNAL	0.00	0.00	00.00%
TOTAL_SA	12.75	11.53	-09.55%
TOT_OPS	5.36	5.36	00.00%
TOTAL_EX	11.46	0.35	-96.98%
TOTAL_OC	0.00	0.00	00.00%

0.10% **7127509**

	Actual:	Target:	Potential improvement:
FTEFACUL	0.50	0.50	00.00%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	1.00	0.05	-95.35%
FTETECHS	0.00	0.00	00.00%
FTESUPPO	0.00	0.00	00.00%
PAIDGRAD	1.00	1.00	00.00%
PAIDUNDE	2.00	0.68	-65.77%
CONFEREN	0.00	1.01	101267.99%
WORKSHOP	0.00	1.23	123256.13%
EXTERNAL	2.00	0.41	-79.62%
TOTAL_SA	31.60	15.98	-49.42%
TOT_OPS	15.44	12.90	-16.48%
TOTAL_EX	72.36	52.82	-27.01%
TOTAL_OC	54.02	12.59	-76.69%

0.07% **2689901**

	Actual:	Target:	Potential improvement:
FTEFACUL	6.00	0.61	-89.84%
FTEPOSTD	2.00	0.61	-69.72%
FTEANDP	0.00	0.00	00.00%
FTETECHS	1.00	0.00	-99.92%

FTESUPPO	0.00	0.00	00.00%
PAIDGRAD	8.00	3.63	-54.57%
PAIDUNDE	2.00	0.61	-69.68%
CONFEREN	0.00	3.03	303195.42%
WORKSHOP	0.00	1.54	153554.48%
EXTERNAL	0.00	0.00	00.00%
TOTAL_SA	247.12	74.52	-69.84%
TOT_OPS	142.38	22.56	-84.16%
TOTAL_EX	2366.89	212.24	-91.03%
TOTAL_OC	352.16	352.16	00.00%

0.06% 6369713

	Actual:	Target:	Potential improvement:
FTEFACUL	1.00	0.45	-55.12%
FTEPOSTD	0.00	0.00	-25.33%
FTEANDP	0.00	0.00	00.00%
FTETECHS	1.00	0.00	-99.91%
FTESUPPO	1.00	0.39	-61.37%
PAIDGRAD	1.00	1.00	00.00%
PAIDUNDE	1.00	0.00	-99.93%
CONFEREN	0.00	1.63	162613.56%
WORKSHOP	0.00	1.63	162613.60%
EXTERNAL	0.00	0.00	00.00%
TOTAL_SA	107.70	20.54	-80.93%
TOT_OPS	36.25	18.30	-49.50%
TOTAL_EX	413.81	413.81	00.00%
TOTAL_OC	26.08	13.82	-47.02%

0.06% 6760003

	Actual:	Target:	Potential improvement:
FTEFACUL	5.00	0.62	-87.69%
FTEPOSTD	0.00	0.00	-13.85%
FTEANDP	0.00	0.00	00.00%
FTETECHS	1.00	0.00	-99.90%
FTESUPPO	1.00	0.59	-41.14%
PAIDGRAD	2.00	0.00	-99.96%
PAIDUNDE	0.00	0.00	00.00%
CONFEREN	0.00	1.71	171103.46%
WORKSHOP	0.00	1.71	171103.46%
EXTERNAL	1.00	0.39	-61.34%
TOTAL_SA	18.83	18.83	00.00%
TOT_OPS	3.96	3.96	00.00%
TOTAL_EX	383.76	73.86	-80.75%
TOTAL_OC	2316.10	0.01	-100.00%

0.05%

3490113

	Actual:	Target:	Potential improvement:
FTEFACUL	2.50	1.00	-60.00%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	2.50	0.00	-99.96%
FTETECHS	0.00	0.00	00.00%
FTESUPPO	0.00	0.00	00.00%
PAIDGRAD	1.00	1.00	00.00%
PAIDUNDE	2.00	1.00	-50.00%
CONFEREN	0.00	2.00	199899.90%
WORKSHOP	0.00	3.00	299899.83%
EXTERNAL	1.00	1.00	00.00%
TOTAL_SA	205.50	30.00	-85.40%
TOT_OPS	50.02	8.50	-83.01%
TOTAL_EX	1552.08	15.00	-99.03%
TOTAL_OC	841.75	0.00	-100.00%

0.05%

5659805

	Actual:	Target:	Potential improvement:
FTEFACUL	2.00	1.00	-50.00%
FTEPOSTD	2.00	0.00	-99.95%
FTEANDP	0.00	0.00	00.00%
FTETECHS	0.00	0.00	00.00%
FTESUPPO	0.00	0.00	00.00%
PAIDGRAD	4.00	1.00	-75.00%
PAIDUNDE	1.00	1.00	00.00%
CONFEREN	0.00	2.00	199900.00%
WORKSHOP	0.00	3.00	299900.00%
EXTERNAL	1.00	1.00	00.00%
TOTAL_SA	48.27	30.00	-37.85%
TOT_OPS	290.88	8.50	-97.08%
TOTAL_EX	222.06	15.00	-93.25%
TOTAL_OC	0.00	0.00	00.01%

0.04%

7725112

	Actual:	Target:	Potential improvement:
FTEFACUL	1.50	1.17	-22.22%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	1.00	0.17	-83.25%
FTETECHS	0.00	0.00	00.00%
FTESUPPO	0.00	0.00	00.00%
PAIDGRAD	3.00	3.00	00.00%
PAIDUNDE	5.00	1.83	-63.33%
CONFEREN	0.00	2.33	233233.24%
WORKSHOP	0.00	2.50	249916.50%

EXTERNAL	1.00	0.83	-16.65%
TOTAL_SA	111.64	38.28	-65.71%
TOT_OPS	46.97	41.51	-11.63%
TOTAL_EX	353.46	181.31	-48.70%
TOTAL_OC	178.82	45.03	-74.82%

0.04% **5319301**

	Actual:	Target:	Potential improvement:
FTEFACUL	3.50	0.65	-81.43%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	0.00	0.00	00.00%
FTETECHS	1.00	0.00	-99.90%
FTESUPPO	1.00	0.52	-47.50%
PAIDGRAD	17.00	2.00	-88.23%
PAIDUNDE	2.00	0.00	-99.95%
CONFEREN	0.00	2.46	245915.65%
WORKSHOP	0.00	2.46	245915.65%
EXTERNAL	0.00	0.00	00.00%
TOTAL_SA	67.20	47.14	-29.85%
TOT_OPS	156.10	44.83	-71.28%
TOTAL_EX	1182.94	1182.94	00.00%
TOTAL_OC	706.48	44.49	-93.70%

0.04% **6929710**

	Actual:	Target:	Potential improvement:
FTEFACUL	10.00	0.64	-93.58%
FTEPOSTD	4.00	0.00	-99.98%
FTEANDP	0.00	0.00	00.00%
FTETECHS	3.00	0.00	-99.97%
FTESUPPO	1.00	0.61	-38.90%
PAIDGRAD	7.00	0.00	-99.99%
PAIDUNDE	0.00	0.00	00.00%
CONFEREN	0.00	2.72	271483.52%
WORKSHOP	0.00	2.72	271483.52%
EXTERNAL	1.00	0.31	-69.44%
TOTAL_SA	291.26	62.38	-78.58%
TOT_OPS	44.54	44.54	00.00%
TOTAL_EX	1986.75	1328.31	-33.14%
TOTAL_OC	548.34	60.27	-89.01%

0.03% **1098901**

	Actual:	Target:	Potential improvement:
FTEFACUL	1.00	0.52	-48.33%
FTEPOSTD	1.00	0.00	-99.90%
FTEANDP	0.00	0.00	00.00%

FTETECHS	12.00	0.00	-99.99%
FTESUPPO	2.00	0.49	-75.42%
PAIDGRAD	0.00	0.00	00.00%
PAIDUNDE	0.00	0.00	00.00%
CONFEREN	0.00	2.87	286730.02%
WORKSHOP	0.00	2.87	286730.02%
EXTERNAL	1.00	0.05	-94.90%
TOTAL_SA	1466.46	65.65	-95.52%
TOT_OPS	73.14	53.21	-27.25%
TOTAL_EX	1532.21	1532.21	00.00%
TOTAL_OC	534.80	72.42	-86.46%

0.03% 1596812

	Actual:	Target:	Potential improvement:
FTEFACUL	7.00	0.65	-90.71%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	0.00	0.00	00.00%
FTETECHS	0.00	0.00	00.00%
FTESUPPO	2.50	0.52	-79.00%
PAIDGRAD	3.00	2.00	-33.30%
PAIDUNDE	2.00	0.00	-99.95%
CONFEREN	0.00	2.90	289899.94%
WORKSHOP	0.00	2.90	289899.94%
EXTERNAL	0.00	0.00	00.00%
TOTAL_SA	334.21	73.28	-78.08%
TOT_OPS	205.54	68.44	-66.70%
TOTAL_EX	8561.67	1943.86	-77.30%
TOTAL_OC	84.79	80.48	-05.08%

0.03% 4199308

	Actual:	Target:	Potential improvement:
FTEFACUL	3.00	1.31	-56.46%
FTEPOSTD	1.50	0.65	-56.37%
FTEANDP	2.00	0.06	-96.96%
FTETECHS	0.00	0.00	00.00%
FTESUPPO	0.00	0.00	00.00%
PAIDGRAD	3.00	3.00	00.00%
PAIDUNDE	18.00	0.93	-94.86%
CONFEREN	0.00	3.23	322903.21%
WORKSHOP	0.00	3.23	322903.21%
EXTERNAL	1.00	0.61	-38.55%
TOTAL_SA	85.07	67.59	-20.55%
TOT_OPS	264.90	19.86	-92.50%
TOTAL_EX	155.87	155.87	00.00%
TOTAL_OC	567.55	241.20	-57.50%

0.02%

1439007

	Actual:	Target:	Potential improvement:
FTEFACUL	10.00	5.00	-49.99%
FTEPOSTD	6.00	0.00	-99.99%
FTEANDP	1.00	0.50	-49.96%
FTETECHS	8.00	0.00	-99.99%
FTESUPPO	2.00	2.00	00.00%
PAIDGRAD	0.00	0.00	00.00%
PAIDUNDE	0.00	0.00	00.00%
CONFEREN	0.00	6.00	599943.74%
WORKSHOP	0.00	5.21	521142.45%
EXTERNAL	0.00	0.00	00.00%
TOTAL_SA	377.10	330.84	-12.27%
TOT_OPS	156.88	17.52	-88.83%
TOTAL_EX	585.88	217.42	-62.89%
TOTAL_OC	0.00	0.00	00.00%

0.01%

6558513

	Actual:	Target:	Potential improvement:
FTEFACUL	13.00	5.53	-57.49%
FTEPOSTD	7.00	0.47	-93.24%
FTEANDP	1.00	0.80	-20.07%
FTETECHS	2.00	0.04	-97.91%
FTESUPPO	2.00	2.00	00.00%
PAIDGRAD	36.00	2.95	-91.81%
PAIDUNDE	4.00	0.50	-87.48%
CONFEREN	0.00	8.39	838942.29%
WORKSHOP	0.00	8.39	838942.29%
EXTERNAL	0.00	0.00	00.00%
TOTAL_SA	456.72	390.86	-14.42%
TOT_OPS	494.15	38.30	-92.25%
TOTAL_EX	4155.25	412.62	-90.07%
TOTAL_OC	5545.81	275.76	-95.03%

