“Does It Matter Who Pays? An Analysis of the Relationship Between Department Revenue Mix and Department Faculty Perceptions of Organizational Effectiveness”

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Doctor of Philosophy

by

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The undersigned, appointed by the dean of the Graduate School, have examined the
dissertation entitled

DOES IT MATTERS WHO PAYS? AN ANALYSIS OF THE RELATIONSHIP
BETWEEN DEPARTMENT REVENUE MIX AND DEPARTMENT FACULTY
PERCEPTIONS OF ORGANIZATIONAL EFFECTIVENESS

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Dedication

Dedicated to Morgan and Blake, in the hopes that it will serve as an example that good things do come from hard work and perseverance.

Dedicated to Stacy Wagovich, and Roland and Mardella Hausman, whose endless support and encouragement carried me to the end.
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Does It Matter Who Pays? An Analysis of the Relationship Between Revenue Mix and Faculty Perceptions of Organizational Effectiveness

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Abstract

The study examined one aspect of higher education’s uncertainty in its financial environment, whether there is a correlation between faculty perceptions of organizational effectiveness and department revenue mix. The study used open systems theory along with Cameron’s (1986) nine-factor organizational effectiveness model for higher education.

Cameron’s survey instrument was modified to assess department faculty perceptions of organizational effectiveness and sent to approximately 1,300 MU faculty appointed prior to September 1, 2012. Faculty responses were grouped by department for analysis. Revenue data for FY2010-11 were collected from MU budget records. Department revenue percentages were determined by coding revenue transactions into general revenue, fees, contracts, grants, gifts, investment, revenue and sales. The latter six were alternative revenue sources as they did not arise from appropriations or tuition.

Correlation was used to determine relationships between revenue mix and organizational effectiveness. Findings of significance ($p \leq 0.1$) and marginal significance ($0.1 < p \leq 0.15$) were reported. Results revealed both positive and negative correlations between certain types of revenue and different organizational effectiveness factors. Overall, however, faculty perceived their departments to be effective across all organizational effectiveness factors, regardless of revenue mix.
Introduction

Ehrenberg (2006a) describes public higher education in the 21st century as being “in a state of crisis” (p. xiii). The share of state budgets allocated to higher education declined by more than a third between 1974 and 2004. Reductions in tax rates and several recessions caused states to cut appropriations to higher education to a level that barely kept up with consumer price increases. During this same period, enrollment at public higher education institutions grew by more than 50 percent (Ehrenberg, 2006a). Over the past several years, institutions have begun to generate alternative sources of revenue through higher tuition, increased fundraising, more research, and engaging in many forms of “academic capitalism,” market-like behaviors to generate revenue (Britt, 2009; Ferreri, 2008; Slaughter & Rhoades, 2004; The College Board, 2009). Public higher education’s new revenue mix (less state and more private dollars) may be forcing changes to higher education itself.

Organizations, as open systems, must adapt to changes in the environment, and organizational effectiveness must remain the overarching goal as changes occur (Morgan, 1997). Using correlation analysis, this study examined whether a relationship existed between department revenue mix and department faculty perceptions of organizational effectiveness. Cameron’s (1978) organizational effectiveness survey instrument was modified to determine faculty perceptions for each of Cameron’s nine organizational effectiveness factors at the department level. The University of Missouri-Columbia (MU) was the study setting. Revenue data from the 2010-2011 fiscal year were obtained from MU financial records and reviewed to determine revenue mix at the academic unit level.
In this chapter I provide an overview of the higher education economic environment that existed at the time of the collected revenue data (fiscal year 2010-2011) and introduce the conceptual framework of the study. I describe the methodology, state assumptions, identify limitations recognized before conducting the study, and discuss the study’s significance.

The Economic Environment of Public Higher Education in 2010

The economic reality of public higher education in 2010-11, and the years leading up to it, was reduced state legislative support caused by economic downturns, more competition for limited state resources, and a shift in philosophy that now viewed public higher education as an individual, rather than societal, benefit (Rizzo, 2006). Institutions needed to find alternative revenue sources and looked primarily to increased tuition, increased research grants and contracts, and more private gifts.

As will be described in more detail in chapter two, state funding for higher education had been decreasing for several decades. In fiscal year 2010, national funding to public higher education decreased by 1.1 percent compared to 2009 levels and would have decreased by 3.5 percent without federal government stimulus dollars. For fiscal years 2009 and 2010, without stimulus dollars, the reduction would have reached 6.8 percent. Alabama and Massachusetts, even with federal stimulus monies, had cut higher education funding by almost 20 percent since 2008. Thirty-nine states expected mid-year budget reductions in fiscal year 2011 that could reach $34 billion (Kelderman, 2010).

This fiscal situation prompted the American Association of State Colleges and Universities to list states’ funding of higher education as the number one state policy issue for 2010. The Association noted the importance of state funding support in order to maintain affordability and access, especially at a time when student enrollment continued
to increase (Hurley, McBain, Harnisch, & Russell, 2010). Enrollment at public higher education institutions had risen for the past several years, and long-term enrollment projections showed it continuing to increase. For fall 2009, college enrollment nationally was projected to be approximately 19.6 million students, the highest figure ever, with nearly 75 percent enrolled in public institutions. A nine percent increase was projected through fall 2018 (U.S. Department of Education, 2010).

**Adapting to the Economic Environment**

Public colleges and universities sought to survive and sustain themselves in a changing economic environment through a variety of alternative revenue strategies. Private gifts, increased tuition dollars, and research grants and contracts were prevalent. However, this new diversification of revenue did come with some potential consequences.

**Private Philanthropy.** Fundraising efforts at public higher education institutions had increased significantly over the last several years (Ferreri, 2008). In addition to offsetting lost state funding, colleges raised private funds to help maintain a competitive advantage and increase their reputation and rankings. Evidence of this growth was seen from the number of public institutions undertaking large fund raising campaigns. Of the 50 universities that had successfully raised over one billion dollars during capital campaigns, approximately 30 were public universities (Ferreri, 2008).

The significant growth in private gifts, however, did come with potential pitfalls. Resource dependency theory explains that organizations will be controlled by those who have the resources that colleges and universities need to survive (Pfeffer & Salancik, 1978). Private gifts usually come with conditions dictated by donors that allow donors to
have a voice in shaping future college direction that may not be consistent with the university’s mission. During bad economic times, invested endowment funds can lose value and donors may be less likely to give due to their own financial circumstances (Council for Aid to Education, 2009). Increased fundraising also appears to expand the resource stratification already found at public colleges and universities, as more prominent institutions have advantages in raising private dollars. For example, Cheslock and Giannachi (2008), discussed in chapter two, found that in 2008 the top 20 fundraising universities (of which nine were public) accounted for almost 28 percent of all gifts. Finally, private gifts generally do not directly replace lost state appropriations. The restricted nature of gifted dollars prevents them from being used to offset operations expenses (Newfield, 2008).

**Tuition Increase.** Higher education also responded to fewer state dollars with increased tuition that provided an immediate influx of money that could offset decreased state appropriations. In 2009, the College Board reported that nationally tuition and fees at public four-year institutions rose approximately 6.5 percent in 2009-2010 as compared to 2008-2009 levels. In the previous decade, tuition and fees had nearly doubled (The College Board, 2009).

These increases created affordability and access issues for many students, especially low-income and minority student populations. According to the National Center for Public Policy and Higher Education (2008), between 1982 and 2006, using current dollars, median family income increased by 147 percent. However, over this same time period college tuition and fees grew 439 percent. Roughly 52 percent of college-qualified, low-income students attended a four-year college compared to 91
percent of high-income students. Similar gaps existed based on race. Fifty-six percent of African-Americans and 58 percent of Hispanics enrolled in college the fall semester after high-school graduation, compared to 73 percent for white students.

**Corporate Sponsored Research.** Faculty sensed increased pressure to seek research funding from companies that desire university expertise. These funds, which were increasing, could support graduate students and help to offset the costs of laboratory facilities and equipment. Between 2004 and 2008, corporate research had grown from just over $2.1 billion to $2.9 billion annually, an increase of approximately 26 percent (Britt, 2009). However, like other sources of alternative revenue, corporate research money has potential drawbacks.

Press and Washburn (2000) warned that commercially sponsored research is putting at risk the paramount value of higher education – “disinterested inquiry” (p. 39). Corporations that provide resources through research contracts usually specify what type of research must be done. Ehrenberg (2006b) warns of the danger that institutions, as a result, may be less able to carry out their academic mission. Demands for research secrecy and financial conflicts of interest are two other concerns of institutions that may arise (Bok, 2003).

**Academic Capitalism.** Universities exhibited other for-profit behaviors to generate revenue, termed “academic capitalism” by Slaughter and Rhoades (2004). A primary example was technology transfer revenue from patents and equity stakes in companies that license university technology. In fiscal year 2008, higher education institutions fostered the start of 549 university related spinoff companies, a record high, and generated more than $2.4 billion in revenue from licensing technology at 156
institutions (Blumenstyk, 2010). The 549 companies were roughly 150 more than were created in 2007. Other examples of academic capitalism include expanding distance education services, contracting with industry to use universities as test beds for products, outsourcing food services, and licensing trademarks to sell athletic apparel.

The perceived impacts of these behaviors are mixed. Faculty efforts were shifting from instruction to research causing possible consequences related to access to higher education, knowledge production in academia, and higher education’s performance of, and balance between, various cultural, economic, educational, political and social functions (Slaughter & Rhoades, 2004). However, Glenna, Lacy, Welsh, and Biscotti (2007) studied university-industry relationships with respect to public-interest research and found that positive characteristics such as new research funds and accelerated product development outweighed any potential disadvantages.

Other Impacts of Increased Private Resources. In addition to those discussed above, the literature identifies other possible impacts from increased alternative sources of revenue. For example, there is some evidence that diversifying revenue sources might increase perceptions of university quality (Davis, 2007). By diversifying resources, institutions became market driven and changed the way they did business to retain competitive advantages. Responding to consumer preferences may lead to new perspectives, creating greater diversity of ideas and bringing a wider spectrum of views to campuses. On the negative side, economic market pressures and consumer demand may force institutions to offer only programs with high earning potential for graduates, limiting the ability to produce needed lower paid professionals such as social workers and
teachers. Some universities may not survive. Fewer colleges would decrease the ability
to produce human capital and to increase economic prosperity (Lyall & Sell, 2006).

**The University of Missouri – Columbia (MU)**

This study was conducted at MU. MU is categorized by Carnegie as a doctoral
university: highest research activity and is a member of the Association of American
Universities. MU, as of fall 2010, enrolled approximately 32,000 students. MU,
inclusive of the university’s hospital and clinic operations, had a budget that neared $2
billion and employed slightly over 13,000 persons, of whom nearly 2,000 were faculty
and instructors.

The state of Missouri funded public higher education below the national average.
Using different metrics, Missouri’s funding for higher education consistently ranked in
the mid 40’s among all states (Palmer, n.d.). For example, in 2008 Missouri ranked 44th
in appropriations for higher education per $1,000 of personal income and 47th in
appropriations per capita. For fiscal year 2010-2011 MU received funding at
approximately 95 percent of 2008 funding levels and experienced another approximate
seven percent reduction in state appropriations in fiscal year 2012 (As enrollment rises,
2012).

MU responded to these fiscal cuts in several ways, including the generation of
alternative revenue. Prior to academic years 2009-2010 and 2010-2011, tuition rose
steadily and new supplemental fees were imposed. A 5.8 percent tuition increase had
been approved for 2011-2012 (As enrollment rises, 2012). Research activity had
increased by nearly $150 million annually since 2005. Licensing revenue increased to
roughly $10 million in 2009 and continued to grow (University of Missouri, 2010). In
2008, MU completed a multi-year fundraising campaign that generated over $1 billion in private gift commitments (Smith, 2009).

**Purpose of Study**

As outlined above, public higher education was experiencing a new economic reality forcing changes in the way institutions generated resources, including MU. However, generating new revenue sources can cause different types of impacts on an institution. The research question posed for this study was what, if any, relationship existed between revenue mix at the department level and department faculty perceptions of organizational effectiveness?

**Conceptual Framework**

The conceptual frameworks for the study were rooted in open systems theory and Cameron’s (1978) nine dimensions of organizational effectiveness for higher education institutions. These frameworks were chosen for the study as they examine organizations broadly and across multiple dimensions. Because revenue impacts all aspects of an organization, it was important to determine any relationships broadly in an effort to obtain as complete an understanding of the question as possible.

**Open Systems Theory**

An approach to analyzing organizations is to view them as living (biological) systems that exist within the larger world around them and depend on the environment for sustenance (Morgan, 1997). Organizations must achieve a balance by continuously adapting to the environment which includes economic conditions in order to survive. Open systems theory begins with the concept of entropy, the assumption that without continued inputs any system runs down (Katz & Kahn, 1978). The continuous exchange
between the organization and its environment is the basis of self-preservation (Morgan, 1997).

Birnbaum (1988) asserts that institutions must be responsive to their environments to survive and that the responses they implement have profound effects on their governance structures and processes. However, administration and faculty have lost some control over their institutions as the presence of external funding has weakened administrative authority. Lost faculty control is also related to increased institutional size and complexity, and the resulting division of faculty into departments and other units prevents development of a holistic faculty perspective (Birnbaum, 1988). This is consistent with Weick’s (1976) notion of loose coupling. While organizational units are connected to the system, subunits can adapt to the environment without affecting the system and isolate trouble without impacting other components of the organization (Weick, 1976).

Given the nature of higher education organizations, it was appropriate to measure effectiveness at the department level. Each department could have different abilities to generate alternative revenue and, thus, faculty may have different perceptions of organizational effectiveness. MU faculty were relevant informants as many were charged with seeking and obtaining research grants and contracts, and had roles in generating other sources of revenue. As a group, faculty were impacted by the implementation of actions caused by budget reductions. Further, at MU budgets are largely managed and implemented at the department level.
Organizational Effectiveness

Organizational effectiveness is important to study because, as a concept, individuals are constantly faced with the need to make judgments about the effectiveness of organizations (Cameron & Whetten, 1996). The study of effectiveness has occurred for many years and scholars have constantly debated the appropriate theories and frameworks to use. In higher education, this debate is complicated by the nature of institutions being loosely coupled systems (Weick, 1976) and organized anarchies (Cohen & March, 1974). As described above, organizational subunits can adapt to the environment without affecting the system and isolate trouble without impacting other components of the organization (Weick, 1976). However, over the course of several years Cameron (1978, 1981, 1986) developed a nine factor framework that has been used consistently in higher education and has brought some consensus to this field of study (Cho, 2007).

Over the course of his studies, Cameron created a multidimensional approach that allows researchers studying higher education organizations to compare assessments across organizations and to rely on different constituencies within the organization depending on the variables being studied (Forbes, 1998). In 1978, Cameron interviewed administrators, deans, and chairs at New England area institutions and identified, after data analysis, nine different effectiveness dimensions that form his framework of study. They are:

1. Student educational satisfaction – degree of satisfaction with their educational experiences at the institution.
2. *Student academic development* – extent of academic attainment, growth, and progress of students at the institution.

3. *Student career development* – extent of occupational development, emphasis on career development, and opportunities for development provided by the institution.

4. *Student personal development* – nonacademic, noncareer-oriented areas, and the emphasis on personal development and opportunities provided by the institution.

5. *Faculty and administrator employment satisfaction* – satisfaction of faculty members and administrators with employment at the institution.

6. *Professional development and quality of the faculty* – extent of professional attainment and faculty development, and the amount of stimulation toward professional development provided by the institution.

7. *Systems openness and community interaction* – emphasis placed on interaction with, adaptation to, and service in the external environment.

8. *Ability to acquire resources* – institution’s ability to acquire resources from the external environment such as good students and faculty, and financial support.

9. *Organizational health* – benevolence, vitality, and viability in the internal processes and practices at the institutions (Cameron, 1978, p. 614).

Cameron’s framework has been used in numerous studies to assess organizational effectiveness in colleges and universities. Its use has not been limited to the study of specific factors; rather the framework has been utilized to analyze a variety of issues at different institutional types and their impact or correlation with organizational effectiveness. For example, Cameron (1985) found that unionized institutions scored
lower on the nine dimensions and that ineffectiveness over time led to unionism. Smart and St. John (1996) researched the linkage between culture type and strength, and organizational effectiveness. They found, among many things, that overall strong academic cultures were not perceived more effective than weak cultures, but that cultural values being aligned with management practice was essential to improving performance.

Several studies utilizing Cameron’s framework have examined aspects of financial circumstances and management strategies in higher education institutions. Generally, the studies have examined the impact of declining resources and found that fewer resources alone will not negatively impact organizational effectiveness. Rather, it is implementation of decisions to manage declining resources that has the most impact (Cameron, 1986; Cameron & Smart, 1998).

Cameron (1986) found that declining effectiveness was associated with some degree of resource allocation problems, and that strategic management was related to improvement. Cameron and Smart (1998) looked at whether declines in required levels of financial resources are related to deterioration in effectiveness in colleges and universities, and found that a decrease in financial resources did not necessarily lower organizational effectiveness. Institutions experiencing resource decline could maintain moderate to high levels of effectiveness if management was proactive and the organization avoided developing negative organizational attributes. More studies will be discussed in chapter two, however, the studies are generally inconclusive as to the impact that financial health and the availability of resources have on organizational effectiveness. While some indicate there is a direct relationship, others find less of a
relationship and show that management strategies related to managing financial stress are more predictive.

This study determined what, if any, relationship existed between department faculty perceptions of organizational effectiveness, using Cameron’s nine-dimensional framework, and department revenue mix. Building on prior studies that found that proactive management strategies impact organizational effectiveness, this study extended previous research by determining whether revenue mix at the department level had any correlation to organizational effectiveness.

**Study Design**

This study was conducted as a correlation study utilizing two different sets of data. Revenue data were obtained from MU and used to determine academic department revenue mix in MU’s schools and colleges that educate undergraduate students for the 2010-2011 fiscal year. As described below, the only exception were the schools of journalism and nursing that reported revenue data at the school, rather than department, level. Cameron’s survey instrument was modified and then distributed to full-time faculty appointed prior to September 1, 2012, to obtain their perceptions of organizational effectiveness on each of the nine organizational effectiveness factors. A correlation analysis was used to determine any relationships that existed between department revenue mix and department faculty perceptions of organizational effectiveness.

**Data Sources**

MU financial documents were obtained from the MU budget office. The documents identified the sources of revenue for academic units in the MU schools and colleges that award undergraduate degrees.
Cameron’s organizational effectiveness survey instrument was used to obtain faculty perceptions. The survey has been used in numerous organizational effectiveness studies and proven to be a reliable and predictive measurement tool. Cameron (1978) developed the survey by interviewing dominant coalition members at different types of New England based institutions and identified the nine effectiveness factors. In 1986, Cameron confirmed the nine dimensions in a different study where he examined effectiveness at 29 colleges and universities in the northeast United States by obtaining surveys from 1,240 individuals from the dominant coalition at these institutions. Since this initial work, a multitude of studies have used Cameron’s instrument to assess organizational effectiveness in many higher education settings.

For this study, Cameron’s instrument was modified to determine faculty perceptions at the department and school/college level, rather than institutional level. The instrument was submitted through a web-based survey tool to benefit eligible faculty who were appointed prior to September 1, 2012. Faculty responses were grouped at the department level in order to establish department level perceptions of effectiveness for each of the nine factors.

**Data Analysis**

Cronbach alpha coefficients were calculated for each of the nine organizational effectiveness factors to determine if they were internally consistent and reliable scales of measurement. While the original research design for this study was to group departments with similar revenue mixes for the purposes of comparison, an examination of revenue data revealed that there was no natural break in the data that would permit categorization. Thus, revenue mix was treated as a continuous variable. Correlation analysis was
conducted using Pearson product moment as the test statistic to determine if any linear relationships existed between the variables.

Assumptions

This study was conducted under the following assumption:

1. Faculty who responded to the organizational effectiveness survey responded truthfully and without bias.

Limitations

The researcher recognized the following limitations before conducting the study:

1. No one perfect model for assessing organizational effectiveness exists. This study used Cameron’s framework for higher education institutions. A different framework may produce different results.

2. Cameron’s framework does not include all possible factors. Cho (2007), discussing Whetten (1984), noted that Cameron’s frameworks omit factors that also affect institutional performance such as decision-making approaches, institutional culture, and the nature of relations among faculty, administrators and students (Cho, 2007, p. 42).

Significance of the Study

In 2011, institutions sought to cope with a higher education environment in which public colleges were being forced to rely less on state support and generate alternative sources of revenue. As the sources of revenue diversify in higher education, campus stakeholders are expanding to include both internal and external constituencies who expect returns on their investment (Patterson, 2003). At the same time, public institutions cannot lose sight of their mission. By studying whether a correlation existed between department faculty perceptions of organizational effectiveness and department revenue
mix, managers can examine their revenue strategies in the context of effectiveness to understand what is occurring and improve effectiveness (Cameron 1986). This knowledge will become increasingly important as it is probable that moving forward it will be necessary for institutions to continue relying on alternative sources of revenue.

Given that institutions are “loosely-coupled” systems (Weick, 1976), where departments can adapt to the environment without impacting other components of the organization, it was important to conduct this study at the department level. Departments are largely the place where budgets are managed and implemented at MU. Prior studies that examined higher education organizational effectiveness with financial circumstances as a context did so primarily by looking at the impact of declining resources at the institutional level.

In addition, at this time, little to no information exists regarding how the academy feels about financial circumstances and any impacts on higher education caused by new forms of revenue. The National Study of Postsecondary Faculty has not been conducted since 2004. It is increasingly important to understand faculty perceptions in this area as they are essential contributors to generating alternative sources of revenue and implementing management strategies.

**Summary**

Cameron (1978) stated that “institutions of higher education are effective to the extent to which they produce valued and desired outcomes, maintain organizational viability and vitality, and acquire needed resources without destroying the environment (Cameron, 1978, p. 26).” Public higher education was in the midst of financial change in the years leading up to fiscal year 2010-11. State support was decreasing and institutions were generating alternative sources of revenue to survive. This study examined whether
a relationship existed between department revenue mix and department faculty perceptions of organizational effectiveness at MU. In the following chapters I review the relevant literature, set forth the study’s research design, report results, and discuss the study’s findings and conclusions.
Literature Review

This literature review was written to reflect the state of the literature, especially with regard to higher education economic circumstances, around the time period from which revenue data were collected (fiscal year 2010-2011). Subsequent literature searches have been conducted to find more current studies related to organizational effectiveness and Cameron’s model. None of note were discovered.

In 2010-2011, and continuing to the present day, colleges and universities were facing changing times. One of the most turbulent changes occurring in public higher education was uncertainty in the financial environment with state support in decline and the need to raise alternative types of revenue increasing. Ehrenberg (2006a) describes public higher education in the 21st century as being “in a state of crisis” (p. xiii). While retrenchment and downsizing were prevalent adaptive strategies, over the previous several years’ institutions had begun to generate alternative revenue streams through higher tuition, increased fundraising, more research grants and engaging in many forms of “academic capitalism;” market-like behaviors to generate profits (Slaughter and Rhoades, 2004). Public higher education’s new revenue mix (less state and more private dollars) was forcing changes to higher education itself. Organizations, as open systems, must adapt to changes in the environment, and organizational effectiveness must remain the overarching goal as changes occur (Morgan, 1997).

This study examined the question: What is the relationship between department revenue mix and department faculty perceptions of organizational effectiveness? In this chapter, I set forth a brief summary of open systems theory, the theory that undergirds this study. In addition, the changing economic environment of higher education and the
ways higher education adapted will be discussed. Organizational effectiveness studies will be reviewed within the context of higher education, with a focus on the few studies that have examined effectiveness in relation to administrator response to changing financial circumstances. I also note organizational studies that surveyed faculty members, rather than the dominant coalition, and the importance of surveying faculty members for this study. The chapter concludes with some expected findings based on the relevant literature.

**Open Systems Theory**

One approach to analyzing organizations is to view them as living (biological) systems. Organizations exist within the larger world around them and depend on the environment for sustenance (Morgan, 1997). Organizations must achieve a balance by continuously adapting to the environment in order to survive. The “environment” includes economic conditions impacting the organization (Katz & Kahn, 1978). The concept that organizations are like organisms guides attention toward general issues of survival, organization-environmental relations, and organizational effectiveness. Goals, structures, and efficiency are subsidiary to problems of survival and other more “biological” concerns (Morgan, 1997, p. 34).

Open systems theory emphasizes the close relationship between a structure and its supporting environment. It begins with the concept of entropy, the assumption that without continued inputs any system runs down (Katz & Kahn, 1978). Organizations depend on a wider environment for sustenance, needing to be open in order to achieve a dynamic balance with the environment. This continuous exchange between the organization and its environment is the basis of self-preservation (Morgan, 1997). Open systems studies should include characteristics of both the environment and the
organization, and analysis of the interrelationship should be included (Katz & Kahn, 1978).

Within open systems theory, homeostasis, requisite variety, and equifinality are desirable conditions to be achieved by healthy organizations. Homeostasis refers to self-regulation and an organization’s ability to maintain a steady state. Organizations should initiate actions to correct any deviations from the norm. Requisite variety denotes systems with internal regulatory mechanisms that are diverse in order to cope with fluctuations in the environment. Equifinality describes the idea that an open system has different ways of arriving at an end state, and that flexible ways to achieve goals exist (Morgan, 1997). Kessel and Mink (1971) were among the first to recognize the application of open system theory to higher education, taking the position that a university is surrounded by an environment with constraints, such as facilities and resources, that the institution must adapt to and operate within. Thus, a university must make changes to maintain its equilibrium and survive, so as to carry out its intended purpose.

Birnbaum’s (1988) expansion on Kessel and Mink’s (1971) observation directly informs the present study. Birnbaum argued that institutions must be responsive to their environments to survive and that the responses they implement have profound effects on their governance structures and processes. However, administration and faculty have lost some control over their institutions. The presence of external funding and control agencies (primarily the state for public higher education) has weakened administration authority. Increased accountability that results from concerns over the use of state funding has forced colleges to become more centralized due to requirements to justify
budgets and speak with a single voice to external agencies, among others (Birnbaum, 1988).

The loss of faculty control is related to increased institutional size and complexity, and the resulting division of faculty into departments and other units prevents development of a holistic faculty perspective (Birnbaum, 1988). In turn, faculty are more specialized and, in large organizations, departments have become the locus of decision making. In some universities, department subunits are entirely responsible for their own enrollment and financial affairs. Birnbaum observes that in these situations:

the larger institution may become an academic holding company, presiding over a federation of quasi-autonomous subunits. Unable to influence the larger institution, faculty retreat into the small subunit for which they feel affinity and from which they can defend their influence and status. (p. 17).

Birnbaum’s description of how colleges work is consistent with Weick’s (1976) notion of loose coupling. While organizational units are connected to the system, subunits can adapt to the environment without affecting the system and isolate trouble without impacting other components of the organization (Weick, 1976). While loose coupling can make it difficult for management to coordinate change system-wide, loosely coupled systems can be more sensitive to the environment and adapt more quickly. Thus, loose coupling can be seen as an adaptive device essential to the survival of an open system (Weick, 1976). However, higher education has not practiced this localized adaption during times of fiscal stress typically. Units become dysfunctional, tending to entrench and compete rather than collaborate (Birnbaum, 1988; Cameron & Whetten, 1983).
Given the nature of higher education organizations described above, it is appropriate to measure organizational effectiveness at the department level. Each department can be different in its ability to generate alternative types of revenue and department faculty may have different perceptions of organizational effectiveness. As a result, it is conceivable that different academic units within the system (MU) may adapt to changing economic circumstances differently.

The Economic Environment of Higher Education in 2010

Public universities generally experienced an unfortunate reality over several years that will likely continue into the future. Institutions faced reduced financial support from state legislatures caused by economic downturns, as well as more competition for limited state resources (Ehrenberg, 2006a; Rizzo, 2006). Institutions also faced a potential shift in political philosophy to one that emphasized that individuals benefit more than the public from higher education (Ehrenberg, 2006b). As the result of less public investment, public higher education institutions were forced to function more like private businesses in the competitive marketplace (“academic capitalism” discussed below). In addition to cutting budgets to offset legislative funding reductions, public colleges sought alternative sources of revenue that included such things as increased tuition and an emphasis on private gifts through fundraising. This general trend is termed “privatization” and it continues to grow (Ehrenberg, 2006b; Lyall & Sell, 2006).

State Funding

State funding for higher education had been decreasing for many years prior to 2010-2011. Several factors contributed to this trend including economic downturns, reduced tax rates, more competition for state resources, and a shift in philosophy that
higher education was more of a private good rather than public benefit (Ehrenberg, 2006a; Lyall & Sell, 2006; Rizzo, 2006). Rizzo (2006) describes major changes that occurred during the last quarter of the 20th century in the form of declines in public higher education’s share of total state budgets and share of total state educational funding. Across all states, between 1972 and 2001, the share of total general fund expenditures for education fell from 39.9 percent to 36.1 percent of total state budgets, with a low of 35 percent in 1993 (Rizzo, 2006). During this same time period, the share of state education budgets allocated to public higher education fell approximately 27 percent, from 22.6 percent to 16.4 percent (Rizzo, 2006). In the 1980’s public colleges drew more than half of their support from state appropriations; by 2006, on average nationally, the state provided about 30 percent of organizational funding and below 10 percent at some of the most prominent institutions (Lyall & Sell, 2006).

After 2001, recovery in higher education funding was not fully realized even though the national economy was rebounding, a situation inconsistent with past higher education funding trends. Appropriations for higher education fell 2.1 percent ($1.7 billion) for fiscal years 2003 and 2004 with 23 states reporting budget reductions. When fiscal year 2002 is included, 29 states reduced support by $2.5 billion (4 percent). Nine more states during this time period increased funding at a rate less than inflation (Reindl, 2004, p. 35). The failure to offset inflationary increases in the costs of goods and services and fringe benefits effectively operates as a budget decrease.