0.01%

4049907

	Actual:	Target:	Potential improvement:
FTEFACUL	2.00	2.00	00.00%
FTEPOSTD	1.00	0.55	-45.26%
FTEANDP	2.00	0.44	-77.80%
FTETECHS	0.50	0.22	-56.54%
FTESUPPO	1.00	1.00	00.00%
PAIDGRAD	2.00	0.00	-99.95%
PAIDUNDE	0.00	0.00	00.00%
CONFEREN	0.00	9.83	982745.55%
WORKSHOP	0.00	290.07	29006643.66%

EXTERNAL	1.00	0.43	-57.40%
TOTAL_SA	161.54	86.56	-46.42%
TOT_OPS	106.25	22.36	-78.95%
TOTAL_EX	950.08	950.08	00.00%
TOTAL_OC	227.15	11.95	-94.74%

0.01% **3289405**

	Actual:	Target:	Potential improvement:
FTEFACUL	5.00	2.01	-59.87%
FTEPOSTD	4.00	0.00	-99.98%
FTEANDP	0.00	0.00	00.00%
FTETECHS	26.00	0.18	-99.29%
FTESUPPO	2.50	0.98	-60.83%
PAIDGRAD	23.00	0.23	-99.02%
PAIDUNDE	25.00	0.73	-97.08%
CONFEREN	0.00	17.10	1709505.68%
WORKSHOP	0.00	17.10	1709505.68%
EXTERNAL	1.00	1.00	00.00%
TOTAL_SA	173.10	173.10	00.00%
TOT_OPS	795.06	15.80	-98.01%
TOTAL_EX	3185.32	813.03	-74.48%
TOTAL_OC	1756.28	29.20	-98.34%

0.01% **3240112**

	Actual:	Target:	Potential improvement:
FTEFACUL	2.00	1.79	-10.69%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	1.00	0.19	-81.34%
FTETECHS	0.00	0.00	00.00%
FTESUPPO	1.00	0.81	-18.98%
PAIDGRAD	1.00	0.49	-50.97%
PAIDUNDE	1.00	1.00	00.00%
CONFEREN	0.00	17.36	1735508.08%
WORKSHOP	0.00	17.36	1735508.12%
EXTERNAL	1.00	1.00	00.00%
TOTAL_SA	136.88	136.88	00.00%
TOT_OPS	17.84	14.27	-20.03%
TOTAL_EX	594.49	343.71	-42.18%
TOTAL_OC	131.53	8.15	-93.80%

0.00% **1159613**

	Actual:	Target:	Potential improvement:
FTEFACUL	6.50	3.01	-53.72%
FTEPOSTD	0.00	0.00	00.00%
FTEANDP	0.00	0.00	00.00%
FTETECHS	5.00	0.38	-92.30%

FTESUPPO	5.00	1.24	-75.20%
PAIDGRAD	11.00	3.84	-65.06%
PAIDUNDE	8.00	0.90	-88.70%
CONFEREN	0.00	20.73	2073359.77%
WORKSHOP	0.00	20.73	2073359.77%
EXTERNAL	1.00	1.00	00.00%
TOTAL_SA	633.75	221.23	-65.09%
TOT_OPS	675.65	47.81	-92.92%
TOTAL_EX	5095.03	1824.60	-64.19%
TOTAL_OC	1898.88	66.42	-96.50%

0.00% **1669702**

	Actual:	Target:	Potential improvement:
FTEFACUL	15.00	3.15	-79.01%
FTEPOSTD	2.00	0.00	-99.95%
FTEANDP	0.00	0.00	00.00%
FTETECHS	3.00	0.51	-82.95%
FTESUPPO	2.00	1.32	-34.04%
PAIDGRAD	0.00	0.00	00.00%
PAIDUNDE	20.00	1.00	-95.00%
CONFEREN	0.00	22.60	2259473.48%
WORKSHOP	0.00	22.60	2259473.48%
EXTERNAL	3.00	1.13	-62.41%
TOTAL_SA	731.17	233.48	-68.07%
TOT_OPS	540.13	30.91	-94.28%
TOTAL_EX	3407.29	1578.38	-53.68%
TOTAL_OC	588.53	81.34	-86.18%

0.00% **6538512**

	Actual:	Target:	Potential improvement:
FTEFACUL	11.50	2.23	-80.62%
FTEPOSTD	0.50	0.00	-99.80%
FTEANDP	0.50	0.19	-62.76%
FTETECHS	0.00	0.00	00.00%
FTESUPPO	1.50	1.17	-21.93%
PAIDGRAD	6.00	0.14	-97.61%
PAIDUNDE	1.00	1.00	00.00%
CONFEREN	0.00	23.09	2308651.63%
WORKSHOP	0.00	23.09	2308651.63%
EXTERNAL	1.00	1.00	00.00%
TOTAL_SA	728.73	250.14	-65.67%
TOT_OPS	150.56	14.76	-90.19%
TOTAL_EX	778.01	449.19	-42.26%
TOTAL_OC	49.73	4.62	-90.71%

0.00%

2449907

	Actual:	Target:	Potential improvement:
FTEFACUL	13.00	8.63	-33.60%
FTEPOSTD	6.00	0.01	-99.78%
FTEANDP	5.00	0.70	-86.02%
FTETECHS	11.00	0.03	-99.72%
FTESUPPO	7.00	7.00	00.00%
PAIDGRAD	2.00	2.00	00.00%
PAIDUNDE	3.00	2.30	-23.30%
CONFEREN	0.00	52.17	5216425.17%
WORKSHOP	0.00	52.17	5216425.17%
EXTERNAL	1.00	1.00	00.00%
TOTAL_SA	1710.43	378.12	-77.89%
TOT_OPS	351.56	231.86	-34.05%
TOTAL_EX	4888.63	4888.63	00.00%
TOTAL_OC	553.09	230.86	-58.26%

0.00%

6709903

	Actual:	Target:	Potential improvement:
FTEFACUL	12.00	12.00	00.00%
FTEPOSTD	6.00	4.09	-31.87%
FTEANDP	3.00	3.00	00.00%
FTETECHS	47.00	2.69	-94.27%
FTESUPPO	11.00	9.54	-13.30%
PAIDGRAD	33.00	25.40	-23.04%
PAIDUNDE	48.00	6.99	-85.43%
CONFEREN	0.00	97.71	9770997.40%
WORKSHOP	0.00	348.21	34821367.28%
EXTERNAL	2.00	2.00	00.00%
TOTAL_SA	2384.15	1712.62	-28.17%
TOT_OPS	2228.18	837.48	-62.41%
TOTAL_EX	15372.24	15372.24	00.00%
TOTAL_OC	2933.53	2933.53	00.00%

Internal Process Model

98.89%

1919601

	Actual:	Target:	Potential improvement:
FTEFACUL	4.50	1.54	-65.74%
FTEPOSTD	0.00	0.00	-01.11%
FTEANDP	0.00	0.52	51563.04%
FTETECHS	0.50	0.50	00.00%
FTESUPPO	0.00	0.49	49068.49%
PAIDGRAD	8.00	2.90	-63.75%

PAIDUNDE	0.00	0.00	-01.11%
SELFEVAL	0.00	0.97	97129.21%
EXTERNAL	1.00	1.00	00.00%
TOTAL_SA	99.42	26.59	-73.26%
TOT_OPS	161.50	70.46	-56.37%
TOTAL_EX	219.46	217.03	-01.11%
TOTAL_OC	0.00	0.00	-01.10%

95.12% **5547401**

	Actual:	Target:	Potential improvement:
FTEFACUL	49.00	32.93	-32.79%
FTEPOSTD	1.00	0.95	-04.88%
FTEANDP	4.00	7.06	76.58%
FTETECHS	28.50	28.50	00.00%
FTESUPPO	26.00	26.00	00.00%
PAIDGRAD	6.00	5.71	-04.88%
PAIDUNDE	2.00	1.90	-04.88%
SELFEVAL	1.00	20.61	1960.99%
EXTERNAL	2.00	21.41	970.70%
TOTAL_SA	5025.30	3053.12	-39.24%
TOT_OPS	544.61	518.04	-04.88%
TOTAL_EX	25556.28	10940.58	-57.19%
TOTAL_OC	2795.37	2658.99	-04.88%

89.03% **5448103**

	Actual:	Target:	Potential improvement:
FTEFACUL	9.00	7.31	-18.79%
FTEPOSTD	0.00	0.00	-10.97%
FTEANDP	2.00	2.62	31.05%
FTETECHS	2.00	2.00	00.00%
FTESUPPO	4.00	4.00	00.00%
PAIDGRAD	0.00	0.00	-10.97%
PAIDUNDE	5.00	1.92	-61.51%
SELFEVAL	0.00	0.89	88926.65%
EXTERNAL	2.00	2.00	00.00%
TOTAL_SA	687.44	212.07	-69.15%
TOT_OPS	670.57	113.68	-83.05%
TOTAL_EX	9455.37	5076.01	-46.32%
TOTAL_OC	830.09	398.70	-51.97%

88.58% **4038011**

	Actual:	Target:	Potential improvement:
FTEFACUL	1.00	0.82	-18.48%
FTEPOSTD	0.00	0.00	-11.42%
FTEANDP	1.00	1.00	00.00%

FTETECHS	2.00	2.00	00.00%
FTESUPPO	0.00	0.59	59028.77%
PAIDGRAD	1.00	0.54	-45.76%
PAIDUNDE	4.00	2.62	-34.51%
SELFEVAL	0.00	0.52	52086.07%
EXTERNAL	1.00	1.00	00.00%
TOTAL_SA	239.11	39.68	-83.41%
TOT_OPS	23.00	19.90	-13.49%
TOTAL_EX	114.00	100.98	-11.42%
TOTAL_OC	0.00	0.00	-11.41%

76.34%

1479302

	Actual:	Target:	Potential improvement:
FTEFACUL	2.50	0.50	-79.93%
FTEPOSTD	0.00	0.00	-23.66%
FTEANDP	0.00	0.00	00.00%
FTETECHS	0.00	0.00	00.00%
FTESUPPO	0.00	0.01	683.24%
PAIDGRAD	6.00	0.02	-99.71%
PAIDUNDE	0.00	0.00	-23.66%
SELFEVAL	0.00	0.33	32874.65%
EXTERNAL	1.00	1.00	00.00%
TOTAL_SA	24.20	18.47	-23.66%
TOT_OPS	49.80	1.10	-97.78%
TOTAL_EX	39.75	30.35	-23.66%
TOTAL_OC	0.00	0.00	-23.66%

73.17%

2309301

	Actual:	Target:	Potential improvement:
FTEFACUL	5.00	2.75	-44.97%
FTEPOSTD	2.00	0.01	-99.73%
FTEANDP	1.00	5.77	476.98%
FTETECHS	1.00	1.00	00.00%
FTESUPPO	4.00	4.00	00.00%
PAIDGRAD	14.00	2.38	-83.00%
PAIDUNDE	22.00	9.48	-56.89%
SELFEVAL	1.00	3.08	208.37%
EXTERNAL	2.00	2.00	00.00%
TOTAL_SA	151.52	110.87	-26.83%
TOT_OPS	285.49	28.20	-90.12%
TOTAL_EX	240.65	176.09	-26.83%
TOTAL_OC	779.01	0.01	-100.00%