In fiscal year 2010, national funding to public higher education decreased by 1.1 percent compared to 2009 levels and would have decreased by 3.5 percent without federal government stimulus dollars. For fiscal years 2009 and 2010, without stimulus
dollars, the reduction would have reached 6.8 percent. Even with federal monies, some states such as Alabama and Massachusetts, had cut higher education funding by almost 20 percent. Thirty-nine states expected mid-year budget reductions in fiscal year 2011 that could reach $34 billion (Kelderman, 2010). This fiscal situation prompted the American Association of State Colleges and Universities to list states’ funding of higher education as the number one state policy issue for 2010. The Association noted the importance of state funding support in order to maintain affordability and access, especially at a time when student enrollment was continuing to increase (American Association of State Colleges and Universities, 2010).

**Enrollment Growth**

Adding to the hardship caused by economic realities was pressure from increasing enrollment. Enrollment at public higher education institutions had risen for the past several years peaking in 2011. Between 2000 and 2010, enrollment nationally at public institutions rose from just over 12 million students to approximately 16.1 million students accounting for nearly 75 percent of total university enrollment (Molla, 2014). During this time period, enrollment growth at all Missouri institutions was approximately 38 percent, increasing from 321,248 students to 444,695 students (National Center for Education Statistics, 2015). High school demographics largely contributed to the enrollment growth. Between 2000 and 2010, public high school graduates both nationally and in Missouri rose by roughly 22 percent (National Center for Education Statistics, 2015).

Reductions in state support were occurring at times when the demand for public higher education was continuing to grow, a reality termed the “perfect storm”
The “perfect storm” of decreasing levels of state funding combined with increasing numbers of students was forcing public institutions to operate more like private enterprises in an effort to react and adapt to the new economic environment.

**Philosophical Shift**

In 2010-2011, there was evidence of a philosophical shift occurring. Traditionally, public higher education had been viewed as a social good that yields benefits to the nation as a whole (Ehrenberg, 2006b). However, higher education had been largely ineffective in communicating this public benefit message (Meyer, 2006). Data showed that the wealth and earnings gap between those who were more educated compared to those less educated was getting wider. Increased economic return was causing legislators, in part, to view higher education as more of a private good whose costs should be borne increasingly by the student rather than the public (Ehrenberg, 2006b). This shift appeared to be consistent with some public opinion. One poll showed that nearly two-thirds of Americans felt that students and families should pay the largest share of a college education (Seaman, 2005, citing Selingo, 2003).

In addition to the earnings gap, state fiscal structures were contributing to the philosophical shift. Tax cuts and spending caps in many states had led to long-term state deficits. Higher education became an easy target for financial cuts because legislators perceived that tuition could substitute for tax dollars (Lyall & Sell, 2006). Education’s share of state budgets was also jeopardized by increased demands for other state obligations such as health care and prisons (Rizzo, 2006). In addition, universities were being criticized by many as having liberal agendas (Lyall & Sell, 2006).
At the same time as the philosophical shift, some state legislatures were not giving institutions complete freedom to offset their reduced funding. Missouri policymakers expressed concern about reduced student access to justify legislation limiting tuition increases. Missouri statute (Section 173.1003) caps tuition increases at the year’s consumer price index if the institution’s tuition is higher than the state average. The economic environment that public higher education was experiencing was difficult. While enrollment grew, fewer resources were being allocated to colleges and universities; a trend that was likely to continue given the changing attitudes of state legislators and the public about the role of public higher education.

Adapting to the Economic Environment

As described above, one lens through which to view and examine organizations is to see them as organisms functioning in an open system. Like organisms, organizations are open to their environment and must achieve an appropriate relationship with that environment if they are to survive (Morgan, 1997). Public colleges and universities have sought to survive and sustain themselves during changing economic environments through a variety of strategies. To offset reduced appropriations and lessen the impact of budget cuts, institutions sought to raise alternative sources of revenue. Private gifts, increased tuition dollars, corporate sponsored research, and the general approach of “academic capitalism” were many of the ways new revenue was sought. However, the new diversification of revenue did not come without possible consequences.

Philanthropy

One source of revenue that was growing significantly in importance was philanthropy. In contrast to private universities, public institutions had only become
serious about fundraising, out of necessity, in the previous few years. Prior to the need to raise private gift dollars, alumni relations and development were viewed primarily as secondary functions of universities. Staffs and budgets of development and alumni offices were minimal and not well integrated into the mission, scope, and goals of public colleges (Conley & Tempel, 2006). This was not the case by 2010. At most public colleges, especially large public universities, the development office was a key component in furthering the institution’s mission, enhancing educational quality, and raising the stature of the university. In 2002, total voluntary support to 132 reporting public research institutions totaled just over $7.5 billion, averaging approximately $57 million per campus (Council for Aid to Education, 2004). By 2011, that figure had grown by nearly 25 percent to a total $9.9 billion at 136 reporting institutions. An average of almost $73 million per university (Council for Aid to Education, 2012).

There were many reasons that fundraising at public universities had grown. State legislatures failed to fund public higher education at levels that would keep pace with growing enrollment (Lyall & Sell, 2006). Colleges also raised private funds to help maintain a competitive advantage and increase their reputation and rankings. In U.S. News and World Report’s annual rankings, the percentage of alumni giving was one of the seven rating criteria. This percentage could be a measure of student satisfaction, as a gift is viewed as endorsing the educational experience and institution’s quality (Conley & Tempel, 2006).

The growth of fund raising and its importance at public institutions was further evidenced by the number of public institutions undertaking fund raising campaigns. Approximately 50 universities had successfully raised over one billion dollars during
capital campaigns with some doing it multiple times. Surprisingly, of these 50, approximately 30 were public universities (Ferreri, 2008). As a result, large public universities had seen tremendous growth in their endowment values. Three of the top 10 university endowments belonged to public institutions and included the University of Texas System, University of California, and University of Michigan (U.S. Department of Education, 2010). For fiscal year 2008, UCLA garnered nearly $460 million in private gifts (sixth among all universities) and the University of Wisconsin-Madison almost $411 million (eighth). Compared to fiscal year 2007, voluntary support had increased at all types of public institutions by an average of approximately 10 percent, except at two year colleges that experienced a 4.6 percent decrease (Council for Aid to Education, 2009).

**Impacts of Philanthropy.** The significant growth in private gifts did come with potential pitfalls. Resource dependency theory explains that (a) universities have diverse constituents who have competing goals within different political dimensions and that (b) organizations will be controlled by those who have the resources that they need to survive (Pfeffer & Salancik, 1978). One negative outcome, as Ehrenberg (2006) suggests, is that public institutions, especially land grant universities, could become less able to carry out their academic mission: to serve and benefit society as a whole.

Private gifts, by and large, come with conditions dictated by donors as to how the money can be used. For example, scholarships have parameters that students must meet to qualify, and faculty endowments typically require certain courses to be taught or specific areas of research be conducted by the named professor. Through these conditions, donors can have a large voice in shaping the direction of a university or college. One example of this occurred at the University of Georgia. The Georgia Board
of Regents had sought to sever its affiliation with the university’s foundation after the foundation’s board of directors threatened to pass a no-confidence vote against the university president, and reduce its $300,000 contribution to the president’s salary. The president had angered alumni by refusing to renew the contract of the athletic director, Vince Dooley. Dooley was a long-time fixture of Georgia athletics and had won a national championship as Georgia’s football coach (Karlin-Resnick, 2004).

When donors feel an institution is straying too far from donor intent, some will resort to the legal system. For example, Princeton University settled a lawsuit brought by the heirs of a donor who asserted their parents’ conditions in creating an endowment (valued at $900 million) to support graduate programs and train graduate students for careers in the federal government were not being carried out (Knueve, 2008). In 2006, Tulane University was sued by the heirs of a donor who had created a college at Tulane in 1886 to advance the education of women. Tulane had folded the donor’s college into the university in its response to the financial impacts caused by Hurricane Katrina (Knueve, 2008).

Another drawback is that private giving can be impacted in multiple ways during bad economic times. Endowments are invested, and while economic losses can be softened by diversification, when endowments lose money fewer funds are available for university usage. Fewer dollars from endowment investment earnings impact the ability of universities to maintain scholarship, faculty, and program support levels that endowments strengthen. Additionally, bad economic times usually translate into fewer gift dollars. In 2008, The Center on Philanthropy and Charitable Giving reported that during economic downturns giving declined when adjusted for inflation. In recession
years, an average decrease of one percent was experienced by nonprofit entities. In years when there was eight months or more of a recession, the decrease was 2.7 percent. During the recession that lasted from 1973 to 1975, giving fell 9.2 percent. Similar results occurred during the 2009-2011 recession. The Council for Aid to Education reported that giving to higher education decreased in 2009 by 11.9 percent when compared to 2008, the largest drop recorded since 1969. While giving to public research universities increased in 2010 by 5.1 percent over 2009 levels, overall giving to higher education in 2010 decreased by 0.6 percent when adjusted for inflation (Jaschik, 2011).

Fundraising efforts may also expand the resource stratification that was found at public colleges and universities, as more prominent institutions have advantages in raising private dollars. Cheslock and Giannachi (2008) studied fund raising issues using multiple data sources, including the Voluntary Support of Education survey. They found an institution in the 90th percentile in terms of private giving received 5.2 times more donations compared to a 50th percentile (median) institution. Tenth percentile institutions received only 30 percent of the gifts collected by median universities (Cheslock & Giannachi, 2008). In fiscal year 2008, the top 20 fundraising universities, which included nine public institutions, reported large giving increases and accounted for almost 28 percent of all gifts. The other 1,032 universities experienced a 4.2 percent decrease in gifts received (Council for Aid to Education, 2008). One factor in this disparity was institution selectivity. The most selective institutions received approximately 1.8 times more gift dollars than moderately selective colleges and nearly 3.5 times greater private gift dollars compared to less selective institutions (Cheslock & Giannachi, 2008). Being classified as a research/doctoral extensive university or being a member of the AAU also
correlated to higher gifts (Cheslock & Giannachi, 2008). This stratification could also be experienced at the subunit level, as well. Hirsch (1999) warned that emphasizing fundraising may favor certain programs and initiatives within a university over others.

Could a new emphasis on private philanthropy in public higher education and the resulting growth in private gift dollars offset reduced state appropriations? Cheslock and Giannachi (2008) found that, all else being equal, less state funding actually correlated with fewer private gifts. Newfield (2008) noted the belief that philanthropic dollars replacing lost state appropriations was one of seven damaging myths that put public universities at risk. State appropriations are generally directed as unrestricted money for such things as building maintenance, salaries, fringe benefits, and supplies. Few dollars raised from private donors are unrestricted. The 2008 Voluntary Support for Education survey revealed that over half of all gifts were dedicated to specific, donor mandated, purposes. The monies could not be used to offset budget reductions that impact the daily costs of doing business. If the reality is that reduced appropriations were likely to be more permanent rather than cyclical, replacing them with unrestricted dollars would be difficult. Endowments distribute a small percentage of the corpus value each year. Assuming a five percent return on investment, for every $1 million in lost appropriations a university had to raise and endow $20 million to replace the lost appropriations. The inability to have input into the resource allocation of most gifts put in danger management’s ability to effectively manage overall resource decline.

Despite these drawbacks, increased emphasis on fundraising in public higher education was expected to continue. Hard economic times and permanently reduced
legislative monies forced universities to seek out multiple sources of alternative revenue. And, as Bok (2003) noted,

faculty and students are forever developing new interests and ambitions…

Presidents and deans are anxious to satisfy as many of these needs as they can, for their reputation depends on pleasing the faculty, preserving the standing of the institution, and building a legacy… (p. 9).

**Increased Tuition**

Another way higher education was responding to fewer state dollars was to increase tuition and fees. Unlike private philanthropy, tuition income was an immediate influx of money that could offset decreased state appropriations to pay current expenses. But, college prices were rising more rapidly than family incomes; the net cost of attending college, even taking into account grants, loans, and other types of financial aid, was increasing faster than students and parents could keep up with. As a result, increases in tuition and fees were creating affordability and access issues for many students, especially the low-income and minority student populations.

The College Board’s Trends in College Pricing 2009 was based on responses from approximately 3,500 surveyed institutions, both public and private. The College Board reported that nationally average in-state tuition and fees at public four-year institutions for fiscal year 2009-2010 grew 6.5 percent from 2008-2009 to $7,020. The rate of increase for out-of-state students was nearly the same at 6.2 percent. Two-year public colleges experienced the largest increase at 7.3 percent over 2008-2009 levels. Looking back a decade, since 2000, in-state tuition and fees had essentially doubled at four-year institutions. Koshal and Koshal (2000) noted that a negative relationship
between tuition and state appropriations does exist, indicating that as tuition rose, on average, state funding declined.

In addition to simply raising base tuition, recent scholarship suggests that universities seek to increase nonresident freshman enrollment to generate more net-tuition revenue. Ozan and Curs (2015) used Integrated Postsecondary Education Data System (IPEDS) data to analyze the relationship between appropriations and nonresident freshman enrollment at 473 public universities between 2002-03 and 2012-13. Study results indicated that a one percent decrease in state funding was associated with a .27 percent increase in nonresident freshman enrollment. The relationship was stronger at research universities (.46 percent) and research-extensive universities, specifically (.5 percent). The study also found that state funding and resident freshman enrollment were unrelated (Ozan & Curs, 2015).

**Impacts of Increased Tuition.** A potential drawback to increased tuition is reduced access. According to the National Center for Public Policy and Higher Education (2008), between 1982 and 2006, using current dollars, median family income increased by 147 percent. However, over the same time period college tuition and fees grew 439 percent. This circumstance was especially difficult for low income and minority students. According to Fitzgerald (2004), only 52 percent of college-qualified, low-income students attended a four-year college and 22 percent did not attend. For high-income students, these statistics were 83 percent and four percent, respectively. The highest-achieving poor students attended college at the same rate as the lowest-achieving wealthy students (about 78 percent). By 2008, the disparity had grown. While the enrollment rate for low-income students remained nearly the same, high-income students
were attending college at a 91 percent rate (National Center for Public Policy on Higher Education, 2008). The Center reported similar gaps based on race. Fifty-six percent of African-Americans and 58 percent of Hispanics enrolled in college the fall semester after high-school graduation compared to 73 percent for white students.

While increasing tuition and fees may have been the most immediate solution to short and long term fiscal crises, the increases raised concerns related to affordability and access to higher education, especially for minority and low-income students. Given possible negative consequences to raising funds in this manner, it was important to understand how higher tuition and fees may impact organizational effectiveness.

**Corporate Sponsored Research Contracts**

Another growing revenue source for higher education was corporate funded research projects. Revenue came from corporate sponsors who, rather than investing in their own research and development infrastructure, sought out university expertise in areas that may benefit the company’s business. Corporate research money could not only support graduate students, but colleges also charged overhead to help offset the costs of facilities and equipment that were used to conduct research. Corporate research is a multi billion-dollar industry in higher education, but as with gifts and tuition, possible negative consequences existed. Press and Washburn (2000) warn that commercially sponsored research is putting at risk the paramount value of higher education – “disinterested inquiry” (p. 39).

Corporate research dollars were increasing. While there was a lull in the early 2000s, industry research support had been increasing since 2005. In 2004, total corporate research support was slightly more than $2.1 billion. In 2008, corporate research support
had risen to just shy of $2.9 billion, an increase of approximately 26 percent. As a portion of total research support from all sources, industry represented 5.5 percent in 2008 compared to 4.9 percent in 2004 (Britt, 2009). Similar to private philanthropy, there was a large discrepancy between the top funded institutions and the remainder. Of the $2.3 billion from industry in 2005, the top ten funded schools accounted for nearly 30 percent of the total corporate research dollars received. Seven of the top ten were public universities led by Penn State (second) and Ohio State (third). Both universities attracted over $80 million from private corporations (Powers, 2007).

**Impacts of Corporate Sponsored Research.** While corporate research dollars made up only a small fraction of all university research support, there were concerns both inside and outside academia about its continued growth. Resource dependency theory asserts that organizations are controlled by those that have the resources the organization requires to survive (Pfeffer & Salancik, 1978). Donors and corporations who provide resources through gifts and research contracts, for example, usually specify to the institution what their monies can be used to support or what type of research must be done. Ehrenberg (2005) warns that this could result in institutions, especially land grant universities, being less able to carry out their academic mission: to serve and benefit society as a whole.

Demands for secrecy and conflicts of interest are two concerns institutions may have that could be caused by outside resource providers. Companies often want to dictate that research results derived from the funding they provide remain private until the company can evaluate whether they will patent or license the technology, and some companies had attempted to completely stop the publication of results. One example was
a pharmaceutical company’s threat of legal action and accusations of bad research methodology against a University of California-San Francisco researcher who found that the company’s drug, Synthroid, was not superior to identical generic drugs as had been expected (Bok, 2003). Financial conflicts of interest were also of concern when faculty members had monetary interests in companies that also funded university research. Jesse Gelsinger, a gene therapy patient, died during the course of an experiment. It was subsequently learned that the faculty member who was directing the study (and the university) were financial stakeholders in the company that stood to gain monetarily if the therapy proved successful (Bok, 2003).

At the University of California – Berkeley, Novartis/Syngenta had entered into a five year, $25 million, sponsored research contract with the institution’s biology department (Blumenstyk, 2004). While proponents of the program saw it as a financial boom to the department, critics envisioned danger in the possible skewing of research priorities and the compromising of faculty independence. The contract itself also raised questions because it had been negotiated outside the realm of faculty governance and allowed Novartis first refusal on licensure rights of faculty inventions, even if the research had been done with federal monies. Opposition to the agreement had created a conflict of interest among administrators who denied tenure to a faculty member who had been vocally opposed to the Novartis arrangement. In the end, arguably, the arrangement called into question Berkeley’s research independence and caused internal strife.

Corporate funded research was a growing source of alternative revenue for colleges and universities, especially large research institutions that had the capacity to attract a broad spectrum of research projects. However, a number of dangers potentially
existed that could negatively impact the institutions. Thus, it was important to study whether effects on organizational effectiveness existed.

**Academic Capitalism**

In addition to philanthropy, increased tuition, and corporate funded research, universities were also exhibiting other for-profit behaviors to generate revenue. Slaughter and Rhoades (2004) termed these behaviors as “academic capitalism;” higher education’s response to the new economy and changing revenue mix. Examples included technology transfer revenue from increasing the numbers of patents being filed by colleges and taking more equity stakes in companies that license university technology, expanding distance education services, contracting with industry to use universities as test beds for products, outsourcing food services, and licensing trademarks to sell athletic apparel.

Academic capitalism can filter down to the department level as well. Slaughter and Rhoades (2004) reported data from a study by Leslie, Rhoades and Oaxaca (1999) that focused on public research universities. In the study, department heads discussed increased pressures to generate alternative revenue. Federal grant and contract work was emphasized because they are the principal source of external research revenue. In addition, department heads also noted pressure to work with corporations and to be entrepreneurial by conducting market driven research. Departments were encouraged to compete for undergraduate students as lower level general education courses can generate significant tuition dollars. Other educational entrepreneurial activities included summer programs, professional master’s degrees that target corporate employees, and new academic programs for developing employment markets.
One growing trend was universities increasingly seeking to exploit research discoveries through patent and licensing revenue. In fiscal year 2008, higher education institutions fostered the start of 549 university related spinoff companies, a record high, and generated more than $2.4 billion in revenue from 156 institutions (Blumenstyk, 2010). The 549 companies were roughly 150 more than had been created in 2007. However, like corporate research investment, university patent and licensing revenue was very stratified. In 2008, approximately 50 percent of the $2.4 billion in revenue was generated by four universities, led by Northwestern ($825 million). The 11 universities that reported revenue of more than $50 million accounted for nearly 75 percent of all licensing and patent revenue. Of the eleven, five were public institutions (University of California System, and the Universities of Minnesota, Washington, Wisconsin, and Florida).

Impacts of Academic Capitalism. A potential drawback to this behavior is the possible changes in faculty workforce dynamics in terms of the work they do, shifting faculty efforts away from instruction and toward research. Evidenced by shifts in expenditure patterns, Slaughter and Leslie (1997) concluded that reductions in the share of resources allocated from government, and the resulting alterations in the nature of work performed within universities, promoted academic capitalism because faculty and institutions were pushed into market and market-like behaviors to compensate for the loss of share from government block grants (Slaughter & Leslie, 1997). This change was bringing about an academic capitalist knowledge/learning regime that was gaining prominence as compared to the public good knowledge/learning regime of previous decades. Such changes could be consequential for society in terms of access to higher
education, knowledge production in academia, and higher education’s performance of, and balance between, various cultural, economic, educational, political and social functions (Slaughter & Rhoades, 2004, p. 33-34).

Two studies had examined some aspects of the impacts of academic capitalism on higher education institutions with regard to university-industry relationships. Glenna, Lacy, Welsh, and Biscotti (2007) studied, in the context of academic capitalism, how administrators viewed university-industry relationships (UIR) with respect to public-interest research. Fifty-nine administrators with responsibilities over agricultural biotechnology research at six land-grant universities were interviewed. Using a survey with both open-ended and Likert-scaled questions, 18 characteristics were identified (eight advantages and 10 disadvantages). All eight advantages had mean scores above the neutral score of four. Two characteristics with the highest scores were “provides new research funds” and “accelerates product development” (Glenna, et al., 151). However, with regard to the 10 disadvantages, the only factor that scored as a negative variable, with a mean score of 5.18, was increased potential for conflicts of interest. “Deemphasizes nonproprietary agendas” scored near neutral at 4.09. Glenna et al., interpreted their results to suggest that administrators tended to perceive considerably more advantages than disadvantages (to UIR relationships), even though they did not completely dismiss disadvantages.

Mendoza and Berger (2008) studied the impact of academic capitalism on academic culture in one materials science department with established industry relationships. Mendoza and Berger conducted ten interviews noting concerns in the literature that industry partnerships may overemphasize applied research and secrecy
(Campbell & Slaughter, 1999), and that differences in reward structures may move faculty toward market values and away from an altruistic approach to research (Slaughter & Leslie, 1997). Interviewed faculty agreed that their first goal was to train scientists and their second was to produce science. Partnerships had to be entered with this in mind and, if done this way, the partnership could be a win-win situation. Faculty also felt that students should only be active in industry relationships when education was a component. Mendoza and Berger concluded that, overall, partnerships could enhance graduate education and the pursuit of science while maintaining academic integrity (Mendoza and Berger, 2008).

**Other Impacts of Increased Alternative Revenue Sources**

In addition to impacts discussed above, the literature identified other positive and negative consequences that resulted from less state funding and increases in alternative sources of revenue. One potential impact was that changing revenue mixes and fewer resources had provided an incentive for higher education to look for operating efficiencies and streamlined processes. The National Center for Higher Education Management Systems (2007) studied whether institutions could improve performance with the same level of, or less, funding using total funding per full-time student compared against certain university performance measures such as graduation rates. After evaluating all 50 states, the Center determined that different state systems performed differently with similar levels of funding, leading to an initial conclusion that there was no evidence that more funding necessarily meant better performance.

Cameron and Smart (1998), discussed in more detail below, reported similar findings to the National Center for Higher Education Management Systems (2007) study.
Using management theories, Cameron and Smart sought to determine the relationship between declining resources, negative organizational attributes that came about when declining resource conditions occur, and effectiveness. These relationships were analyzed using Cameron’s (1978) nine dimensions of organizational effectiveness model for higher education. Cameron and Smart found that a decrease in financial resources did not necessarily negatively impact organizational effectiveness. Rather, institutions experiencing resource decline could maintain moderate to high levels of effectiveness. Financial cutbacks alone did not predict a decline in university performance.

There was also some evidence that diversifying revenue sources might increase perceptions of university quality. Davis (2007) had sought to learn about the influence of revenue sources on external perceptions of quality. High U.S. News and World Report rankings could influence a college’s ability to recruit students and increase gifts. Looking at 30 top-tier and 30 bottom-tier schools from the U.S. News’ “Best National Universities” rankings, Davis found that bottom-tier university budgets, compared to top-tier university budgets, relied more heavily on state appropriations (37.6% of the budget compared to 31%) and tuition (27.5% of the budget compared to 22%). Top tier colleges, on balance, had more diversified revenue, especially with regards to federal grants (23% of the budget compared to 16%) and gifts (8% of the budget compared to 5.6%). Higher tuition dollars and more legislative appropriations also resulted in lower peer assessment ratings (Davis, 2007).

Large universities can be unresponsive and slow to implement change. The shift to more private resources had begun to change this. By diversifying resources and relying more on external sources of funding, institutions had become market driven and
changing the way they did business to retain competitive advantages (Lyall & Sell, 2006). Responding to consumer preferences could lead to new perspectives, creating a greater diversity of ideas and bringing a wider spectrum of views to the campus. Further, by producing alternative revenue, legislators had more dollars to shift to other areas of need, such as elementary and secondary education and healthcare. By extension, in the long-term, diversified revenue sources could insulate higher education from future dramatic shifts in state revenues (Lyall & Sell, 2006).

Some other negative consequences to increased use of private resources also possibly existed. For example, discussed above is resource dependency theory and the possible conflicts of interest that could arise with donors and corporations providing research dollars. Access and affordability issues are possible due to increased tuition. Further, economic market pressures and consumer demand could drive public institutions toward only offering programs with high earnings potential for the graduate. The result could be a limit on the ability to produce lower paid professionals that society also needs, such as social workers and teachers. For universities that could not survive financially by generating alternative revenue, closure may be forced. Fewer colleges would decrease the ability to produce human capital and to increase economic prosperity (Lyall & Sell, 2006).

In sum, higher education organizations, due to many circumstances, were being forced to generate alternative sources of revenue in order to adapt to their changing economic environment. These changes, however, did not come without possible positive and negative consequences. In order to improve and continue to adapt, it was necessary
for organizations to recognize the impacts of new sources of revenue, as well as the
effects of this revenue on organizational effectiveness.

**Organizational Effectiveness**

Since Adam Smith, society has tried to organize human activity in order to yield
the highest output. Organizations are continually reporting results for which they are
held accountable by different interest groups (Goodman & Jennings, 1977). Thus,
organizational effectiveness is important to study. As a concept, effectiveness lies at the
center of all models and theories of organization, and it is the ultimate dependent variable
in organizational research as individuals are constantly faced with the need to make
judgments about the effectiveness of organizations (Cameron & Whetten, 1996, p. 267).

Studies of organizational effectiveness have occurred for many years, and over
time scholars have debated the appropriate theories and frameworks to utilize. Cameron
(1980) noted that four major approaches to effectiveness studies had been used up to that
point. They were goal attainment, resource acquisition, internal process and operation,
and participant satisfaction. Goal attainment measures effectiveness on how close the
organization comes to meeting its goals. With the system resource approach,
effectiveness was judged on how well the organization was able to acquire resources
from the external environment. The internal process and operation approach looked at
how much internal strain an organization had. Finally, the participant satisfaction model
measured how satisfied strategic constituencies (any group with an interest in the
organization) were. Due to the nature of different types of organizations, no one theory
was suited to every situation. However, one of the approaches was generally appropriate
in most circumstances (Cameron, 1980).
Despite this, none of these models were appropriate for higher education due to the nature of institutions being loosely coupled systems (Weick, 1976) and organized anarchies (Cohen & March, 1974). In organized anarchies, goals are ill-defined, complex, changing, and contradictory with subunits often pursuing goals unrelated to the broader organizational goals (Cameron, 1980, p. 70). The goal attainment approach is not useful because it relies on identifiable measurable goals. The internal process approach is likewise inappropriate because organized anarchies characteristically have no obvious connection between how work is done and the outcome, and more than one strategy can produce the same outcome (Cameron, 1980). Similarly, there is generally no connection in organized anarchies between the output and the resources the organization receives, making the resource acquisition model inapplicable. Using the participant satisfaction model is difficult because loosely coupled subunits normally only have to respond to a small portion of the constituencies in the total organizational environment (Cameron, 1980).

Over the course of several years, to study effectiveness in higher education organizations specifically, Cameron (1978, 1981, 1986) developed a nine factor framework (described below) that has been used consistently and has brought some consensus to this field of study (Cho, 2007). In 2011, institutions were seeking to cope with external environments that were characterized by declining state resources. As the sources of revenue diversified in higher education, campus stakeholders were expanding to include both internal and external constituencies. These investors expected returns on their investment (Patterson, 2003). This study extends previous scholarship by examining whether there are relationships between department faculty perceptions of
organizational effectiveness and department revenue mix. Prior studies that have examined higher education organizational effectiveness with financial circumstances as a context have done so primarily by looking at the impact of declining resources. The only exception was Cameron (1986), who included financial health along with academic quality and enrollment trends in the study as variables. However, Cameron (1986) sought only to identify predictor variables rather than test a hypothesized relationship between the variables. The current study examined individual departments on a large university campus. No studies were located that examined effectiveness at a subunit level with financial circumstances as a variable.

**Concept of Organizational Effectiveness**

Organizational effectiveness is a construct. Constructs are abstractions (e.g. leadership, motivation, and satisfaction), that have no objective reality. They cannot be pinpointed, counted, or observed. They exist only because they are inferred from the results of observable phenomena. They are mental abstractions designed to give meaning to ideas or interpretations (Cameron & Whetten, 1983b, p. 7). Thus, effectiveness is not one thing, but rather a concept that can be examined by different methods depending on how it is being defined. An organization can be effective or ineffective on a number of different scales simultaneously, which may be relatively independent of one another (Campbell, 1977, p. 18; Cho, 2007).

Generally, studies show that there is no common definition or framework that can be applied across all organizations to define organizational effectiveness. There are too many dimensions, perceptions of criteria, and constituencies to make this possible (Cameron, 1986). Effectiveness is also difficult to measure. It is typified as being
mutable (different criteria at different organization life stages), comprehensive (multiple dimensions of organizations), divergent (different constituencies), transpositive (altering relevant criteria), and complex (nonparsimonious relationships among dimensions) (Cameron, 1978, p. 604). Criteria problems are the major obstacles to empirical assessment of effectiveness. Researchers must consider what aspects of the organization are being studied, universality or specificity of the criteria, whether the criteria are normative or descriptive, and whether variables are dynamic or static (Cameron, 1978).