71.80%

1749407

	Actual:	Target:	Potential improvement:
--	----------------	----------------	-------------------------------

FTEFACUL	3.00	1.82	-39.17%
FTEPOSTD	1.00	0.10	-90.35%
FTEANDP	2.00	2.00	00.00%
FTETECHS	0.00	0.10	9878.52%
FTESUPPO	1.00	1.00	00.00%
PAIDGRAD	2.00	0.44	-77.78%
PAIDUNDE	0.00	0.00	-28.20%
SELFEVAL	0.00	0.60	60036.37%
EXTERNAL	1.00	1.00	00.00%
TOTAL_SA	250.55	179.89	-28.20%
TOT_OPS	27.84	19.99	-28.20%
TOTAL_EX	2008.70	267.57	-86.68%
TOTAL_OC	10.67	7.66	-28.20%

69.14%

7538413

	Actual:	Target:	Potential improvement:
FTEFACUL	2.50	1.73	-30.86%
FTEPOSTD	1.00	0.00	-99.77%
FTEANDP	0.00	1.99	199244.00%
FTETECHS	3.50	3.50	00.00%
FTESUPPO	0.50	1.02	104.04%
PAIDGRAD	34.00	2.05	-93.97%
PAIDUNDE	2.00	1.38	-30.86%
SELFEVAL	1.00	1.00	00.00%
EXTERNAL	3.00	3.00	00.00%
TOTAL_SA	90.75	62.74	-30.86%
TOT_OPS	572.50	90.71	-84.16%
TOTAL_EX	2176.10	1131.47	-48.00%
TOTAL_OC	668.75	27.57	-95.88%

66.52%

7209313

	Actual:	Target:	Potential improvement:
FTEFACUL	0.50	0.33	-33.48%
FTEPOSTD	0.00	0.00	-33.48%
FTEANDP	0.00	0.00	33.08%
FTETECHS	0.00	0.01	405.65%
FTESUPPO	0.50	0.50	00.00%
PAIDGRAD	0.00	0.00	-33.48%
PAIDUNDE	0.00	0.00	-33.48%
SELFEVAL	0.00	0.33	33150.13%
EXTERNAL	0.00	0.33	33158.45%
TOTAL_SA	71.76	46.05	-35.82%
TOT_OPS	59.43	12.95	-78.21%
TOTAL_EX	1729.99	88.14	-94.91%
TOTAL_OC	81.83	0.21	-99.74%

66.38%

4597907

	Actual:	Target:	Potential improvement:
FTEFACUL	3.00	1.99	-33.62%
FTEPOSTD	0.00	0.00	-33.62%
FTEANDP	1.50	1.50	00.00%
FTETECHS	2.50	2.50	00.00%
FTESUPPO	1.00	1.00	00.00%
PAIDGRAD	3.00	1.99	-33.62%
PAIDUNDE	3.00	1.99	-33.62%
SELFEVAL	0.00	0.58	57838.53%
EXTERNAL	1.00	1.00	00.00%
TOTAL_SA	257.79	97.85	-62.04%
TOT_OPS	63.48	42.14	-33.62%
TOTAL_EX	1559.51	350.60	-77.52%
TOTAL_OC	21.00	13.94	-33.62%

65.40%

3240112

	Actual:	Target:	Potential improvement:
FTEFACUL	2.00	1.21	-39.51%
FTEPOSTD	0.00	0.00	-34.60%
FTEANDP	1.00	1.00	00.00%
FTETECHS	0.00	0.08	8128.82%
FTESUPPO	1.00	1.00	00.00%
PAIDGRAD	1.00	0.10	-89.87%
PAIDUNDE	1.00	0.65	-34.60%
SELFEVAL	0.00	0.50	50238.34%
EXTERNAL	1.00	1.00	00.00%
TOTAL_SA	136.88	69.44	-49.27%
TOT_OPS	17.84	11.67	-34.60%
TOTAL_EX	594.49	338.46	-43.07%
TOTAL_OC	131.53	86.02	-34.60%

62.46%

4557407

	Actual:	Target:	Potential improvement:
FTEFACUL	11.50	7.18	-37.53%
FTEPOSTD	14.00	0.43	-96.96%
FTEANDP	1.00	4.14	314.43%
FTETECHS	15.50	15.50	00.00%
FTESUPPO	11.00	11.00	00.00%
PAIDGRAD	5.00	3.12	-37.53%
PAIDUNDE	9.00	5.62	-37.53%
SELFEVAL	1.00	12.31	1131.25%
EXTERNAL	1.00	1.62	62.22%
TOTAL_SA	1321.37	825.40	-37.53%
TOT_OPS	721.80	450.88	-37.53%

TOTAL_EX	7374.28	4606.38	-37.53%
TOTAL_OC	5426.92	527.28	-90.28%

61.47% **5389113**

	Actual:	Target:	Potential improvement:
FTEFACUL	7.50	4.61	-38.53%
FTEPOSTD	2.00	0.14	-92.89%
FTEANDP	2.50	3.05	22.08%
FTETECHS	0.00	3.46	345854.70%
FTESUPPO	7.00	7.00	00.00%
PAIDGRAD	13.00	4.10	-68.48%
PAIDUNDE	3.00	1.84	-38.53%
SELFEVAL	1.00	4.04	304.44%
EXTERNAL	2.00	4.61	130.75%
TOTAL_SA	478.89	294.37	-38.53%
TOT_OPS	248.48	152.74	-38.53%
TOTAL_EX	3506.23	2155.25	-38.53%
TOTAL_OC	391.26	240.50	-38.53%

60.66% **3582912**

	Actual:	Target:	Potential improvement:
FTEFACUL	6.00	3.64	-39.34%
FTEPOSTD	0.00	0.00	-39.34%
FTEANDP	7.00	7.00	00.00%
FTETECHS	0.00	1.33	132755.94%
FTESUPPO	4.00	4.00	00.00%
PAIDGRAD	7.00	0.54	-92.24%
PAIDUNDE	275.00	2.52	-99.08%
SELFEVAL	0.00	0.25	25129.33%
EXTERNAL	1.00	1.00	00.00%
TOTAL_SA	1139.22	379.96	-66.65%
TOT_OPS	851.47	217.86	-74.41%
TOTAL_EX	3505.77	2126.73	-39.34%
TOTAL_OC	472.69	200.00	-57.69%

58.37% **8029901**

	Actual:	Target:	Potential improvement:
FTEFACUL	40.50	23.64	-41.63%
FTEPOSTD	5.00	2.92	-41.63%
FTEANDP	12.00	12.00	00.00%
FTETECHS	29.50	29.50	00.00%
FTESUPPO	20.00	20.00	00.00%
PAIDGRAD	49.00	4.28	-91.27%
PAIDUNDE	28.00	16.34	-41.63%
SELFEVAL	1.00	22.75	2175.01%

EXTERNAL	1.00	17.94	1693.76%
TOTAL_SA	1999.73	1167.31	-41.63%
TOT_OPS	729.65	425.92	-41.63%
TOTAL_EX	9293.60	5424.98	-41.63%
TOTAL_OC	2079.64	29.25	-98.59%

57.89%

3490113

	Actual:	Target:	Potential improvement:
FTEFACUL	2.50	1.45	-42.11%
FTEPOSTD	0.00	0.00	-42.11%
FTEANDP	2.50	2.50	00.00%
FTETECHS	0.00	0.40	40396.86%
FTESUPPO	0.00	0.67	67191.86%
PAIDGRAD	1.00	0.58	-42.11%
PAIDUNDE	2.00	0.71	-64.33%
SELFEVAL	0.00	0.56	56044.44%
EXTERNAL	1.00	1.00	00.00%
TOTAL_SA	205.50	88.68	-56.85%
TOT_OPS	50.02	28.96	-42.11%
TOTAL_EX	1552.08	897.29	-42.19%
TOTAL_OC	841.75	308.20	-63.39%

56.94%

1340012

	Actual:	Target:	Potential improvement:
FTEFACUL	0.50	0.28	-43.06%
FTEPOSTD	0.00	0.00	-43.06%
FTEANDP	0.00	0.71	71009.39%
FTETECHS	2.00	2.00	00.00%
FTESUPPO	0.00	0.18	18255.87%
PAIDGRAD	4.00	0.25	-93.72%
PAIDUNDE	1.00	0.57	-43.06%
SELFEVAL	0.00	0.13	12501.15%
EXTERNAL	0.00	0.22	21509.24%
TOTAL_SA	42.00	20.42	-51.38%
TOT_OPS	88.40	38.46	-56.49%
TOTAL_EX	578.00	329.11	-43.06%
TOTAL_OC	860.00	9.61	-98.88%

54.41%

1159613

	Actual:	Target:	Potential improvement:
FTEFACUL	6.50	3.54	-45.59%
FTEPOSTD	0.00	0.00	-45.59%
FTEANDP	0.00	5.89	588691.03%
FTETECHS	5.00	5.00	00.00%
FTESUPPO	5.00	5.00	00.00%
PAIDGRAD	11.00	2.28	-79.26%

PAIDUNDE	8.00	2.82	-64.76%
SELFEVAL	0.00	0.54	54305.17%
EXTERNAL	1.00	1.00	00.00%
TOTAL_SA	633.75	312.58	-50.68%
TOT_OPS	675.65	256.27	-62.07%
TOTAL_EX	5095.03	2771.96	-45.59%
TOTAL_OC	1898.88	182.00	-90.42%

53.73% **3598607**

	Actual:	Target:	Potential improvement:
FTEFACUL	2.00	1.07	-46.27%
FTEPOSTD	2.00	0.00	-99.94%
FTEANDP	0.00	0.24	23751.54%
FTETECHS	1.00	1.00	00.00%
FTESUPPO	0.00	0.20	19941.04%
PAIDGRAD	8.00	0.41	-94.87%
PAIDUNDE	2.00	1.07	-46.27%
SELFEVAL	1.00	1.00	00.00%
EXTERNAL	2.00	2.00	00.00%
TOTAL_SA	67.64	36.35	-46.27%
TOT_OPS	32.55	17.49	-46.27%
TOTAL_EX	2737.77	232.37	-91.51%
TOTAL_OC	25.93	2.23	-91.41%

53.56% **2449907**

	Actual:	Target:	Potential improvement:
FTEFACUL	13.00	6.96	-46.44%
FTEPOSTD	6.00	0.60	-90.05%
FTEANDP	5.00	5.00	00.00%
FTETECHS	11.00	11.00	00.00%
FTESUPPO	7.00	7.00	00.00%
PAIDGRAD	2.00	0.81	-59.33%
PAIDUNDE	3.00	1.61	-46.44%
SELFEVAL	1.00	7.00	599.64%
EXTERNAL	1.00	6.30	530.39%
TOTAL_SA	1710.43	916.19	-46.44%
TOT_OPS	351.56	188.31	-46.44%
TOTAL_EX	4888.63	2618.59	-46.44%
TOTAL_OC	553.09	221.87	-59.88%

53.44% **5849609**

	Actual:	Target:	Potential improvement:
FTEFACUL	10.00	1.38	-86.22%
FTEPOSTD	0.00	0.00	-46.56%
FTEANDP	0.00	0.82	82028.69%

FTETECHS	0.00	0.00	00.00%
FTESUPPO	1.00	1.00	00.00%
PAIDGRAD	4.00	2.14	-46.56%
PAIDUNDE	0.00	0.00	-46.56%
SELFEVAL	0.00	0.49	48887.31%
EXTERNAL	1.00	1.00	00.00%
TOTAL_SA	478.39	67.96	-85.79%
TOT_OPS	53.33	26.99	-49.39%
TOTAL_EX	242.76	129.73	-46.56%
TOTAL_OC	13.00	1.08	-91.69%

50.15%

7549506

	Actual:	Target:	Potential improvement:
FTEFACUL	5.00	1.43	-71.50%
FTEPOSTD	0.50	0.25	-49.85%
FTEANDP	1.00	1.00	00.00%
FTETECHS	1.00	1.00	00.00%
FTESUPPO	1.00	1.00	00.00%
PAIDGRAD	1.00	0.38	-61.77%
PAIDUNDE	2.00	1.00	-49.85%
SELFEVAL	1.00	1.03	03.40%
EXTERNAL	1.00	1.00	00.00%
TOTAL_SA	433.83	156.18	-64.00%
TOT_OPS	31.94	16.02	-49.85%
TOTAL_EX	262.06	131.43	-49.85%
TOTAL_OC	1401.51	25.52	-98.18%

49.47%

5319301

	Actual:	Target:	Potential improvement:
FTEFACUL	3.50	1.21	-65.35%
FTEPOSTD	0.00	0.00	-50.53%
FTEANDP	0.00	0.92	92041.06%
FTETECHS	1.00	1.00	00.00%
FTESUPPO	1.00	1.00	00.00%
PAIDGRAD	17.00	2.32	-86.36%
PAIDUNDE	2.00	0.99	-50.53%
SELFEVAL	0.00	0.29	29257.05%
EXTERNAL	0.00	0.55	55368.04%
TOTAL_SA	67.20	33.24	-50.53%
TOT_OPS	156.10	29.39	-81.17%
TOTAL_EX	1182.94	174.70	-85.23%
TOTAL_OC	706.48	349.48	-50.53%

49.07%

2458401

	Actual:	Target:	Potential improvement:
--	----------------	----------------	-------------------------------

FTEFACUL	2.00	0.98	-50.93%
FTEPOSTD	0.00	0.00	-50.93%
FTEANDP	0.00	0.68	67521.69%
FTETECHS	0.00	0.00	00.00%
FTESUPPO	1.00	1.00	00.00%
PAIDGRAD	3.00	1.47	-50.93%
PAIDUNDE	5.00	1.00	-80.07%
SELFEVAL	0.00	0.49	48681.97%
EXTERNAL	1.00	1.00	00.00%
TOTAL_SA	284.40	58.31	-79.50%
TOT_OPS	59.87	29.38	-50.93%
TOTAL_EX	264.82	129.94	-50.93%
TOTAL_OC	0.00	0.00	-50.92%

45.80%

5209912

	Actual:	Target:	Potential improvement:
FTEFACUL	5.50	2.23	-59.52%
FTEPOSTD	0.00	0.00	-54.20%
FTEANDP	0.00	0.88	87909.00%
FTETECHS	2.00	2.00	00.00%
FTESUPPO	1.50	1.50	00.00%
PAIDGRAD	7.00	1.75	-74.94%
PAIDUNDE	4.00	1.83	-54.20%
SELFEVAL	0.00	0.31	31311.85%
EXTERNAL	0.00	0.47	47108.64%
TOTAL_SA	321.12	147.08	-54.20%
TOT_OPS	135.06	49.43	-63.40%
TOTAL_EX	480.46	220.06	-54.20%
TOTAL_OC	36.08	0.60	-98.34%

45.57%

1596812

	Actual:	Target:	Potential improvement:
FTEFACUL	7.00	1.79	-74.41%
FTEPOSTD	0.00	0.00	-54.43%
FTEANDP	0.00	1.30	129975.46%
FTETECHS	0.00	0.81	80493.07%
FTESUPPO	2.50	2.50	00.00%
PAIDGRAD	3.00	1.37	-54.43%
PAIDUNDE	2.00	0.91	-54.43%
SELFEVAL	0.00	0.44	43408.92%
EXTERNAL	0.00	0.75	75165.29%
TOTAL_SA	334.21	152.31	-54.43%
TOT_OPS	205.54	81.15	-60.52%
TOTAL_EX	8561.67	797.19	-90.69%
TOTAL_OC	84.79	38.64	-54.43%

44.22%

6709903

	Actual:	Target:	Potential improvement:
FTEFACUL	12.00	5.31	-55.78%
FTEPOSTD	6.00	1.60	-73.40%
FTEANDP	3.00	10.06	235.41%
FTETECHS	47.00	47.00	00.00%
FTESUPPO	11.00	11.00	00.00%
PAIDGRAD	33.00	9.64	-70.80%
PAIDUNDE	48.00	21.23	-55.78%
SELFEVAL	1.00	2.76	175.97%
EXTERNAL	2.00	4.52	126.19%
TOTAL_SA	2384.15	1054.38	-55.78%
TOT_OPS	2228.18	838.55	-62.37%
TOTAL_EX	15372.24	6798.32	-55.78%
TOTAL_OC	2933.53	1088.94	-62.88%

43.95%

6007912

	Actual:	Target:	Potential improvement:
FTEFACUL	4.00	1.40	-65.10%
FTEPOSTD	0.00	0.00	-56.05%
FTEANDP	1.50	1.50	00.00%
FTETECHS	0.00	0.34	34230.28%
FTESUPPO	1.00	1.00	00.00%
PAIDGRAD	6.00	2.64	-56.05%
PAIDUNDE	8.00	0.37	-95.36%
SELFEVAL	0.00	0.44	43846.51%
EXTERNAL	1.00	1.00	00.00%
TOTAL_SA	566.09	55.51	-90.19%
TOT_OPS	76.59	33.66	-56.05%
TOTAL_EX	3463.72	294.10	-91.51%
TOTAL_OC	38.92	17.10	-56.05%

43.61%

5188713

	Actual:	Target:	Potential improvement:
FTEFACUL	12.00	5.23	-56.39%
FTEPOSTD	1.00	0.44	-56.39%
FTEANDP	2.00	4.75	137.40%
FTETECHS	20.00	20.00	00.00%
FTESUPPO	5.00	5.00	00.00%
PAIDGRAD	10.00	3.47	-65.33%
PAIDUNDE	39.00	17.01	-56.39%
SELFEVAL	0.00	3.06	305574.27%
EXTERNAL	1.00	3.67	266.50%
TOTAL_SA	1354.63	590.70	-56.39%
TOT_OPS	392.10	170.98	-56.39%

TOTAL_EX	11264.22	1489.59	-86.78%
TOTAL_OC	1147.51	123.35	-89.25%

42.96% **3879013**

	Actual:	Target:	Potential improvement:
FTEFACUL	19.50	8.38	-57.04%
FTEPOSTD	1.00	0.43	-57.04%
FTEANDP	0.00	4.05	405394.55%
FTETECHS	25.00	25.00	00.00%
FTESUPPO	7.50	7.50	00.00%
PAIDGRAD	13.00	2.68	-79.40%
PAIDUNDE	25.00	10.74	-57.04%
SELFEVAL	0.00	12.20	1219558.27%
EXTERNAL	2.00	2.00	00.00%
TOTAL_SA	1828.62	785.61	-57.04%
TOT_OPS	1630.23	381.18	-76.62%
TOTAL_EX	4555.43	1957.10	-57.04%
TOTAL_OC	2622.03	194.79	-92.57%

42.49% **4286213**

	Actual:	Target:	Potential improvement:
FTEFACUL	15.00	6.37	-57.51%
FTEPOSTD	11.00	0.22	-97.96%
FTEANDP	4.00	9.26	131.46%
FTETECHS	5.00	6.26	25.13%
FTESUPPO	12.00	12.00	00.00%
PAIDGRAD	36.00	15.30	-57.51%
PAIDUNDE	13.00	5.52	-57.51%
SELFEVAL	1.00	4.94	394.12%
EXTERNAL	1.00	3.41	240.89%
TOTAL_SA	1111.85	472.46	-57.51%
TOT_OPS	1820.63	387.37	-78.72%
TOTAL_EX	6420.00	2728.04	-57.51%
TOTAL_OC	7820.92	380.31	-95.14%

40.11% **4199308**

	Actual:	Target:	Potential improvement:
FTEFACUL	3.00	1.20	-59.89%
FTEPOSTD	1.50	0.24	-84.16%
FTEANDP	2.00	2.00	00.00%
FTETECHS	0.00	0.02	1523.41%
FTESUPPO	0.00	1.10	109440.17%
PAIDGRAD	3.00	0.78	-74.03%
PAIDUNDE	18.00	3.14	-82.56%
SELFEVAL	1.00	1.00	00.00%

EXTERNAL	1.00	1.00	00.00%
TOTAL_SA	85.07	34.12	-59.89%
TOT_OPS	264.90	6.05	-97.72%
TOTAL_EX	155.87	62.52	-59.89%
TOTAL_OC	567.55	0.80	-99.86%

40.04%

3419912

	Actual:	Target:	Potential improvement:
FTEFACUL	6.00	2.40	-59.96%
FTEPOSTD	0.50	0.06	-88.63%
FTEANDP	0.00	0.67	66700.40%
FTETECHS	1.00	1.00	00.00%
FTESUPPO	3.00	3.00	00.00%
PAIDGRAD	6.00	0.44	-92.70%
PAIDUNDE	1.00	0.40	-59.96%
SELFEVAL	1.00	2.37	137.11%
EXTERNAL	0.00	2.48	247761.74%
TOTAL_SA	426.47	170.74	-59.96%
TOT_OPS	89.98	36.02	-59.96%
TOTAL_EX	4376.49	853.20	-80.50%
TOTAL_OC	258.74	66.31	-74.37%

39.75%

5659805

	Actual:	Target:	Potential improvement:
FTEFACUL	2.00	0.80	-60.25%
FTEPOSTD	2.00	0.00	-99.94%
FTEANDP	0.00	0.05	5383.33%
FTETECHS	0.00	0.05	5383.33%
FTESUPPO	0.00	0.31	30811.12%
PAIDGRAD	4.00	0.46	-88.55%
PAIDUNDE	1.00	0.40	-60.25%
SELFEVAL	1.00	1.00	00.00%
EXTERNAL	1.00	1.00	00.00%
TOTAL_SA	48.27	19.19	-60.25%
TOT_OPS	290.88	11.02	-96.21%
TOTAL_EX	222.06	88.27	-60.25%
TOTAL_OC	0.00	0.00	13.44%

38.04%

6528613

	Actual:	Target:	Potential improvement:
FTEFACUL	8.00	2.34	-70.70%
FTEPOSTD	0.00	0.00	-61.96%
FTEANDP	0.00	0.84	83612.53%
FTETECHS	2.00	2.00	00.00%
FTESUPPO	1.00	1.00	00.00%
PAIDGRAD	25.00	6.05	-75.82%

PAIDUNDE	14.00	1.08	-92.30%
SELFEVAL	0.00	0.38	37942.26%
EXTERNAL	1.00	1.00	00.00%
TOTAL_SA	346.84	73.18	-78.90%
TOT_OPS	408.44	45.99	-88.74%
TOTAL_EX	1045.32	397.66	-61.96%
TOTAL_OC	617.69	6.79	-98.90%