Several unique problems exist in assessing effectiveness within higher education. Institutions view themselves as unique in their goals when compared to other higher education institutions. Evaluating effectiveness can create defensive responses among the academic community. Applying the concept of effectiveness can be difficult as can defining measurable goals, as universities have been described as complex “garbage cans” (March & Olson, 1976), “organized anarchies” (Cohen & March, 1974), and “loosely coupled systems” (Cameron, 1978; Weick, 1976). However, despite these difficulties, scholars have continued to search for valid frameworks, because of the importance of effectiveness studies. By studying factors that are predictive of organizational effectiveness, managers can examine their actions in order to understand what is occurring and improve effectiveness (Cameron 1986).

**Cameron’s Approach**

Until 1978, almost no higher education effectiveness studies had been done and those that had been done were not focused on colleges as organizations, rather they looked at individual variables or the quality of specific programs (Cameron, 1978). Recognizing the problems in measuring effectiveness and that no single theory existed
that was applicable to all organizations, Cameron developed criteria appropriate to higher education organizations. Cameron created a multidimensional approach that allows researchers studying higher education organizations to compare assessments across organizations and to rely on different constituencies within the organization depending on the variables being studied (Forbes, 1998).

In 1978, Cameron conducted a two-phase study in an effort to deduce organizational effectiveness criteria for higher education institutions that would allow researchers to make comparisons across organizations. In the first phase, Cameron interviewed dominant coalition members (administrators, deans and chairs) twice at different types of New England based institutions that had less than 10,000 undergraduate students. Respondents were asked about the characteristics of effective colleges. Interviews were conducted at four schools with two additional schools added for the second round of interviews. After data analysis, interviews revealed nine different effectiveness dimensions. They are:

1. *Student educational satisfaction* – degree of satisfaction with their educational experiences at the institution.

2. *Student academic development* – extent of academic attainment, growth, and progress of students at the institution.

3. *Student career development* – extent of occupational development, emphasis on career development and opportunities for development provided by the institution.

4. *Student personal development* – nonacademic, noncareer-oriented areas, and the emphasis on personal development and opportunities provided by the institution.
5. Faculty and administrator employment satisfaction – satisfaction of faculty members and administrators with employment at the institution.

6. Professional development and quality of the faculty – extent of professional attainment and faculty development, and the amount of stimulation toward professional development provided by the institution.

7. Systems openness and community interaction – emphasis placed on interaction with, adaptation to, and service in the external environment.

8. Ability to acquire resources – institution’s ability to acquire resources from the external environment such as good students and faculty, and financial support.

9. Organizational health – benevolence, vitality, and viability in the internal processes and practices at the institutions (Cameron, 1978).

After defining the nine dimensions, Cameron created two questionnaires. The first, sent to 75 administrators and department chairs at the six schools, sought information on the extent to which their institution possessed characteristics of the nine dimensions. The second questionnaire sought objective data from institutional records (Cameron, 1978). Coefficient alpha was applied to test internal consistency and reliability, and all nine dimensions were found to be within acceptable reliability levels (Cameron, 1978). Other findings of note by Cameron were that institutional affiliation did have a significant effect on survey responses for combined organizational effectiveness but that the position held by the respondent did not, and that no university was perceived effective in all nine dimensions.

When studying effectiveness, it is important to also understand what organizational domains exist, given that organizations such as universities operate in
multiple domains. However, organizations generally are not effective in all domains simultaneously and being effective in one domain usually hampers effectiveness in others (Cameron, 1981). Cameron (1981) set out to identify the domains that exist in higher education institutions. Using survey data from 1,317 dominant coalition members at 41 institutions, Cameron confirmed the nine dimensions of organizational effectiveness noted above and identified four domains. The domains are set out below with corresponding effectiveness dimensions:

1. **External adaptation** – student career development; system openness and community interaction

2. **Morale** – student educational satisfaction; faculty and administrator employment satisfaction; organizational health

3. **Academic** – student academic development; professional development and quality of the faculty; ability to acquire resources

4. **Extracurricular** – student personal development

Cameron (1981) confirmed that organizational effectiveness is a multi-domain construct in higher education institutions and that effectiveness in external domains may mitigate effectiveness in internal domains.

Cameron validated and extended his 1978 and 1981 studies in 1986. Cameron (1986) focused on identifying important predictor variables, rather than testing a hypothesized relationship between specific variables and effectiveness dimensions. This study examined effectiveness at 29 colleges and universities in the northeast United States by obtaining surveys from 1,240 individuals from the dominant coalition at these institutions. The five factors used as predictors of effectiveness were external
environment, institutional structure, institutional strategy, demographics, and institutional finances. Among Cameron’s four research questions in the study was “what factors are most predictive of organizational effectiveness in colleges and universities (Cameron, 1986, p. 90)?” Survey results confirmed the same nine dimensions of effectiveness that had appeared in prior research. Analysis showed internal consistency reliability (ranging between .72 and .92) and discriminant reliability to be sufficient for the nine dimensions to be used as the basis of institutional performance profiles (Cameron, 1986).

**Primary Framework in Higher Education**

Cameron’s nine dimensions are the primary framework for studying organizational effectiveness in higher education. The framework has been used in numerous studies to examine the impact of various independent variables on the nine effectiveness dimensions as dependent variables. Below I summarize multiple studies, focusing on those that have included financial conditions and management strategies as part of the research. The studies, in total, reflect the broad based use of Cameron’s framework to study organizational effectiveness in higher education institutions.

**Unionism.** Cameron (1985) examined the cause-effect of unionism and organizational effectiveness as a follow up to his 1982 cross-sectional study where unionized public institutions scored lower on eight of the nine effectiveness dimensions, but no causal conclusions could be drawn. Cameron’s 1985 research question was whether unionism leads to ineffectiveness or vice versa. Cameron surveyed dominant coalition members at multiple four-year colleges in 1976, 1980, and 1983. Eighteen schools were common to all three surveys. Using cross-lagged correlation analysis, Cameron measured effectiveness using the nine dimensions and found, in comparison,
that unionized institutions scored lower on the nine dimensions across all survey time periods. With regard to the correlation between unionism and effectiveness, Cameron’s findings suggested that ineffectiveness over time led to unionism but that effectiveness did not improve once an institution was unionized. Cameron’s study also made two other findings that are generally relevant to higher education effectiveness studies. First, results revealed that survey responses are not simply products of a respondent’s a priori attitudes. Rather, the nine dimensions of effectiveness actually indicate characteristics of institutional performance. Second, when asked about organizational effectiveness the ratings given by faculty, administrators, and trustees were essentially the same (Cameron, 1985).

**Institutional Culture.** A number of studies have focused on institutional culture and what impact, if any, it has on organizational effectiveness. Most attention has been paid to this variable at two-year colleges. Smart and Hamm (1993a, 1993b) examined culture and mission at two-year colleges. Utilizing a survey that combined institutional performance questions and Cameron’s original instrument to measure the nine effectiveness dimensions, they collected data from 1,332 faculty and administrators at thirty randomly selected two-year colleges. Smart and Hamm (1993b) verified the applicability of Cameron’s nine dimensions to two-year colleges with factor analysis. Then, using multivariate analysis of covariance (MANCOVA), Smart and Hamm (1993b) found generally that schools with a tripartite mission (technical education, transfer degrees, and adult education programs) are perceived most effective, while those with a dual mission are least effective when the covariates of size and financial difficulty are controlled for. Smart and Hamm’s (1993a) companion study, focused on dominant culture type, used the same data set and, again, controlled for college size and financial
Generally, the dominant culture type is strongly related to perceived effectiveness at two-year colleges. Adhocracy culture (innovators focused on growth and development) was perceived as most effective and hierarchy culture (emphasizing rules and policies through bureaucratic leadership) as least effective. Clan (leader is a mentor that focuses on cohesion) and market cultures (leader is a producer with emphasis on competitive actions) were midrange across the nine dimensions.

Other studies at two-year colleges have examined relationships between culture type and leadership. Smart (2003) used a competing values framework to examine the extent perceived organizational effectiveness was related to perceptions of culture and leadership roles. Citing Cameron (1986) and Cameron and Tschirhart (1992), Smart noted that there is abundant evidence that the most powerful factors associated with effectiveness tend to be under the control of campus leaders (Smart, 2003, p. 674). Rather than looking at dominant culture, Smart examined all four culture types (adhocracy, clan, hierarchy, market). Using Cameron’s nine dimensions as the framework to measure effectiveness at 14 community colleges, Smart found, contrary to previous research, that campus officials should seek a mix of all culture types rather than trying to establish a dominant culture. Further, campus leaders were perceived more effective if they could blend skills as a motivator, vision setter, task master, and analyzer rather than focusing on fewer skills.

Patterson (2003) also researched leadership at two-year colleges focusing on the relationship between behavioral complexity in Hart and Quinn’s (1993) four leadership roles and effectiveness, controlling for culture type and mission agreement. Patterson, based on 1,423 survey responses from administrators, professional staff, and full-time
faculty at 14 public two-year colleges, found a general pattern of increasing perceptions of effectiveness on the dimensions of faculty and administrator employment satisfaction, ability to acquire resources, and organizational health, as the level of behavioral complexity in use of the leadership roles increased.

Culture type has also been studied at four year universities. Cameron and Freeman (1991) collected information about the nine dimensions of effectiveness and components of culture from dominant coalition members at 334 four-year universities. The universities were representative of all institutions based on enrollment, degrees offered, and the ratio of public and private colleges. Mean scores for each effectiveness dimension at each institution were computed and comparisons made. No significant differences existed between universities with congruent and incongruent culture on any effectiveness dimension. Similar results were found when comparing strong and weak culture institutions. However, significant relationships did exist between some effectiveness dimensions and culture types. For example, clan culture scored highest in the student educational satisfaction, student personal development, faculty and administrator employment satisfaction, and organizational health dimensions.

Smart and St. John (1996) researched the linkage between culture type and strength, and organizational effectiveness. Approximately 3,500 surveys were received from dominant coalition members at 332 institutions. Responses were aggregated at the institutional level. Study covariates were student enrollment and resource affluence (expenditures per student). Smart and St. John (1996) found that differences in organizational effectiveness on the basis of culture type or culture strength were not influenced by the covariates. Overall, strong academic cultures were not perceived more
effective than weak cultures. However, cultural values being aligned with management practice was essential to improving performance.

**Academic Subunit (school/college level) Studies.** While Cameron’s framework was initially established to compare organizations at the institutional level, it has been used successfully to study smaller organizational units as well. Cameron and Whetten (1983) noted the importance of shared governance and asking faculty about perceptions of organizational effectiveness, especially at the school or college level.

Shook (2000) compared faculty perceptions of organizational effectiveness using Cameron’s framework within various schools of an individual university system to determine if perceptions of effectiveness at one system campus would predict perceptions of the same school on a different system campus. Surveys were sent to 1,464 full-time faculty members at two institutions within the same university system. The faculty members had no administrative duties and did not otherwise fall into the dominant coalition. For a school to be included, a minimum of five faculty participants had to return the survey. Data analysis indicated that significant differences did exist between different schools’ faculty perceptions of effectiveness in at least five of the nine domains at 12 different schools. Shook concludes that faculty perceptions of effectiveness at a school on one campus were predictive of perceptions of effectiveness by faculty at the same school on a different campus.

Gigliotti (1987) adapted Cameron’s model to 10 State University of New York community colleges and surveyed 263 people (158 responses) to determine if faculty and department heads in Business departments (profession-based) and English departments (discipline-based) had the same perceptions of organizational effectiveness characteristics
and culture types in their departments. Gigliotti (1987) found that generally there were significant differences in the perceptions of effectiveness of faculty and department heads between the two types of departments. The studies described above, along with Clott (1995) discussed below, provide evidence that Cameron’s nine dimensions of organizational effectiveness can be applied broadly as a framework to study different aspects of higher education institutions.

More germane to this study, several studies utilizing Cameron’s framework have examined aspects of financial circumstances and management strategies in higher education institutions. Generally, the studies have examined the impact of declining resources and found that fewer resources alone will not negatively impact Cameron’s nine dimensions of effectiveness. Rather, it is implementation of decisions to manage declining resources that has the most impact.

**Finances and Resources Studies.** Cameron (1986), summarized above, studied effectiveness at 29 colleges and universities in the northeast United States in 1980 that had also been studied in 1976. Effectiveness scores for each institution were correlated with indicators of financial well-being, enrollment trends, and academic quality ratings. Cameron noted that there should be a positive correlation between these factors and effectiveness. The indicators of financial health were termed financial independence (revenue proportion from tuition, appropriations, grants, gifts, endowment and others), financial flexibility, financial cushion, revenue drawing power, and endowment yield (Cameron, 1986). In this study, financial health was found to correlate with effectiveness, as seven of the 10 schools with the highest overall effectiveness scores had the highest scores with regard to all five financial health indicators (Cameron, 1986).
Proactive management and student quality were also positive influential variables while environmental turbulence had the most negative impact. Of note, Cameron found that the evidence of a relationship between financial health and effectiveness was not a product of any halo effect where more resources biased respondents into positive effectiveness ratings. Comparing institutions between 1976 and 1980, institutions that improved in effectiveness ratings were strategically oriented to fundraising, were major doctoral type institutions, and had high expenditures per student. In general, Cameron found that declining effectiveness was associated with some degree of resource allocation problems, and that strategic management was related to improvement. The fact that positive dimensions of the environment were not strong predictors of effectiveness indicated that the environment is a factor that must be overcome, rather than one that contributes to effectiveness.

Cameron, Kim, and Whetten (1987), investigated the relationship between conditions of decline and turbulence, and 12 predicted negative organizational attributes that are expected to emerge during decline (“dirty dozen”). Organizational decline was defined in this study as “a condition in which a substantial, absolute decrease in an organization’s resource base occurs over a specified period of time” (Cameron, et al., 1987, p. 224). Declining organizations were characterized by a wide range of organizational processes that erode effectiveness and undermine member satisfaction and commitment (Cameron, et al., p. 225). The study examined 331 demographically diverse institutions with revenues tracked between 1977 and 1982. Turbulence (the rate of change) was associated with a percentage change in revenues over time. A five percent decrease in revenue over the six years was defined as decline, a five percent increase as
growing, and all other circumstances as stable. Dominant coalition members (3,406 surveys returned) were surveyed about effectiveness and the extent that the “dirty dozen” attributes existed at their institution. Examples of the “dirty dozen” include the scapegoating of leaders, members being resistant to change, and low morale. Findings indicated that “dirty dozen” attributes are significantly more likely to appear under circumstances of decline rather than turbulence. Three other important implications from this study are that (a) the loosely coupled nature of higher education institutions did not buffer organization members from “dirty dozen” attributes induced by decline; (b) the uncertainty assumed to result from decline and turbulence may differ depending on the condition that produces it; and, (c) organizations that have “dirty dozen” attributes may perpetuate their own decline.