37.93%

7028213

	Actual:	Target:	Potential improvement:
FTEFACUL	5.00	1.90	-62.07%
FTEPOSTD	0.00	0.00	-62.07%
FTEANDP	1.00	2.99	198.58%
FTETECHS	0.50	0.50	00.00%
FTESUPPO	3.00	3.00	00.00%
PAIDGRAD	4.00	0.77	-80.67%
PAIDUNDE	4.00	1.51	-62.19%
SELFEVAL	0.00	0.33	32922.85%
EXTERNAL	0.00	0.57	56742.59%
TOTAL_SA	555.93	184.34	-66.84%
TOT_OPS	171.31	64.98	-62.07%
TOTAL_EX	2543.21	964.67	-62.07%
TOTAL_OC	295.58	108.30	-63.36%

33.39%

2559712

	Actual:	Target:	Potential improvement:
FTEFACUL	4.00	0.50	-87.40%
FTEPOSTD	0.00	0.00	-66.61%
FTEANDP	0.00	0.00	75.02%
FTETECHS	0.00	0.00	00.00%
FTESUPPO	0.00	0.00	00.00%
PAIDGRAD	0.00	0.00	-66.61%
PAIDUNDE	0.00	0.00	-66.61%
SELFEVAL	0.00	0.33	33211.18%
EXTERNAL	1.00	1.00	00.00%
TOTAL_SA	102.51	18.96	-81.50%
TOT_OPS	124.97	1.12	-99.10%
TOTAL_EX	643.47	26.05	-95.95%
TOTAL_OC	0.00	0.00	-66.60%

32.13%

1728710

	Actual:	Target:	Potential improvement:
FTEFACUL	3.50	0.79	-77.38%
FTEPOSTD	0.00	0.00	-67.87%
FTEANDP	0.00	0.96	95401.14%

FTETECHS	0.00	0.01	691.91%
FTESUPPO	1.00	1.00	00.00%
PAIDGRAD	40.00	2.72	-93.21%
PAIDUNDE	0.00	0.00	-67.87%
SELFEVAL	0.00	0.24	23781.47%
EXTERNAL	0.00	0.56	55900.13%
TOTAL_SA	102.15	32.82	-67.87%
TOT_OPS	239.68	30.13	-87.43%
TOTAL_EX	6007.47	153.19	-97.45%
TOTAL_OC	54.83	17.62	-67.87%

29.15%

7578401

	Actual:	Target:	Potential improvement:
FTEFACUL	4.00	1.07	-73.14%
FTEPOSTD	1.00	0.29	-70.85%
FTEANDP	0.00	0.93	92814.31%
FTETECHS	8.00	8.00	00.00%
FTESUPPO	0.00	0.54	54206.91%
PAIDGRAD	8.00	0.62	-92.21%
PAIDUNDE	12.00	3.50	-70.85%
SELFEVAL	0.00	0.43	43048.71%
EXTERNAL	0.00	0.52	52105.85%
TOTAL_SA	801.48	233.67	-70.85%
TOT_OPS	420.88	87.97	-79.10%
TOTAL_EX	1895.94	552.76	-70.85%
TOTAL_OC	709.95	69.65	-90.19%

27.66%

6908513

	Actual:	Target:	Potential improvement:
FTEFACUL	21.50	5.95	-72.34%
FTEPOSTD	22.00	0.50	-97.73%
FTEANDP	3.00	8.95	198.34%
FTETECHS	2.00	12.37	518.37%
FTESUPPO	15.00	15.00	00.00%
PAIDGRAD	75.00	8.70	-88.41%
PAIDUNDE	15.00	4.15	-72.34%
SELFEVAL	1.00	4.93	392.93%
EXTERNAL	1.00	8.75	774.68%
TOTAL_SA	3537.72	978.48	-72.34%
TOT_OPS	1824.47	504.62	-72.34%
TOTAL_EX	26273.92	7266.94	-72.34%
TOTAL_OC	27348.61	940.22	-96.56%

27.28%

3837705

	Actual:	Target:	Potential improvement:
--	----------------	----------------	-------------------------------

FTEFACUL	5.50	1.50	-72.72%
FTEPOSTD	2.00	0.55	-72.72%
FTEANDP	1.00	1.00	00.00%
FTETECHS	0.50	0.50	00.00%
FTESUPPO	0.00	0.21	20657.05%
PAIDGRAD	33.00	0.41	-98.74%
PAIDUNDE	2.00	0.55	-72.72%
SELFEVAL	0.00	0.39	38692.27%
EXTERNAL	1.00	1.00	00.00%
TOTAL_SA	140.27	38.26	-72.72%
TOT_OPS	125.18	9.48	-92.43%
TOTAL_EX	377.90	103.08	-72.72%
TOTAL_OC	70.28	3.71	-94.72%

24.59% **7089612**

	Actual:	Target:	Potential improvement:
FTEFACUL	4.00	0.19	-95.22%
FTEPOSTD	0.00	0.00	-75.41%
FTEANDP	1.00	1.00	00.00%
FTETECHS	0.00	0.07	6727.35%
FTESUPPO	0.00	0.30	29929.84%
PAIDGRAD	3.00	0.38	-87.26%
PAIDUNDE	10.00	0.65	-93.53%
SELFEVAL	0.00	0.05	4495.94%
EXTERNAL	0.00	0.00	00.00%
TOTAL_SA	111.18	9.17	-91.75%
TOT_OPS	57.55	6.28	-89.08%
TOTAL_EX	270.03	66.41	-75.41%
TOTAL_OC	180.74	1.32	-99.27%

22.55% **3298013**

	Actual:	Target:	Potential improvement:
FTEFACUL	15.00	2.38	-84.15%
FTEPOSTD	3.00	0.68	-77.45%
FTEANDP	0.00	1.49	149245.24%
FTETECHS	5.00	5.00	00.00%
FTESUPPO	1.00	1.00	00.00%
PAIDGRAD	20.00	0.46	-97.70%
PAIDUNDE	5.00	1.13	-77.45%
SELFEVAL	0.00	1.32	132137.67%
EXTERNAL	1.00	1.00	00.00%
TOTAL_SA	603.04	135.97	-77.45%
TOT_OPS	458.06	96.94	-78.84%
TOTAL_EX	2431.36	548.20	-77.45%
TOTAL_OC	2228.85	24.92	-98.88%

21.56%

5458205

	Actual:	Target:	Potential improvement:
FTEFACUL	40.00	8.62	-78.44%
FTEPOSTD	3.00	0.65	-78.44%
FTEANDP	10.00	10.00	00.00%
FTETECHS	19.00	19.00	00.00%
FTESUPPO	7.00	7.00	00.00%
PAIDGRAD	43.00	5.06	-88.23%
PAIDUNDE	36.00	7.76	-78.44%
SELFEVAL	1.00	5.31	430.74%
EXTERNAL	1.00	8.73	772.53%
TOTAL_SA	3386.27	730.03	-78.44%
TOT_OPS	1442.29	310.94	-78.44%
TOTAL_EX	18824.03	4058.21	-78.44%
TOTAL_OC	9458.94	529.27	-94.40%

21.42%

3898001

	Actual:	Target:	Potential improvement:
FTEFACUL	3.00	0.18	-93.85%
FTEPOSTD	0.00	0.00	-78.58%
FTEANDP	0.00	0.24	23764.18%
FTETECHS	1.00	1.00	00.00%
FTESUPPO	0.00	0.07	7249.46%
PAIDGRAD	10.00	0.13	-98.69%
PAIDUNDE	2.00	0.43	-78.58%
SELFEVAL	0.00	0.05	5304.80%
EXTERNAL	0.00	0.09	9361.86%
TOTAL_SA	167.44	9.47	-94.35%
TOT_OPS	69.70	14.93	-78.58%
TOTAL_EX	414.83	88.85	-78.58%
TOTAL_OC	135.46	29.01	-78.58%

18.85%

5538612

	Actual:	Target:	Potential improvement:
FTEFACUL	3.50	0.66	-81.15%
FTEPOSTD	0.00	0.00	-81.15%
FTEANDP	1.00	1.00	00.00%
FTETECHS	0.00	0.09	8848.30%
FTESUPPO	1.00	1.00	00.00%
PAIDGRAD	10.00	1.13	-88.72%
PAIDUNDE	2.00	0.38	-81.15%
SELFEVAL	0.00	0.15	15155.46%
EXTERNAL	0.00	0.29	28674.65%
TOTAL_SA	270.10	49.34	-81.73%
TOT_OPS	265.78	24.55	-90.76%

TOTAL_EX	1260.23	237.49	-81.15%
TOTAL_OC	160.02	21.59	-86.51%

16.63% 5476702

	Actual:	Target:	Potential improvement:
FTEFACUL	12.00	2.00	-83.37%
FTEPOSTD	1.50	0.20	-86.89%
FTEANDP	1.50	1.50	00.00%
FTETECHS	0.00	0.00	142.08%
FTESUPPO	1.50	1.50	00.00%
PAIDGRAD	5.00	0.83	-83.37%
PAIDUNDE	13.00	2.16	-83.37%
SELFEVAL	0.00	1.70	169609.20%
EXTERNAL	2.00	2.00	00.00%
TOTAL_SA	360.46	59.95	-83.37%
TOT_OPS	203.94	9.62	-95.28%
TOTAL_EX	1110.51	184.70	-83.37%
TOTAL_OC	374.27	62.25	-83.37%

16.24% 5987403

	Actual:	Target:	Potential improvement:
FTEFACUL	8.50	1.38	-83.76%
FTEPOSTD	0.00	0.00	-83.76%
FTEANDP	3.00	3.00	00.00%
FTETECHS	0.00	0.42	41404.81%
FTESUPPO	0.00	1.64	163504.02%
PAIDGRAD	5.00	0.81	-83.76%
PAIDUNDE	10.00	1.38	-86.23%
SELFEVAL	0.00	0.16	16141.78%
EXTERNAL	0.00	0.10	9527.65%
TOTAL_SA	1582.16	114.53	-92.76%
TOT_OPS	323.84	52.60	-83.76%
TOTAL_EX	10095.45	1126.73	-88.84%
TOTAL_OC	1520.24	170.22	-88.80%

15.80% 7719901

	Actual:	Target:	Potential improvement:
FTEFACUL	12.00	1.68	-86.02%
FTEPOSTD	3.00	0.47	-84.20%
FTEANDP	2.50	2.50	00.00%
FTETECHS	0.00	0.04	4256.39%
FTESUPPO	0.50	1.23	145.84%
PAIDGRAD	18.00	0.67	-96.29%
PAIDUNDE	12.00	1.90	-84.20%
SELFEVAL	1.00	1.00	00.00%

EXTERNAL	1.00	1.00	00.00%
TOTAL_SA	527.63	83.39	-84.20%
TOT_OPS	200.00	21.31	-89.34%
TOTAL_EX	821.07	129.76	-84.20%
TOTAL_OC	1380.00	0.42	-99.97%
14.51%	6538512		

	Actual:	Target:	Potential improvement:
FTEFACUL	11.50	1.67	-85.49%
FTEPOSTD	0.50	0.01	-98.64%
FTEANDP	0.50	0.50	00.00%
FTETECHS	0.00	0.01	578.19%
FTESUPPO	1.50	1.50	00.00%
PAIDGRAD	6.00	0.87	-85.49%
PAIDUNDE	1.00	0.15	-85.49%
SELFEVAL	1.00	2.28	127.72%
EXTERNAL	1.00	1.00	00.00%
TOTAL_SA	728.73	57.71	-92.08%
TOT_OPS	150.56	21.84	-85.49%
TOTAL_EX	778.01	112.87	-85.49%
TOTAL_OC	49.73	0.00	-100.00%

14.34% **6967112**

	Actual:	Target:	Potential improvement:
FTEFACUL	8.00	1.15	-85.66%
FTEPOSTD	2.00	0.00	-99.92%
FTEANDP	0.00	1.55	155351.92%
FTETECHS	0.00	0.00	57.44%
FTESUPPO	2.00	2.00	00.00%
PAIDGRAD	18.00	0.67	-96.29%
PAIDUNDE	14.00	2.01	-85.66%
SELFEVAL	1.00	1.00	00.00%
EXTERNAL	1.00	1.00	00.00%
TOTAL_SA	798.99	114.58	-85.66%
TOT_OPS	214.65	30.78	-85.66%
TOTAL_EX	2257.29	323.71	-85.66%
TOTAL_OC	28.11	4.03	-85.66%

14.23% **6558513**

	Actual:	Target:	Potential improvement:
FTEFACUL	13.00	1.85	-85.77%
FTEPOSTD	7.00	0.02	-99.75%
FTEANDP	1.00	1.16	16.17%
FTETECHS	2.00	2.00	00.00%
FTESUPPO	2.00	2.00	00.00%
PAIDGRAD	36.00	0.95	-97.37%

PAIDUNDE	4.00	0.57	-85.77%
SELFEVAL	1.00	2.65	164.70%
EXTERNAL	0.00	0.79	78431.70%
TOTAL_SA	456.72	64.97	-85.77%
TOT_OPS	494.15	65.99	-86.65%
TOTAL_EX	4155.25	591.13	-85.77%
TOTAL_OC	5545.81	30.68	-99.45%

12.69% 4809007

	Actual:	Target:	Potential improvement:
FTEFACUL	5.00	0.63	-87.31%
FTEPOSTD	3.50	0.01	-99.65%
FTEANDP	0.00	1.23	122645.77%
FTETECHS	0.00	0.28	27806.08%
FTESUPPO	1.00	1.00	00.00%
PAIDGRAD	13.00	0.84	-93.57%
PAIDUNDE	33.00	1.53	-95.35%
SELFEVAL	1.00	1.00	00.00%
EXTERNAL	1.00	1.00	00.00%
TOTAL_SA	520.64	66.04	-87.31%
TOT_OPS	264.44	29.14	-88.98%
TOTAL_EX	2915.25	369.81	-87.31%
TOTAL_OC	365.17	46.32	-87.31%

10.37% 2689901

	Actual:	Target:	Potential improvement:
FTEFACUL	6.00	0.36	-94.06%
FTEPOSTD	2.00	0.21	-89.63%
FTEANDP	0.00	0.27	27151.62%
FTETECHS	1.00	1.00	00.00%
FTESUPPO	0.00	0.12	11436.35%
PAIDGRAD	8.00	0.19	-97.56%
PAIDUNDE	2.00	0.21	-89.63%
SELFEVAL	0.00	0.06	6073.58%
EXTERNAL	0.00	0.12	11431.25%
TOTAL_SA	247.12	25.62	-89.63%
TOT_OPS	142.38	14.76	-89.63%
TOTAL_EX	2366.89	107.55	-95.46%
TOTAL_OC	352.16	36.51	-89.63%

10.36% 5107303

	Actual:	Target:	Potential improvement:
FTEFACUL	2.00	0.18	-90.87%
FTEPOSTD	0.00	0.00	-89.64%
FTEANDP	1.00	1.00	00.00%

FTETECHS	0.00	0.13	12990.44%
FTESUPPO	0.00	0.02	2291.10%
PAIDGRAD	13.00	0.37	-97.19%
PAIDUNDE	6.00	0.14	-97.74%
SELFEVAL	0.00	0.09	8672.30%
EXTERNAL	0.00	0.00	00.00%
TOTAL_SA	79.70	6.82	-91.44%
TOT_OPS	206.57	10.39	-94.97%
TOTAL_EX	1012.86	104.92	-89.64%
TOTAL_OC	270.19	2.52	-99.07%

7.99% **4029713**

	Actual:	Target:	Potential improvement:
FTEFACUL	0.50	0.00	-99.48%
FTEPOSTD	0.00	0.00	-92.01%
FTEANDP	0.00	0.00	00.00%
FTETECHS	0.00	0.00	00.00%
FTESUPPO	0.00	0.00	00.00%
PAIDGRAD	1.00	0.00	-99.54%
PAIDUNDE	0.00	0.00	-92.01%
SELFEVAL	0.00	0.00	93.02%
EXTERNAL	0.00	0.00	56.59%
TOTAL_SA	17.10	0.05	-99.70%
TOT_OPS	1.75	0.11	-93.51%
TOTAL_EX	3.88	0.31	-92.01%
TOTAL_OC	0.00	0.00	-92.01%

0.12% **1378401**

	Actual:	Target:	Potential improvement:
FTEFACUL	3.00	0.00	-99.90%
FTEPOSTD	0.00	0.00	-99.85%
FTEANDP	0.00	0.00	00.13%
FTETECHS	0.00	0.00	00.28%
FTESUPPO	0.00	0.00	00.03%
PAIDGRAD	8.00	0.00	-99.94%
PAIDUNDE	0.00	0.00	-99.85%
SELFEVAL	0.00	0.00	25.45%
EXTERNAL	0.00	0.00	43.33%
TOTAL_SA	67.63	0.08	-99.88%
TOT_OPS	77.64	0.09	-99.88%
TOTAL_EX	370.87	0.47	-99.87%
TOTAL_OC	143.26	0.17	-99.88%

0.08% **7218712**

	Actual:	Target:	Potential improvement:
--	----------------	----------------	-------------------------------

FTEFACUL	1.00	0.00	-99.92%
FTEPOSTD	1.00	0.00	-99.99%
FTEANDP	0.00	0.00	00.00%
FTETECHS	0.00	0.00	00.00%
FTESUPPO	0.00	0.00	00.00%
PAIDGRAD	6.00	0.00	-99.98%
PAIDUNDE	1.00	0.00	-99.92%
SELFEVAL	0.00	0.00	00.00%
EXTERNAL	0.00	0.00	00.00%
TOTAL_SA	122.86	0.10	-99.92%
TOT_OPS	37.21	0.03	-99.92%
TOTAL_EX	347.34	0.29	-99.92%
TOTAL_OC	581.43	0.05	-99.99%

APPENDIX G: SURVEY QUESTIONNAIRE

Contact Information

1. Name of Center/Institute
2. Name of person completing survey:
3. What year was your Center/Institute created?

Organizational Information

4. Please indicate the primary discipline area addressed by the activities of your Center/Institute:

pd_ID	PrimaryDiscipline
1	Engineering
2	Physical Sciences
3	Environmental Sciences
4	Mathematical Sciences
5	Computer Sciences
6	Agricultural Sciences
7	Life Sciences
8	Psychology
9	Humanities
10	Education
11	Arts/Music
12	Social Sciences
13	Multidisciplinary

5. From 07/01/00 to 06/30/01, what percent of your Center/Institute activities were (sum to 100%).
 - Basic Research
 - Applied Research
 - Teaching
 - Training/Instruction/Extention

- Other Publications (reports, extension publications, abstracts, conference proceedings, etc.):
10. How many presentations were made by Center/Institute personnel from 07/01/00 to 06/30/01?
- Invited Presentations:
 - Other Presentations/Papers:
11. How many other important activities did your Center/Institute conduct, produce or play a major role in from 07/01/00 to 06/30/01?
- Conferences, Symposia, etc., organized:
 - Workshops, Training Sessions, etc.:
 - Professional Service (organizations, committees, etc.):
 - Community Public Service:
 - Artistic Performances, Objects, or Products:
 - Other Products:
 - Number of Patents/Copyrights:
12. How many courses were taught by individuals affiliated with your Center/Institute from 07/01/00 to 06/30/01?
- Graduate:
 - Undergraduate:
13. Please rank (by level of importance to your Center/Institute) the top three direct beneficiaries:
- 1st Ranked:
 - 2nd Ranked:
 - 3rd Ranked

db_ID	DirectBeneficiary
1	Researchers (Faculty and Staff)
2	Students (Graduate and Undergraduate)
3	Private Companies
4	Funding Organization
5	Schools (K-12)
6	Community Colleges and Universities
7	Local Governments
8	Regional Agencies
9	State Government
10	Other State Governments
11	Federal Government
12	International Governments
13	Non-profit Organizations
14	Other

14. Did/does your Center/Institute conduct self-evaluations using performance outcome measures to determine progress/direction?

- Yes
- No

15. Did/does your Center/Institute undergo any external evaluation?

ee_ID	ExternalEvaluation
1	No external evaluation
2	Evaluation by funding agency
3	University-based evaluation
4	Evaluation by professional organization

16. Briefly list the benefits of your Center/Institute to the State of Florida (both tangible and intangible)

REFERENCES

- Ali, A. I. (1993). Computational Aspects of DEA. Data Envelopment Analysis: Theory, Methodology, and Application. A. Charnes, W. W. Cooper, A. Y. Lewin and L. M. Seiford. Boston, Kluwer Academic Publishers.
- Alpert, D. (1985). "Performance and Paralysis: The Organizational Context of the American Research University." The Journal of Higher Education **56**(3): 241-281.
- Argyris, C. (1968). "On the Effectiveness of Research and Development Organizations." American Scientist **56**(4): 344-355.
- Banxia Software (2003). Frontier Analyst. Kendal, Banxia Software Limited.
- Barnard, C. I. (1938). The Functions of the Executive. Cambridge, Harvard University Press.
- Bennis, W. (1966). Toward a "truely" Scientific Management: the Concept of organizational Health. Changing Organizations. New York, McGraw-Hill Book Company: 34-78.
- Bozeman, B. and J. Melkers, Eds. (1993). Evaluating R&D Impacts: Methods and Practice. Boston, Kluwer Academic Publishers.
- Buenger, V., R. L. Daft, et al. (1996). "Competing Values in Organizations: Contextual Influences and Structural Consequences." Organization Science **7**(5): 557-576.
- Cameron, K. S. (1978). "Measuring Organizational Effectiveness in Institutions of Higher Education." Administrative Science Quarterly **23**(4): 604-632.
- Cameron, K. S. (1985). "Institutional Effectiveness in Higher Education: An Introduction." The Review of Higher Education **9**(1): 1-4.
- Cameron, K. S. (1986). "Effectiveness as Paradox: Consensus and Conflict in Conceptions of Organizational Effectiveness." Management Science **32**(5): 539-553.
- Cameron, K. S. and D. A. Whetten, Eds. (1983a). Organizational Effectiveness: A Comparison of Multiple Models. Organizational and Occupational Psychology. Orlando, Academic Press, Inc.
- Cameron, K. S. and D. A. Whetten (1983b). Organizational Effectiveness: One Model or Several? Organizational Effectiveness: A Comparison of Multiple Models. K. S.