Smart (1989) studied organizational decline and effectiveness in private higher education. Unlike most other effectiveness studies, Smart surveyed faculty members, rather than the dominant coalition, because absorbing the costs of decline falls on organization members more than administrators. Smart’s sample consisted of 1,131 Carnegie Foundation for the Advancement of Teaching surveys completed by faculty nationally in 1984. This survey measured effectiveness across three domains that are conceptually similar to Cameron’s framework. The faculty represented 190 institutions. A composite measure of organizational decline was developed, and institutions were placed into four different groups (severe, stable, healthy and prosperous). Using multivariate analysis of variance, differences in effectiveness classified according to the four levels of decline were not consistent across the three types of private institutions in the study (research, comprehensive, and liberal arts). While there was no difference in
perceived effectiveness at research and comprehensive institutions, liberal arts colleges classified as in severe decline were perceived less effective. This study highlights the importance of considering institutional differences when studying organizational effectiveness and provides support for the current study’s examination of different schools and colleges on a large campus.

Along the school/college line of inquiry, Clott (1995) studied only business schools, looking at the relationship between organizational effectiveness and managerial strategy, culture, change in external environment, and resource dependency. The two primary external constraints in terms of resource dependency were financial resources and student enrollment. Using a causal model, Clott surveyed 304 business school deans in the United States and Canada. Due to a lack of construct validity in measuring the perceptions of business school deans, Cameron’s nine dimensions were reduced to seven. Internal culture had the most impact on effectiveness and active managerial strategies were also important. Resource availability had only a modest influence on four effectiveness dimensions.

Smart, Kuh, and Tierney (1997) examined relationships between culture, decision-making, and effectiveness by surveying faculty and administrators at 30 two-year colleges. A causal model used Cameron’s framework and included decision-making. The study assumed that missions, cultures, and external environments differed. Among the independent variables was college financial health, defined as resources being more difficult to obtain in the last year and revenue decreasing over the last year. In all, seven variables explained 44 percent of the variance in organizational effectiveness.
Financial health and enrollment declines had the most significant negative impact on effectiveness.

The last significant effectiveness study done with financial circumstances as a key component was Cameron and Smart (1998). They noted that at the time, little work on downsizing (the general response to decline) in response to declines in revenue or revenue streams had been done. This was still the case in 2010-2011. Cameron and Smart’s key research question was whether declines in required levels of financial resources were related to deterioration in effectiveness in colleges and universities (Cameron & Smart, 1998, p. 67). Variables were decline in resources, Cameron’s nine dimensions of organizational effectiveness, and dysfunctional organization attributes (“dirty dozen”). An organization was classified as in decline if actual revenues remained the same or were less from one year to the next. Surveys were sent to trustees, administrators and department heads at 334 four-year institutions. The response rate was 49 percent with answers aggregated at the institutional level. Cameron and Smart (1998) found that a decrease in financial resources did not necessarily lower organizational effectiveness. Institutions experiencing resource decline could maintain moderate to high levels of effectiveness if management was proactive and the organization avoided developing “dirty dozen” attributes. The dirty dozen were better predictors of organizational ineffectiveness than financial decline (Cameron & Smart, p. 77).

These studies are generally inconclusive as to the impact that financial health and the availability of resources have on organizational effectiveness. While some indicate there is a direct correlation, others find less correlation and show that management strategies related to managing financial stress are more predictive.
Management strategies. Some of the studies summarized above revealed findings in relation to management strategies and organizational effectiveness. The results of Cameron (1986), Clott (1995), and Cameron and Smart (1998) all pointed in some fashion to the importance of active managerial strategies. However, Cameron and Tschirhart (1992) have done the most complete study directly looking at management strategies and organizational effectiveness. They noted that colleges were facing a postindustrial environment that was characterized by turbulence, competitiveness, lean resources, unpredictability and periodic decline, similar to that faced in 2010 by public higher education. While there is a potential negative association with effectiveness, there is evidence that managers can adapt if they respond appropriately and, thus, maintain effectiveness. For example, Cameron (1986) found that proactive strategic management with an external emphasis had a significant positive impact on effectiveness. In the Cameron (1986) study, between 1976 and 1980 institutions that improved in effectiveness, among other things, were strategically oriented to fundraising and had high expenditures per student.

Cameron and Tschirhart (1992) identified which management strategies and decision processes are effective in mitigating the expected negative effects of postindustrial environments. Higher education organization strategies were characterized as domain defense (protecting the core), domain offense (enlarging the core) and domain creativity (innovate and boundary stretch into new areas). Decision processes are collegial, rational, bureaucratic, political and organized anarchy. Surveys were sent to dominant coalition members at 331 institutions. Respondents were asked to assess effectiveness and categorize resource allocation decisions to determine the decision
processes that existed. Revenue and enrollment patterns were included as additional context variables. Contrary to expectations, neither resource decline nor unpredictability in the environment had a significant relationship with any dimension of effectiveness. Results showed that when managers implemented domain offense strategies and used collegial and political/bureaucratic decision processes, that the negative effects of postindustrial environments on effectiveness dimensions were mitigated (Cameron & Tschirhart, 1992, p. 99). The study offered one additional important conclusion: Managerial strategies are associated with effectiveness and partially mitigate negative effects, with domain offense strategies being the most effective.

**Organizational Effectiveness Conclusion**

Cameron (1978) stated that “institutions of higher education are effective to the extent to which they produce valued and desired outcomes, maintain organizational viability and vitality, and acquire needed resources without destroying the environment” (Cameron, 1978, p. 26). Public higher education was in the midst of financial change in the years preceding the 2010-2011 fiscal year. State support had been decreasing and institutions were seeking alternative sources of revenue to survive.

Organizational effectiveness studies are needed in order to assess and validate performance to outside constituencies. Cameron’s (1978) nine dimensions are an established framework that have been used repeatedly in higher education organization studies as dependent variables to examine the impacts made by such factors as financial decline, leadership strategy, culture and mission. However, there has been no significant study post Cameron and Smart (1998) that has examined effectiveness with any context given to financial conditions. Since then, universities have continued to face declines in
resources and the mix of revenue sources has been changing. This study used Cameron’s nine-dimensional organizational effectiveness framework to study the relationship between department revenue mix and department faculty perceptions of organizational effectiveness.

**Expected Findings**

From the perspective of open systems theory and its focus on adaptive organizational behavior (Katz & Kahn, 1978), it was anticipated that the study would reveal departments with higher alternative revenue percentages (indicating increased abilities to generate revenue to offset lost appropriations) would be perceived by faculty to be more effective. This would be evidence that the department had successfully adapted to its environment and that management strategies to replace state funding were successful.

Consistent with previous studies of organizational effectiveness using Cameron’s (1986) model, however, it was expected that evidence of both positive and negative correlations with organizational effectiveness would be found. An organization can be effective and ineffective on different scales simultaneously (Cho, 2007). What could not be anticipated was what types of revenue would have either positive or negative linear relationships with specific organizational effectiveness factors. The revenue sources literature revealed both positive and negative potential consequences from generating different types of revenue (e.g. Lyall & Sell, 2006).

**Conclusion**

MU’s status as research extensive university, coupled with the context of an extreme decline in state support and increased alternative revenues, made it an
appropriate subject for a study examining the correlation between revenue mix and faculty perceptions of organizational effectiveness.
Research Design and Methods

Public higher education institutions are experiencing continuous, and perhaps permanent, reductions in state support. Out of necessity, public colleges and universities must seek out and generate alternative revenue sources. Prominent among the new revenue strategies are private philanthropy, research dollars, increased tuition, and patent and licensure monies generated by technology transfer of university research.

The purpose of this study was to determine if a correlation existed between department revenue mix and department faculty perceptions of organizational effectiveness. For this study, revenue mix was the proportionate percentages of general revenue, fees, gifts, investment, grants, contracts, and internal and external revenue/sales for an academic unit. Cameron’s nine dimensions of effectiveness for higher education institutions was the organizational effectiveness framework. The study’s setting was the University of Missouri – Columbia (MU) that had a 2010 fall enrollment slightly above 32,000 students. MU has 13 schools and colleges, three of which are schools that award first professional degrees (law, medicine, and veterinary medicine). This study focused on MU schools and colleges that award undergraduate degrees and analysis occurred at the department level. As described within, the only exceptions to the department level analysis was the schools of nursing and journalism that reported revenue at the school level. The study sought to answer the following question:

What is the relationship between department revenue mix and department faculty perceptions of that unit’s organizational effectiveness?

In this chapter, I identify the case setting, describe the research design and state its rationale, as well as establish the boundaries of the study as recommended by Cameron
(1986) when conducting organizational effectiveness studies at higher education institutions. I describe the data sources and how data were collected. Finally, I discuss the methods of data analysis that were employed.

**The University of Missouri - Columbia (MU)**

This study takes place at MU. MU was classified by Carnegie in 2010 as a RU/VH (research university, very high activity), university and was a member of the AAU. MU, as of fall 2010, enrolled approximately 32,000 students. MU, inclusive of the university’s hospital and clinic operations, had a budget that neared $2 billion and employed slightly over 13,000 persons, of which nearly 2,000 were faculty and instructors.

In 2010-2011, the state of Missouri funded public higher education below the national average. Between fiscal years 1998 and 2008, Missouri ranked 46th in the percentage change of state tax funds for operating expenses to higher education, providing only a 20.1 percent state tax fund increase for higher education compared to the national average increase of over 56 percent. Using other common measurement statistics, in 2008 Missouri ranked 44th in appropriations for higher education per $1,000 of personal income and 47th in appropriations per capita. Between 2002 and 2007, Missouri’s individual full-time equivalent student appropriation fell 9.8 percent. For the 2009-2010 academic year, public four-year colleges in Missouri received 2008 funding levels. For fiscal year 2010-2011, public higher education in Missouri received funding at approximately 95 percent of 2008 funding levels.

At MU, between 2001 and 2010, legislative fiscal support for the campus declined significantly. In fiscal year 2001, the institution received just over $193 million dollars
from the state legislature; in fiscal year 2010 support had been reduced to around $189 million dollars. In order to maintain funding with the rate of inflation during this time frame, state appropriations for MU would have had to exceed $245 million dollars in 2010. If adjusted for inflation and enrollment increases, the appropriation would have needed to near $319 million to equal 2001 funding levels. In 2010, appropriations accounted for only 14 percent of the university’s total revenue.

In response, MU had sought to generate alternative sources of revenue. Prior to academic years 2009-2010 and 2010-2011, tuition rose steadily. Economic development had become a fourth mission of the university. Research activity continued to increase as in fiscal year 2009 the university had nearly $544 million in research expenditures, an increase of nearly $150 million since fiscal year 2005. Licensing revenue had also increased to roughly $10 million in 2009. MU was part of a university system that had a stated goal of reaching $50 million annually in patent and licensing revenue. In 2008, MU completed a multi-year fundraising campaign that generated over $1 billion in private gift commitments.

**Research Design and Rationale**

A correlational research methodology was used as the purpose of the study was to quantify any statistical association between the independent variable (revenue mix as described above) and the dependent variables (Cameron’s nine factors of organizational effectiveness). This case study occurred in a natural setting where data and variables could not be manipulated, nor could control groups be established.
**Boundaries of Study**

Cameron (1986), citing Cameron and Whetten (1983), identified seven guidelines that should be used to bound or circumscribe the effectiveness construct in organizational studies. Not all possible criteria or perspectives can be accounted for, so researchers must be explicit about what they are and are not measuring (Cameron, 1986). This is especially necessary in ambiguous settings, such as universities and colleges, which are loosely coupled systems (Weick, 1976) so that readers have a full understanding of what is being assessed and measured. The seven guidelines that bind organizational effectiveness studies are:

1. From whose perspective is effectiveness being judged?
2. On what domain of activity is the judgment focused?
3. What level of analysis is used?
4. What is the purpose of the assessment?
5. What time frame is employed?
6. What type of data is sought?
7. What is the referent against which effectiveness is judged? (Cameron, 1986)?

**From whose perspective is effectiveness being judged?** In this study, faculty perceptions of organizational effectiveness were measured. While many higher education studies have surveyed dominant coalition members (administrators, deans, and department chairs), faculty members are another acceptable segment to survey. For example, Smart (1989) surveyed faculty members because absorbing the impact of financial circumstances fell on organization members more than administrators. For this
study, MU faculty were relevant informants as they were charged with the responsibility of seeking and obtaining research grant and contracts, and often had roles in generating other sources of revenue. As a group, they were impacted by the implementation of actions caused by budget reductions.

**On what domain of activity is the judgment focused?** This study was limited to studying schools and colleges that award undergraduate degrees. Faculty in these colleges had comparable experiences given the level of academic instruction being delivered. This domain was comparable across all schools and colleges at MU except law, medicine, and veterinary medicine. These three units award first-professional degrees as defined by the U.S. Department of Education (2008). MU schools and colleges that award undergraduate degrees are: 1) College of Agriculture, Food, and Natural Resources (including School of Natural Resources); 2) College of Arts and Science (including School of Music); 3) Trulaske College of Business (including School of Accountancy); 4) College of Education (including School of Information Science and Learning Technologies); 5) College of Engineering; 6) School of Health Professions; 7) College of Human Environmental Sciences (including School of Social Work); 8) School of Journalism; and, 9) School of Nursing.

**What level of analysis is used?** The level of analysis for this study was the departments in the schools and colleges that award undergraduate degrees identified above. Analysis at this level was important because it allowed for comparisons across the university’s academic departments. With minor exceptions as noted herein, departments are the organizational unit at which budgets at MU are managed and
expended. Revenue data for the schools of journalism and nursing were reported at the school rather than department level.

**What is the purpose of the assessment?** The purpose of the assessment was to determine whether there was any correlation between department revenue mix and department faculty perceptions of organizational effectiveness using Cameron’s organizational effectiveness factors as the framework.

**What time frame is employed?** The study was static, assessing current faculty perceptions of organizational effectiveness. Revenue source data were obtained for the 2010-2011 fiscal-year. In order to help ensure that faculty who experienced MU’s financial circumstances in 2010-2011 were surveyed, only benefit eligible faculty who were appointed prior to September 1, 2012, were included in the survey population.

**What type of data is sought?** Two sources of data were obtained. Described in more detail below, Cameron’s survey questionnaire was used to collect data from faculty regarding their perceptions of organizational effectiveness. MU financial records were collected and examined to determine department revenue sources and proportionate percentages in order to calculate revenue mix.

**What is the referent against which effectiveness is judged?** As noted above, academic department revenue mix was the referent against which organizational effectiveness was correlated. Revenue mix consisted of the proportionate percentages of general revenue, fees, gifts, investment, contracts, grants, and internal/external revenue and sales.

In this section, I have established the boundaries for this study. Faculty from the MU schools and colleges that award undergraduate degrees were surveyed to determine
their perceptions of organizational effectiveness. Effectiveness factor scores were generated and compared at the department level. In chapter four, I describe the results that answered whether a correlation existed between faculty perceptions of organizational effectiveness and their department’s revenue mix. In the remainder of this chapter, I describe the data sources, the data collection methods and processes, and data analysis methods.

**Data Sources and Collection**

Cameron’s organizational effectiveness survey instrument was modified to seek faculty perceptions of effectiveness at the department and school/college, rather than at the institutional, level. Using a web-based delivery method (Qualtrics), the survey was sent to benefit-eligible faculty appointed prior to September 1, 2012, and their responses served as one source of data collection. The other data source were university documents that identified department level revenue sources for the 2010-2011 academic year.