- Cameron and D. A. Whetten. Orlando, Academic Press, Inc.: 1-24.
- Cameron, K. S. and D. A. Whetten (1983c). Some Conclusions about Organizational Effectiveness. Organizational Effectiveness: A Comparison of Multiple Models. K. S. Cameron and D. A. Whetten. Orlando, Academic Press, Inc.: 261-277.
- Campbell, J. P. (1977). On the Nature of Organizational Effectiveness. New Perspectives on Organizational Effectiveness. P. S. Goodman and J. M. Pennings. San Francisco, Jossey-Bass: 13-55.
- Campbell, J. P., D. A. Bownas, et al. (1974). The Measurement of Organizational Effectiveness: A Review of Relevant Research and Opinion. San Diego, CA, Navy Personnel Research and Development Center.
- Charnes, A., W. W. Cooper, et al. (1993). Data Envelopment Analysis: Theory, Methodology, and Application. Boston, Kluwer Academic Publishers.
- Charnes, A., W. W. Cooper, et al. (1978). "Measuring the Efficiency of Decision Making Units." European Journal of Operational Research **2**: 429-444.
- Cheng, J. L. and W. McKinley (1983). "Toward an Integration of Organization Research and Practice: A Contingency Study of Bureaucratic Control and Performance in Scientific Settings." Administrative Science Quarterly **28**(1): 85-100.
- Connolly, T., E. J. Conlon, et al. (1980). "Organizational Effectiveness: A Multiple-Constituency Approach." The Academy of Management Review **5**(2): 211-217.
- Council for Education Policy Research and Improvement (2003). Public Postsecondary Centers and Institutes. Tallahassee, Council for Education Policy, Research and Improvement.
- Craycraft, C. (1999). "A Review of Statistical Techniques Measuring Efficiency." Journal of Public Budgeting, Accounting & Financial Management **11**(1): 19-27.
- Cunningham, J. B. (1977). "Approaches to the Evaluation of Organizational Effectiveness." Academy of Management Review **2**(3): 463-474.
- Davey, M. E. (2003). Federal Research and Development Funding: FY2004. Washington, D.C., Congressional Research Service: 1-19.
- Etzioni, A. (1960). "Two Approaches to Organizational Analysis: A Critical and a Suggestion." Administrative Science Quarterly **5**(2): 257-278.
- Etzioni, A. (1964). Modern Organizations. Englewood Cliffs, Prentice Hall.
- Felsenthal, D. S. (1980). "Applying the Redundancy Concept to Administrative

- Organizations." Public Administration Review **40**(3): 247-252.
- French, W. L. and C. H. Bell, Jr (1999). Organization Development. Upper Saddle River, NJ, Prentice-Hall.
- Frost, S. H., J. C. Hearn, et al. (1997). "State Policy and the Public Research University: A Case Study of Manifest and Latent Tensions." The Journal of Higher Education **68**(4): 363-397.
- Gaertner, G. H. and S. Ramnarayan (1983). "Organizational Effectiveness: An Alternative Perspective." The Academy of Management Review **8**(1): 97-107.
- Geiger, R. L. (1990). "Organized Research Units: Their Role in the Development of University Research." The Journal of Higher Education **61**(1): 1-19.
- Georgiou, P. (1973). "The Goal Paradigm and Notes towards a Counter Paradigm." Administrative Science Quarterly **18**(3): 291-310.
- Georgopoulos, B. S. and A. S. Tannenbaum (1957). "A Study of Organizational Effectiveness." American Sociological Review **22**(5): 534-540.
- Golany, B. and E. Tamir (1995). "Evaluating Efficiency-Effectiveness-Equality Trade-Offs: A Data Envelopment Analysis Approach." Management Science **41**(7): 1172-1184.
- Goodman, P. S. and J. M. Pennings (1977b). Perspectives and Issues: An Introduction. New Perspectives on Organizational Effectiveness. P. S. Goodman and J. M. Pennings. San Francisco, Jossey-Bass, Inc.: 1-12.
- Goodman, P. S. and J. M. Pennings (1980). Critical Issues in Assessing Organizational Effectiveness. Organizational Assessment. E. E. Lawler, III, D. A. Nadler and C. Cammann. New York, John Wiley & Sons: 185-215.
- Gouldner, A. W. (1959). Organizational Analysis. Sociology Today. R. K. Merton, L. Broom and L. S. Cottrell, Jr. New York, Basic Books, Inc. **2**: 400-428.
- Gross, E. (1968). "Universities as Organizations: A Research Approach." American Sociological Review **33**(4): 518-544.
- Gross, E. (1969). "The Definition of Organizational Goals." The British Journal of Sociology **20**(3): 277-294.
- Hall, R. H. (1999). Organizations: Structures, Processes, & Outcomes. Englewood Cliffs, Prentice Hall.
- Hannan, M. T. and J. Freeman (1977). Obstacles to Comparative Studies. New Perspectives on Organizational Effectiveness. J. M. Pennings. San Francisco, Jossey-Bass: 106-131.

- Hickson, D. J., C. R. Hinings, et al. (1971). "A Strategic Contingencies' Theory of Intraorganizational Power." Administrative Science Quarterly **16**(2): 216-229.
- Hossler, D., J. P. Lund, et al. (1997). "State Funding for Higher Education: The Sisyphean Task." The Journal of Higher Education **68**(2): 160-190.
- Huselid, M. A. (1995). "The Impact of Human Resource Management Practice on Turnover, Productivity, and Corporate Financial Performance." Academy of Management Journal **38**(3): 635-672.
- Kanter, R. M. and D. Brinkerhoff (1981). "Organizational Performance: Recent Developments in Measurement." Annual Review of Sociology **7**: 321-349.
- Kaplan, R. S. and D. P. Norton (1996). The Balanced Scorecard: Translating Strategy into Action. Boston, MA, Harvard Business School Press.
- Katz, D. and R. L. Kahn (1978). The Social Psychology of Organizations. New York, John Wiley & Sons.
- Keeley, M. (1978). "A Social-Justice Approach to Organizational Evaluation." Administrative Science Quarterly **23**(2): 272-292.
- Kimberly, J. R. (1976). "Organizational Size and the Structuralist Perspective: A Review, Critique, and Proposal." Administrative Science Quarterly **21**: 577-97.
- Kirchhoff, B. A. (1977). "Organization Effectiveness Measurement and Policy Research." Academy of Management Review **2**(3): 347-355.
- Kuhn, T. S. (1970). Structure of Scientific Revolutions. Chicago, University of Chicago Press.
- Lawrence, P. R. and J. W. Lorsch (1967). "Differentiation and Integration in Complex Organizations." Administrative Science Quarterly **12**(1): 1-47.
- Lewin, A. Y. and J. W. Minton (1986). "Determining Organizational Effectiveness: Another Look, and an Agenda for Research." Management Science **32**: 514-538.
- Lewin, A. Y. and L. M. Seiford (1997). "Extending the Frontiers of Data Envelopment Analysis." Annals of Operations Research **73**: 1-11.
- Likert, R. (1961). New Patterns of Management. New York, McGraw-Hill.
- Likert, R. (1967). The Human Organization. New York, McGraw-Hill.
- Locke, R. M. (1995). The Transformation of Industrial Relations: A Cross-National Review. The Comparative Political Economy of Industrial Relations. K. S. Wever and L. Turner. Madison, WI, Industrial Relations Research Association: 18-19.

- Lord, J. E. and R. D. Spero (1970). "The Public University: Prospects of Power." The Journal of Higher Education **41**(2): 116-129.
- Lyden, F. J. (1975). "Using Parsons' Functional Analysis in the Study of Public Organization." Administrative Science Quarterly **20**(1): 59-70.
- Mahoney, T. A. and W. Weitzel (1969). "Managerial Models of Organizational Effectiveness." Administrative Science Quarterly **14**(3): 357-365.
- Merton, R. K. (1968). Social Theory and Social Structure. New York, The Free Press.
- Millard, T. L. (1962). "Human Relations in a Changing Society, Trends and Principles." Journal of Educational Sociology **35**(5): 228-235.
- Minzberg, H. (1980). "Structure in 5's: A Synthesis of the Research on Organization Design." Management Science **26**(3): 322-341.
- Mohr, L. B. (1973). "The Concept of Organizational Goal." The American Political Science Review **67**(2): 470-481.
- Molnar, J. J. and D. L. Rogers (1976). "Organizational Effectiveness: An Empirical Comparison of the Goal and System Resource Approaches." The Sociological Quarterly **17**(Summer): 401-413.
- Moreno, A. A. and R. Tadepalli (2002). "Assessing Academic Department Efficiency at a Public University." Managerial and Decision Economics **23**: 385-397.
- Morley, E., S. P. Bryant, et al. (2001). Comparative Performance Measurement. Washington, D.C., The Urban Institute Press.
- Nadler, D. A. and M. Tushman (1980). A Congruence Model for Organizational Assessment. Organizational Assessment. E. E. Lawler, III, D. A. Nadler and C. Cammann. New York, John Wiley & Sons.
- National Research Council (2001). Trends in Federal Support of Research and Graduate Education. Washington, D.C., National Academy Press.
- National Science Foundation (1999). Survey of Federal Funds for Research and Development, National Science Foundation.
- Nightingale, D. V. and J.-M. Toulouse (1977). "Toward a Multilevel Congruence Theory of Organization." Administrative Science Quarterly **22**(2): 264-280.
- Nyhan, R. C. and L. L. Martin (1999). "Comparative Performance Measurement: A Primer on Data Envelopment Analysis." Public Productivity & Management Review **22**(3): 348-364.

- Office of Program Policy Analysis and Government Accountability (1997). Performance-Based Budgeting in Context: History and Comparison. Tallahassee, Office of Program Policy Analysis and Government Accountability.
- Office of Program Policy Analysis and Government Accountability (2001). State University System: Florida Department of Education. Tallahassee, Office of Program Policy Analysis and Government Accountability.
- Ostroff, C. and N. Schmitt (1993). "Configurations of Organizational Effectiveness and Efficiency." The Academy of Management Journal **36**(6): 1345-1361.
- Ostrom, E. (1999). Institutional Rational Choice. Theories of the Policy Process. P. A. Sabatier. Boulder, CO., Westview Press: 35-71.
- Parsons, T. (1937). The Structure of Social Action. New York, The Free Press.
- Parsons, T. (1959). General Theory in Sociology. Sociology Today. R. K. Merton, L. Broom and L. S. Cottrell, Jr. New York, Basic Books, Inc. **1**: 3-38.
- Perrow, C. (1961). "The Analysis of Goals in Complex Organizations." American Sociological Review **26**(6): 854-866.
- Perrow, C. (1977). Three Types of Effectiveness Studies. New Perspectives on Organizational Effectiveness. J. M. Pennings. San Francisco, Jossey-Bass: 96-105.
- Pfeffer, J. and G. R. Salancik (1978). The External Control of Organizations. New York, Harper & Row.
- Pfeffer, J. and J. Veiga (1999). "Putting People First for Organizational Success." Academy of Management Executive **13**(2): 37-48.
- Pickle, H. and F. Friedlander (1968). "Components of Effectiveness in Small Organizations." Administrative Science Quarterly **13**(2): 289-304.
- Price, J. L. (1972). "The Study of Organizational Effectiveness." The Sociological Quarterly **13**(Winter): 3-15.
- Quinn, R. E. and K. S. Cameron (1983). "Organizational Life Cycles and Shifting Criteria of Effectiveness: Some Preliminary Evidence." Management Science **29**(1): 33-51.
- Quinn, R. E. and J. Rohrbaugh (1981). "A Competing Values Approach to Organizational Effectiveness." Public Productivity Review **5**: 122-40.
- Quinn, R. E. and J. Rohrbaugh (1983). "A Spatial Model of Effectiveness Criteria: Towards a Competing Values Approach to Organizational Analysis." Management Science **29**(3): 363-377.