**Organizational Effectiveness**

Organizational effectiveness is important to study because organizations are held accountable by different interest groups (Goodman & Jennings, 1977). As a concept, organizational effectiveness lies at the center of all models and theories of organization and is the ultimate dependent variable as individuals are constantly faced with the need to make judgments about the effectiveness of organizations (Cameron & Whetten, 1996). However, because it is a concept it can be examined by different methods depending on how effectiveness is being defined.

Recognizing that no single theory existed that was applicable to all organizations, Cameron created a multidimensional approach that allows researchers studying higher
education organizations to compare assessments across organizations and to rely on different constituencies within the organization depending on the variables being studied (Forbes, 1998). Cameron’s approach over time has brought some consensus as to how to study effectiveness in higher education settings (Cho, 2007).

Reliability and Validity. Cameron’s survey has been utilized in numerous organizational effectiveness studies and has been established as a reliable and predictive measurement tool. Cameron (1978) initially developed his survey by conducting a two phase study to deduce organizational effectiveness criteria for higher education institutions that would allow researchers to make comparisons across organizations. In the first phase, Cameron interviewed dominant coalition members (administrators, deans and chairs) twice at different types of New England based institutions that had less than 10,000 undergraduate students. Respondents were asked about the characteristics of effective colleges. After data analysis, Cameron identified the nine effectiveness factors described in chapter two. Cameron then sent a questionnaire to 75 administrators and department chairs at six schools to determine the extent to which their institution possessed characteristics of the nine dimensions. Coefficient alpha was applied to test internal consistency and reliability and all nine dimensions were found to be within acceptable reliability levels. Using Nunnally’s (1967) suggestion that a reliability of between .50 and .60 was acceptable for exploratory research, Cameron found in the first study that the lowest reliability coefficient was .601 (student career development), while the highest was .928 (organizational health). Coefficients were fairly evenly distributed across the range. In the second study, reliability coefficients ranged from .628 (student educational satisfaction) to .924 (organizational health). Five of the coefficients
(professional development and quality of the faculty; system openness and community interaction; student personal development; ability to acquire resources; and, faculty and administrator employment satisfaction) were between .83 and .89 (Cameron, 1978).

Cameron confirmed the construct validity of the nine factors in 1986. Cameron (1986) focused on identifying important predictor variables, rather than testing a hypothesized relationship between specific variables and effectiveness dimensions. In the study, Cameron examined effectiveness at 29 colleges and universities in the northeast United States by obtaining surveys from 1,240 individuals from the dominant coalition at these institutions. The five factors used as predictors of effectiveness were external environment, institutional structure, institutional strategy, demographics, and institutional finances. Among Cameron’s four research questions in the study was “what factors are most predictive of organizational effectiveness in colleges and universities?” (Cameron, 1986, p. 90). The same nine dimensions of effectiveness emerged from the study. Internal consistency reliabilities for the dimensions ranged from .72 to .92 with a mean reliability coefficient of .82. Factor analysis revealed average inter-correlation among the nine dimensions was .42 indicating that, whereas the dimensions are conceptually distinct, certain of the dimensions vary together in ratings of effectiveness (Cameron, 1986). These results indicate that the nine dimensions of organizational effectiveness have adequate internal consistency reliability and discriminant validity to be used as the basis for the institutional performance profile (Cameron, 1986, p. 96).

Since Cameron’s initial work, a multitude of studies as discussed in chapter two have used Cameron’s survey instrument to assess organizational effectiveness in many higher education settings. The only exception discovered was Clott’s (1995) study of
business school deans. Clott found that Cameron’s nine dimensions lacked validity for measuring perceptions of business school deans and modified the study to seven dimensions. Clott’s study assessed a very specific population and therefore is dissimilar to the current study. This study relied on the overwhelming evidence that Cameron’s survey instrument is reliable and valid.

**Data Collection Procedures.** Cameron’s original survey instrument contains 53 items that are scored on a Likert scale of one to seven with scores ranging generally from “not effective” to “very effective.” Specific items are grouped together to establish the nine organizational effectiveness factors. For this study, the instrument was modified to ask questions that would assess faculty perceptions of organizational effectiveness at the department and school/college level. One question was added to the survey (not part of the instrument) that asked the faculty member to identify her/his academic home unit. Academic home units were identified by, and corresponded with, reports of academic home unit revenue data from the MU budget office. The survey was recreated in electronic format using Qualtrics, a web-based survey tool, using the MU site license (see appendix A).

Possible faculty participants were identified by obtaining a list of benefit eligible faculty from MU’s Office of Institutional Research. The requested list was limited to the schools and colleges identified above (those that award undergraduate degrees) and only name, email, and academic home department information was requested. Due to the timeframe of the revenue data (2010-11 academic year), the faculty request was further restricted to faculty who were benefit eligible and appointed prior to September 1, 2012. The faculty list contained a total population of 1,301.
Surveys were submitted to all 1,301 identified faculty members by email. The email was delivered by MU’s Division of Information Technology through their approved mass email system. For college faculty, this method of delivery is acceptable as the sample population has high internet access rates (see Dillman, 2009; Shih & Fan, 2008). Shih and Fan’s (2008) meta-analysis of studies that used survey data found that for college populations (students and faculty), the response rate for web-based surveys was three percent (3%) higher as compared to response rates for mail surveys.

The initial email correspondence (see appendix B) was developed using procedures suggested by Dillman (2009) in an effort to help increase response rate. The email explained the purpose of the study and research question being posed, and solicited faculty members for their help and advice as understanding what correlations existed could inform policy makers when they implement future revenue and funding strategies. The email explained that survey answers were confidential, provided contact information for questions, and supplied a link to the web-based survey. The email was personalized to address faculty members by name and sent on November 21, 2013. Follow up email requests for survey responses were sent on December 5, 2013, and January 28, 2014 (see appendix C and D). The last email request was purposely sent after MU’s holiday break in an effort to maximize any potential additional responses.

**Survey response rate.** The survey was closed for response purposes on March 1, 2014. As of that date, 209 survey responses (16.1 percent) had been received. For the purposes of this study, any survey that had 39 or more of the 53 survey items answered was included. Missing data was imputed using SPSS. One-hundred forty-five (145) surveys met this threshold for a response rate of 11.1 percent.
Variable Construction. To assure consistency in Likert scale responses so that all answers ranged from negative to positive effectiveness, the survey instrument was reviewed to determine if any questions needed to be rescaled for analysis purposes. Based on this review, 18 questions were rescaled (see appendix E).

After reverse scoring the data, survey responses were used to calculate organizational factor scores. Each participant’s item responses were sorted by effectiveness factor as originally designed by Cameron. For each factor, the total score of all answers in a factor group of survey items was divided by the number of questions in the factor. Calculated factor scores were then tested for internal consistency and reliability using Cronbach alpha coefficients as described in chapter four. Participants were then sorted by academic unit for analysis purposes. Fifty-three (53) academic units were represented by the 145 survey responses. Participant surveys were aggregated by academic unit and combined in order to generate factor scores for each of the 53 units for each of the nine organizational factor scores.

Department Revenues

The other source of data for this study were MU financial records obtained from the campus budget office that identified all revenue transactions by academic unit for the 2010-2011 academic year. Revenue transaction entries identified the source of revenue by account code, what unit received the revenue, descriptions of the type of revenue received, and the amount of the revenue. The raw revenue data contained 13,154 individual revenue entries.

Data Collection Procedures. The MU budget documents reported the revenue transactions among 75 academic units. Academic department revenue was reported
within each school/college with the exception of the schools of nursing and journalism whose data was reported at the school level. Among the identified units were numerous research centers and auxiliary operations. The Water Resources Center could be affiliated specifically with the Department of Civil and Environmental Engineering and was included in the study. Two revenue units were identified at the school level for journalism and business. These units were combined into one academic unit for each school respectively.

**Variable Construction.** The first step in coding the revenue data was to segment the revenue transactions by academic unit. Each unit’s revenue entries were coded based on the type of revenue that was received using MU accounting documents. Research centers and auxiliary operations that could not be associated with a single academic unit were not included. Revenue entries were coded into the following broad categories:

1. **General Revenue**: general legislative appropriations and other transfers of funds presumably originally received as appropriations and/or tuition dollars
2. **Fees**: hourly fees assessed to students per registered hour of academic instruction
3. **Contracts**: money received as part of a contract for services
4. **Gifts**: philanthropic funds received
5. **Grants**: moneys received pursuant to a research grant (private or government)
6. **Investment**: moneys received as the result of invested funds; primarily endowment earnings
7. **Revenue and Sales**: moneys received from internal and external entities for the delivery of goods and/or services by the department (e.g. registration fees for a hosted conference)

Multiple types of revenue data as identified by account categories were included in the broader categories identified above.

After the initial coding was complete, all revenue transactions were recoded to further refine the categorization of individual transactions to account for situations where revenue was received into one category but reflective of a different type of revenue
activity. For example, research board funds that were identified as general revenue were transferred to a department’s grants revenue. This revenue was generated by a faculty member’s research activity. Another example is study abroad fees that were generated by an academic unit’s efforts to generate other revenue by conducting study abroad experiences for students. These funds were moved to a department’s “revenue” category from “fees” (see appendix F).

After the recoding of revenue was complete, revenue categories for each department were summed and then divided by the unit’s total revenue to obtain a revenue category percentage (see appendix G). For analysis purposes, the general revenue and fees categories were combined into a single general operating revenue (“GOR”) category. The remaining categories (gifts, investment, grants, contracts, revenue and sales) were combined to create one alternative revenue percentage (“other revenue”). The original research design was to divide academic units with similar department revenue mixes into groups for analysis purposes and to determine any correlations with each type of revenue category. However, as described in chapter four, revenue mix was ultimately treated as one continuous independent variable as there were no natural breaks in the other revenue percentages data (see appendix H). Four revenue categories were analyzed for correlation with the effectiveness factors. The revenue categories included in the analysis as independent variables were other revenue (sum of the gifts, investment, grants, contracts, revenue, and sales revenue categories), gifts and investment, grants and contracts, and revenue and sales. The latter three categories were combined due to similarities in the type of revenue they represented.
Data Analysis

This study was correlational. In correlation studies, the researcher does not attempt to influence variables in order to determine if there is a causal relationship between independent and dependent variables. Instead, variables are measured to determine if any positive or negative linear relationships exist between them. Correlation results are described in chapter four. Pearson product moment was chosen as the test statistic because both variables were continuous. Due to the smaller sample size of survey responses, the p-value threshold chosen was $\leq 0.1$. Marginally significant results were reported at a p-value threshold of $0.1>p<0.15$.

Summary

In this chapter, I have set forth the boundaries of the study as recommended by Cameron and identified the types of data that were used to answer the research question. Cameron’s survey instrument was modified to seek faculty perceptions of effectiveness at the department and college/school level. I have described the process and procedure for soliciting responses from 1,301 MU faculty, as well as how responses were evaluated to create organizational effectiveness factor scores. I have identified the process for coding over 13,000 revenue transactions to create multiple revenue category percentages at the academic unit level. The results of the correlation analysis that answers whether a relationship existed between department revenue mix and faculty perceptions of organizational effectiveness at the unit level are found in chapter four.
Results

This study examined the question of whether a correlation existed between revenue mix at the academic unit level and department faculty perceptions of organizational effectiveness. Four revenue categories were included in the study for correlation purposes as independent variables. They were other revenue (total of gifts, investment, grants, contracts, revenue and sales), gifts and investment, grants and contracts, and revenue and sales. Faculty perceptions of effectiveness were identified by responses to Cameron’s survey instrument modified to measure perceptions at the department and school/college level, rather than the institutional level.

This chapter sets forth the results from the data analysis. I provide descriptive statistics for faculty survey responses with regard to each factor of organizational effectiveness and revenue mix. Reliability of the organizational effectiveness factors is reported using Cronbach Alpha coefficient scores. Correlation results are described using Pearson Product Moment using a p-value threshold of 0.1 for significance and 0.1 > p ≤ 0.15 for marginal significance.

Descriptive Statistics

Reported in tables 1 and 2 are the descriptive statistics for the nine organizational effectiveness factors and department revenue data. Using SPSS, range, mean, and standard deviation were calculated for each of the 53 academic units represented by faculty participants who responded to the survey instrument.

Faculty Perceptions of Effectiveness

Table 1 sets forth descriptive statistics for the nine organizational effectiveness factors. As described in chapter three, each factor is made up of several survey items that
elicited faculty perceptions of organizational effectiveness using a Likert scale ranging from one to seven.

Table 1

*Descriptive Statistics for Organizational Effectiveness Factors*

<table>
<thead>
<tr>
<th>Effectiveness Factor</th>
<th>n</th>
<th>Range</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Educational Satisfaction</td>
<td>53</td>
<td>2.2 - 7.0</td>
<td>5.165</td>
<td>.986</td>
</tr>
<tr>
<td>Student Academic Development</td>
<td>53</td>
<td>2.0 - 6.8</td>
<td>4.511</td>
<td>.850</td>
</tr>
<tr>
<td>Student Career Development</td>
<td>53</td>
<td>2.0 - 6.83</td>
<td>5.02</td>
<td>1.167</td>
</tr>
<tr>
<td>Student Professional Development</td>
<td>53</td>
<td>2.25 - 7.0</td>
<td>4.717</td>
<td>1.037</td>
</tr>
<tr>
<td>Faculty and Administrator Employment Satisfaction</td>
<td>53</td>
<td>2.0 - 6.0</td>
<td>4.446</td>
<td>.827</td>
</tr>
<tr>
<td>Professional Development and Quality of the Faculty</td>
<td>53</td>
<td>3.0 - 6.83</td>
<td>4.979</td>
<td>.919</td>
</tr>
<tr>
<td>System Openness and Community Interaction</td>
<td>53</td>
<td>1.47 - 6.4</td>
<td>4.238</td>
<td>1.015</td>
</tr>
<tr>
<td>Ability to Acquire Resources</td>
<td>53</td>
<td>1.5 - 6.4</td>
<td>3.925</td>
<td>1.001</td>
</tr>
<tr>
<td>Organizational Health</td>
<td>53</td>
<td>1.27 - 7.0</td>
<td>4.304</td>
<td>1.096</td>
</tr>
</tbody>
</table>
The descriptive statistics for the organizational effectiveness factors revealed patterns in faculty responses that provided some initial conclusions that are elaborated on in the correlation results discussed below. As expected, faculty survey response scores varied widely across the Likert scale ranging from 1.27 (organizational health) to 7 (student educational satisfaction, student personal development, organizational health). Mean scores for survey responses related to all nine factors varied far less, ranging narrowly between 3.925 (ability to acquire resources) and 5.165 (student educational satisfaction). Considering the general Likert scale for this study (least effective to very effective), the effectiveness factor mean scores led to an initial conclusion that faculty across MU felt that their academic unit was generally effective across all of the organizational factors measured, regardless of unit revenue mix. Except for ability to acquire resources, the other eight factors had mean scores above 4.0. In addition to student educational satisfaction, four other other factors (student academic development, student career development, student personal development, and professional development and quality of the faculty) had mean scores above 4.5 on the Likert scale.