- Rainey, H. G. (1991). Understanding and Managing Public Organizations. San Francisco, Jossey-Bass Inc., Publishers.
- Richter, J. (1962). "The Origin and Development of the Land-Grant College in the United States." The Journal of Negro Education **31**(3): 230-239.
- Rohrbaugh, J. (1981). "Operationalizing the Competing Values Approach: Measuring Performance in the Employment Service." Public Productivity Review **5**: 141-159.
- Rushing, W. (1974). "Differences in Profit and Nonprofit Organizations: A Study of Effectiveness and Efficiency in General Short-Stay Hospitals." Administrative Science Quarterly **19**(4): 474-484.
- Salancik, G. R. (1984). "A Single Value Function for Evaluating Organizations with Multiple Constituencies." Academy of Management Review **9**: 617-625.
- Scott, R. W. (1964). Theory of Organization. Handbook of Modern Sociology. R. E. Faris. Chicago, Rand McNally & Company: 485-529.
- Scott, R. W. (1977). Effectiveness of Organizational Effectiveness Studies. New Perspectives on Organizational Effectiveness. P. S. Goodman and J. M. Pennings. San Francisco, Jossey-Bass: 63-95.
- Scott, R. W. (1998). Organizations: Rational, Natural, and Open Systems. New Jersey, Prentice Hall.
- Seiford, L. M. (1996). "Data Envelopment Analysis: The Evolution of the State of the Art (1978-1995)." Journal of Productivity Analysis **7**: 99-138.
- Selznick, P. (1943). "An Approach to a Theory of Bureaucracy." American Sociological Review **8**(1): 47-54.
- Shim, W. (1999). A Novel Approach to the Evaluation of Research Libraries in the U.S. Communication, Information and Library Studies. New Brunswick, Rutgers, The State University of New Jersey: 154.
- Simon, H. A. (1945). Administrative Behavior. New York, The Free Press.
- Simon, H. A. (1964). "On the Concept of Organizational Goal." Administrative Science Quarterly **9**(1): 1-22.
- Steers, R. M. (1975). "Comment on Measurement of Effectiveness." Administrative Science Quarterly **21**(1): 156-157.
- Steers, R. M. (1975). "Problems in the Measurement of Organizational Effectiveness." Administrative Science Quarterly **20**(4): 546-558.

- Steers, R. M. (1976). "When Is an Organization Effective? : A Process Approach to Understanding Effectiveness." Organizational Dynamics **5**: 50-63.
- Steers, R. M. (1984). Introduction to Organizational Behavior, Glenview.
- Storm, R. and R. C. Feiock (1999). Economic Development Consequences of State Support for Higher Education. State and Local Government Review. **31**: 97-105.
- Tankersley, W. B. and J. E. Tankersley (1996). "Relative Efficiency of Electric Cooperatives in South Carolina: An Application and Test of Data Envelopment Analysis." Coastal Business Review **5**: 41-48.
- Tankersley, W. B. and J. E. Tankersley (1997). "The Hypothetical Efficient Organization: Exploring The Diagnostic Value of Data Envelopment Analysis." Coastal Business Review **6**: 57-64.
- Teich, A. H. (1982). Research Centers and Non-Faculty Researchers. Research in the Age of the Steady-State University. D. I. Phillips and B. S. Shen. Boulder, Westview Press, Inc.: 91-108.
- Thompson, J. D. (1967). Organizations in Action. New York, McGraw-Hill.
- Thompson, J. D. and W. J. McEwen (1958). "Organizational Goals and Environment: Goal-Setting as an Interaction Process." American Sociological Review **23**(1): 23-31.
- Tsui, A. S. (1990). "A Multiple-Constituency Model of Effectiveness: An Empirical Examination at the Human Resource Subunit Level." Administrative Science Quarterly **35**(3): 458-483.
- Udy, S. H. (1962). "Administrative rationality, social setting, and organizational development." American Journal of Sociology **68**(3): 299-308.
- Volkwein, F. J. (1989). "Changes in Quality among Public Universities." The Journal of Higher Education **60**(2): 136-151.
- Weick, K. E. (1976). "Educational Organizations as Loosely Coupled Systems." Academy of Management Review **21**(1): 1-19.
- Welbourne, T. and A. Andrews (1996). "Predicting Performance of Initial Public Offering Firms: Should HRM Be in the Equation?" Academy of Management Journal **39**(4): 891-919.
- Whetten, D. A. (1978). "Coping with Incompatible Expectations: An Integrated View of Role Conflict." Administrative Science Quarterly **23**(2): 254-271.
- Whetten, D. A. and K. S. Cameron (1994). Organizational Effectiveness: Old Models and New

- Constructs. Organizational Behavior: The State of the Science. J. Greenberg. Hillsdale, NJ, Lawrence Erlbaum Associates, Publishers.
- Whiston, T. G. and R. L. Geiger, Eds. (1992). Research and Higher Education: The United Kingdom and the United States, The Society for Research into Higher Education & Open University Press.
- Wise, L. R. and R. Agranoff (1991). "Organizational Characteristics and Productivity Measurement in Research Organizations." Public Productivity & Management Review **15**(1): 1-17.
- Yuchtman, E. and S. E. Seashore (1967). "A System Resource Approach to Organizational Effectiveness." American Sociological Review **32**(6): 891-903.
- Zammuto, R. F. (1982). Assessing Organizational Effectiveness. Albany, State University of New York, Albany.
- Zammuto, R. F. (1984). "A Comparison of Multiple Constituency Models of Organizational Effectiveness." Academy of Management Review **9**(4): 606-616.
- Zheng, H. Y. and A. A. Stewart (2000). Assessing the Effectiveness of Public Research Universities. Annual Research Forum of the Association for Institutional Research, Cincinnati, Ohio.

BIOGRAPHICAL SKETCH

DEOKRO LEE

EDUCATION:

Florida State University	Public Administration and Policy	Ph.D	2004
Yonsei University, S.Korea	Public Administration	M.A.	1991
Sogang University, S.Korea	Economics	B.A	1988
Sogang University, S.Korea	Political Science	B.A.	1987

EXPERIENCE:

Associate Research Fellow	Korea Institute for Defense Analyses (KIDA)	7/96– present
Researcher	Korea Institute for Defense Analyses	3/91 – 7/96
Researcher	Institute of Urban Studies and Development, Yonsei Univ.	9/88 – 2/91

PROFESSIONAL ASSOCIATIONS:

Member	The Korea Policy Forum	2/00– present
Member	Military Operation Research-Korea (MORS-K)	3/91– present

PUBLICATIONS:

Research Report

1. Lynch, Tim and Lee, D. 2002. Public Transportation Financing and Subsidies by Mode in the United States. Tallahassee: Center for Economic Forecasting and Analysis, Florida State University.
2. Lynch, Tim, Harrington, J, Lee, D, et al. 2002. Comparison of Tallahassee and Other American and Florida MSAs Using the Metropolitan New Economy Index. Tallahassee: Center for Economic Forecasting and Analysis, Florida State University.
3. Lee, H. and D. Lee. 2000. An Alternative for Outsourcing of Non-Military Area. Seoul: KIDA.
4. Ahn, B. and D. Lee. 1999. Foreign Currency Management System. Seoul: KIDA.
5. Lee, H. and D. Lee. 1998. Improvement of Defense Facilities Protection Areas. Seoul: KIDA.
6. Ahn, B. and D. Lee. 1998. An Alternative for the Management of Military Material Supply Depots. Seoul: KIDA.
7. Park, B., D. Lee, and Y. Jung. 1997. An Alternative for the Defense Resource Management System. Seoul: KIDA.
8. Ahn, B. and D. Lee, J. Kim, and S. Lee. 1996. A Proposal for the Development of Defense Evaluation Techniques. Seoul: KIDA.
9. Lee, H. and D. Lee. 1996. Defense Force Planning System. Seoul: KIDA.
10. Ahn, B. and D. Lee. 1995. An Alternative for Environmental Protection Policy: Creation of the Green Force. Seoul: KIDA.

11. Lee, D. 1995. Historical Development of Korean Defense Organizations. Seoul: KIDA.
12. Kim, J. and D. Lee. 1995. Allocation Criteria of Unit Maintenance Costs. Seoul: KIDA.
13. Lee, S. and D. Lee. 1994. Management Information System of Defense Organization and Personnel. Seoul: KIDA.
14. Park, B., D. Lee, and Y. Jung. 1993. An Alternative for Defense Resource Allocation Structure. Seoul: KIDA.
15. Park, B., D. Lee, and Y. Jung. 1993. Defense Organizational Structure and Operation System. Seoul: KIDA.
16. Park, B., D. Lee, and J. Kim. 1992. Improvement of Defense Facility Maintenance System. Seoul: KIDA.
17. Park, B., D. Lee, and Y. Jung. 1992. An Alternative for Management Information System of Defense Programming by Mission Area. Seoul: KIDA.
18. Park, B., D. Lee, and Y. Jung. 1991. Development of Defense Management System. Seoul: KIDA.
19. Park, B., D. Lee, and J. Kim. 1991. An Alternative for Enhancement of Defense Management Audit System. Seoul: KIDA.
20. Ro, Chunghyun, D. Lee, et al. 1991. Policies for Low-Income Shelter and Settlements in the Seoul Megalopolis. Seoul: Yonsei University Press.
21. Lee, D. 1991. Administrative Reform of the Korean Central Personnel Agency. Seoul: The Graduate School of Yonsei University.

Journal Articles

1. Harrington, J., T. Lynch, D. Lee and N. Aydin. 2004. The Economic Impact of Academic Centers and Institutes on State-Level GRP. Empirical Economics Letters, *In Press*.
2. Lee, D. 1999. Foreign Currency Management System in Defense Budget. The Weekly Defense Review, No. 782, pp. 1-10.
3. _____. 1999. A Proposal for Non-Military Area Privatization. The Weekly Defense Review, No. 778, pp. 1-10.
4. _____. 1998. Enforcement of Military Environment Protection Activities. The Weekly Defense Review, No. 702, pp. 1-12.
5. _____. 1997. Adaptation of Management Innovation Techniques. The Weekly Defense Review, No. 689, pp. 1-15.
6. _____. 1996. An Overview of British Defense Organizations. The Weekly Defense Review, No. 663, pp. 1-13.
7. _____. 1996. An Alternative for Environmental Protection Systems in Defense Area. Defense Research Quarterly, No. 33, Spring, pp. 246-269.
8. Ahn, B. and D. Lee. 1995. Introduction to American Military Environmental Policies. The Weekly Defense Review, No. 602, pp. 1-12.
9. Lee, D. 1994. A Proposal for the Reform of the Force Requirement System. The Weekly Defense Review, No. 588, pp. 1-12.
10. Lee, S. and D. Lee. 1994. Defense Organizations of Western Countries. The Weekly Defense Review, No. 519, pp. 1-9.