This initial conclusion was reinforced by small variations in standard deviations. Standard deviations for the effectiveness factor mean scores ranged between .827 (faculty and administrator employment satisfaction) and 1.17 (student career development). With the exception of faculty and administrator employment satisfaction (.827) and student academic development (.85), the other six factors had standard deviations that ranged between .9 and 1.1. This narrow range generally around a standard deviation of 1.0, in conjunction with effectiveness factor mean scores, further suggests that faculty generally perceived their units to be effective.
Revenue Mix

Table 2 reports the descriptive statistics for department revenue for the 53 academic units that were represented by faculty participants.

<table>
<thead>
<tr>
<th>Revenue Category</th>
<th>n</th>
<th>Range of Percentages</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Minimum</td>
<td>Maximum</td>
<td></td>
</tr>
<tr>
<td>General Revenue</td>
<td>53</td>
<td>6.15</td>
<td>100.7</td>
<td>63.266</td>
</tr>
<tr>
<td>Fees</td>
<td>53</td>
<td>-.14</td>
<td>35.23</td>
<td>2.54</td>
</tr>
<tr>
<td>Contracts</td>
<td>53</td>
<td>-.68</td>
<td>2.74</td>
<td>.152</td>
</tr>
<tr>
<td>Gifts</td>
<td>53</td>
<td>.02</td>
<td>43.91</td>
<td>5.291</td>
</tr>
<tr>
<td>Grants</td>
<td>53</td>
<td>-1.77</td>
<td>57.33</td>
<td>20.817</td>
</tr>
<tr>
<td>Investment</td>
<td>53</td>
<td>0</td>
<td>1.44</td>
<td>.157</td>
</tr>
<tr>
<td>Revenue</td>
<td>53</td>
<td>-.01</td>
<td>70.57</td>
<td>4.575</td>
</tr>
<tr>
<td>Sales</td>
<td>53</td>
<td>0</td>
<td>46.9</td>
<td>3.229</td>
</tr>
</tbody>
</table>

*It is assumed that negative percentages can exist due to the accounting flow of money across multiple fiscal years.

Not surprisingly, table 2 shows that a wide variation in revenue percentages existed for all 53 academic units represented across the revenue categories. General revenue ranged between 6.15 percent and 100 percent of department revenue. The remaining revenue categories showed minimum revenue percentages near zero ranging upwards to 70.57 percent (revenue). Contracts and investment revenue was consistently low across all 53 departments with maximum percentages of 2.74 percent and 1.44 percent, respectively.
Each of the 53 academic units represented by faculty participants did not report revenue for each revenue category. As a result, for this study similar alternative sources of revenue (based on the behavior that generated the revenue) were combined. Four revenue categories became the basis for which correlation was measured against faculty perceptions of organizational effectiveness. The four revenue categories were: 1) other revenue; 2) contracts and grants; 3) gifts and investment; and, 4) revenue and sales. The other revenue category summed the revenue from all six alternative revenue source categories. Other revenue did not include general revenue or fees. Table 3 reports the descriptive statistics for the four revenue categories used for correlation analysis.

Table 3
Descriptive Statistics for Department Revenue Mix – Combined Revenue Categories

<table>
<thead>
<tr>
<th>Revenue Category</th>
<th>n</th>
<th>Range in Percentages</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Minimum</td>
<td>Maximum</td>
<td></td>
</tr>
<tr>
<td>Other Revenue*</td>
<td>53</td>
<td>-7</td>
<td>84.84</td>
<td>34.221</td>
</tr>
<tr>
<td>Contracts and Grants</td>
<td>53</td>
<td>-1.77</td>
<td>57.83</td>
<td>20.969</td>
</tr>
<tr>
<td>Gifts and Investment</td>
<td>53</td>
<td>.02</td>
<td>44.95</td>
<td>5.448</td>
</tr>
<tr>
<td>Revenue and Sales</td>
<td>53</td>
<td>0</td>
<td>70.77</td>
<td>7.804</td>
</tr>
</tbody>
</table>

*Sum of revenue percentages for contracts, gifts, grants, investment, revenue, and sales categories
*It is assumed that negative percentages can exist due to the accounting flow of money across multiple fiscal years.

Other revenue averaged 34.22 percent of each academic unit’s total revenue with a standard deviation of 23.086. The largest portion of other revenue came from grants and contracts that had a mean unit revenue percentage of nearly 21 percent and a standard
deviation of almost 19. Mean revenue percentages for revenue and sales and gifts and investment were smaller, reported at 7.8 percent and 5.4 percent respectively. The revenue percentage breakdown was not unexpected given the university’s Carnegie Classification as a “RU/VH: Research University (very high research activity).”

Department revenue mix percentages had a large range, varying from zero (revenue and sales) up to nearly 85 percent (other revenue). Within categories, gifts and investment had the smallest range between .02 and 44.95 percent. The largest range was reported for revenue and sales, varying between zero and 70.77 percent. Reported ranges of this size were not unexpected given the number and many types of different departments at MU.

**Reliability of Organizational Effectiveness Factors**

As described in chapter three, to determine reliability of the organizational effectiveness factors Cronbach’s alpha coefficients were calculated. Although Cameron’s factors have been shown to be internally consistent in prior studies (Cameron, 1986), it was necessary to reassess reliability as survey questions were modified to assess faculty perceptions of organizational effectiveness at the department and school or college level. Cameron’s factors were originally determined by assessing perceptions of organizational effectiveness at the institutional level (Cameron).

For this study, Cronbach’s alpha coefficients were calculated for each of the nine effectiveness factors using SPSS. An alpha score of .70 or higher is generally considered acceptable to confirm the internal consistency of the scale being measured. (Nunnally, 1978). George and Mallery (2003) provide these guidelines for Cronbach’s alpha coefficients, “≥.9 – Excellent, ≥.8 – Good, ≥.7 – Acceptable, ≥.6 – Questionable, ≥.5 –
Poor, and ≤.5 – Unacceptable” (p.231). Table four sets forth the alpha coefficients for this study and identifies how many survey items made up each effectiveness factor.

Table 4
_Cronbach Alpha Coefficient Scores for Organizational Effectiveness Factors_

<table>
<thead>
<tr>
<th>Effectiveness Factor</th>
<th>n</th>
<th>Alpha Coefficient</th>
<th># of Survey Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Educational Satisfaction</td>
<td>145</td>
<td>.829</td>
<td>5</td>
</tr>
<tr>
<td>Student Academic Development</td>
<td>145</td>
<td>.688</td>
<td>5</td>
</tr>
<tr>
<td>Student Career Development</td>
<td>145</td>
<td>.850</td>
<td>6</td>
</tr>
<tr>
<td>Student Personal Development</td>
<td>145</td>
<td>.789</td>
<td>4</td>
</tr>
<tr>
<td>Faculty and Administrator Employment Satisfaction</td>
<td>145</td>
<td>.794</td>
<td>6</td>
</tr>
<tr>
<td>Professional Development and Quality of the Faculty</td>
<td>145</td>
<td>.749</td>
<td>6</td>
</tr>
<tr>
<td>System Openness and Community Interaction</td>
<td>145</td>
<td>.806</td>
<td>5</td>
</tr>
<tr>
<td>Ability to Acquire Resources</td>
<td>145</td>
<td>.784</td>
<td>5</td>
</tr>
<tr>
<td>Organizational Health</td>
<td>145</td>
<td>.944</td>
<td>15</td>
</tr>
</tbody>
</table>

Alpha coefficients for the nine factors ranged from .688 to .944, with eight of the nine factors having coefficients above .7 indicating acceptable reliability as a scale of measurement. The lone exception was the student academic development factor that had an alpha coefficient slightly below that recommended for reliability at .688.

An acceptable practice to improve reliability is to remove items from the measurement scale and recalculate the alpha coefficient. The student academic
development effectiveness factor contained five survey items. Survey item four asked participants to assess the percentage of undergraduates that obtained a graduate/professional degree from their department. Using SPSS, removing this item would have resulted in a new alpha coefficient of .727; representing an increase of .039 in the reliability score. For analysis purposes, given the nearness of the original alpha coefficient value to .7 and the limited value that would have resulted by removing item four from the student academic development factor, it was determined to not remove the survey item from the factor. This determination also left student academic development as an organizational effectiveness factor intact as originally designed by Cameron.

**Correlation Results**

The original research design as noted in chapter three called for the separation of academic units into groups based on similar revenue percentage mixes. However, as seen in appendix H, a histogram plotting academic units by total other revenue percentage revealed no natural breaks in department revenue mixes that would have allowed for the grouping of departments. Due to this result, it was determined to treat revenue mix as a continuous independent variable.

Table five reports Pearson Product Moment coefficient scores for all nine organizational effectiveness factors where the p-value threshold is 0.1 for significance and 0.1>p<.15 for marginal significance.
Table 5  
*Pearson Product Moment Coefficients*

<table>
<thead>
<tr>
<th>Effectiveness Factor</th>
<th>Other Revenue</th>
<th>Contracts and Grants</th>
<th>Gifts and Investment</th>
<th>Revenue and Sales</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Educational Satisfaction</td>
<td>-.123</td>
<td>-.182</td>
<td>.090</td>
<td>-.019</td>
</tr>
<tr>
<td>Student Academic Satisfaction</td>
<td>-.094</td>
<td>-.211**</td>
<td>.143</td>
<td>.032</td>
</tr>
<tr>
<td>Student Career Development</td>
<td>.274*</td>
<td>.186</td>
<td>.178</td>
<td>.091</td>
</tr>
<tr>
<td>Student Personal Development</td>
<td>-.074</td>
<td>-.173</td>
<td>.267*</td>
<td>-.071</td>
</tr>
<tr>
<td>Faculty and Administrator Employment Satisfaction</td>
<td>-.056</td>
<td>-.154</td>
<td>.200**</td>
<td>-.020</td>
</tr>
<tr>
<td>Professional Development and Quality of the Faculty</td>
<td>.115</td>
<td>.109</td>
<td>-.086</td>
<td>.106</td>
</tr>
<tr>
<td>System Openness and Community Interaction</td>
<td>.019</td>
<td>-.105</td>
<td>.118</td>
<td>.098</td>
</tr>
<tr>
<td>Ability to Acquire Resources</td>
<td>-.091</td>
<td>-.170</td>
<td>.214**</td>
<td>-.069</td>
</tr>
<tr>
<td>Organizational Health</td>
<td>-.209**</td>
<td>-.257*</td>
<td>.194</td>
<td>-.137</td>
</tr>
</tbody>
</table>

*Significant at p<0.1  
** Marginal Significance at 0.1>p<.15

As can be seen in table 5 and discussed below, three results were found to be significant. An examination of table five also reveals four instances of correlation that were marginally significant. While marginally significant findings cannot be reported as
statistically significant, as described in chapter five, the desire to report them was based on the potential effect on results of the small sample size. Further, marginally significant results could show the need for possible further inquiry. For this study, I report below findings of significance (p<0.1) and marginal significance (0.1>p≤.15).

**Findings of Significance**

Three findings of significance occurred when the p-value threshold is 0.1. With a p value at .047, there was a positive correlation of .274 between the other revenue category and the student career development effectiveness factor. A positive correlation of .267 (p = .054) was found to exist between gifts and investment and the student personal development effectiveness factor. A negative correlation of -.257 existed between contracts and grants and organizational health where p was .063. Using classifications suggested by Evans (1996), each of the correlations noted above are considered “weak.”

**Findings of Marginal Significance**

In addition, table 5 shows four findings that are considered marginally significant when 0.1>p≤.15. Organizational health was negatively correlated with other revenue (-.209) with a p value of .132. A marginally significant negative correlation also existed between contracts and grants and the student academic development factor (-.211; p = .129). Positive correlations were reported with regard to gifts and investment in relation to the faculty and administrator employment satisfaction and ability to acquire resources effectiveness factors. The Pearson coefficients were .2 (p = .152) and .214 (p = .124), respectively. As with the findings of significance, these correlations are also considered “weak” using Evans’ (1996) suggested classifications.
Other Results

Other than reported above, table 5 reveals that no other organizational effectiveness factors were significantly or marginally significantly correlated with any revenue category. While other revenue, contracts and grants, and gifts and investment had some reportable correlations with certain effectiveness factors (as described above), revenue and sales did not have any correlation with faculty perceptions of organizational effectiveness that approached even marginal significance. For revenue and sales, the lowest $p$ value was .327.

Conclusion

In this chapter, I have set out the descriptive statistics for faculty survey responses and revenue data, reported results for reliability of the nine organizational effectiveness factors as scales of measurement, and correlation results. Descriptive statistics for faculty survey responses revealed that faculty generally perceived their home academic unit to be effective regardless of department revenue mix. Cronbach alpha scores showed that the nine effectiveness factors were internally consistent and reliable. Correlation results reported three findings of significance, but with “weak” correlations. Other revenue with student career development, and gifts and investment with student personal development, were correlated positively. Organizational health was negatively correlated with contracts and grants.

Four findings of marginal significance where $0.1 > p \leq 0.15$ were also reported. Marginally significant positive correlations were found between gifts and investment and the organizational effectiveness factors of faculty and administrator employment satisfaction, and ability to acquire resources. Negative correlations were reported
between contracts and grants and student academic satisfaction, and other revenue with organizational health.
Results Summary and Discussion

As higher education faces changing economic circumstances and the need to generate alternative sources of revenue, it is important to understand the relationship between faculty perceptions of organizational effectiveness and department revenue mix. This study breaks new ground in analyzing higher education organizational effectiveness. Only one previous study (Gigliotti, 1987) examined effectiveness at the departmental level and none used academic unit revenue mix as a variable. With declining state support and an emphasis placed on generating alternative sources of revenue as the backdrop, this study addressed the question: What is the relationship between department revenue mix and department faculty perceptions of organizational effectiveness?

In this chapter, I summarize the findings presented in chapter four and set forth the limitations and assumptions for the study. I discuss the study’s results in relation to previous literature and the theoretical framework, identify some possible implications for practice, and describe potential areas of future research that may be warranted.

Summary of Findings

Cameron’s survey instrument was modified to ask for faculty perceptions of organizational effectiveness at the department and school/college, rather than institutional, level. Cronbach’s alpha coefficients were calculated to determine if the effectiveness factors were internally consistent and reliable as measurement indicators. Eight of the nine factors had Cronbach coefficients above .7 with the lone exception being student academic development at .688. Given how close to .7 this factor scored and the minimal improvement that could be gained by removing a survey item from the
factor, for this study it was determined to leave the factor in tact as originally designed by Cameron.

A review of the descriptive statistics for this study led to an initial conclusion that faculty perceived their academic units to be generally effective across all nine organizational effectiveness factors regardless of revenue mix. On a Likert scale of one to seven, ranging generally from “not effective” to “very effective,” the mean survey responses across the nine factors were above the midpoint and ranged only between 3.925 and 5.165. Standard deviations were similarly in a small range, between .85 and 1.17.

Using SPSS, a correlation analysis was conducted for all nine organizational effectiveness factors as the dependent variables against alternative revenue percentages for four revenue groups that served as the independent variables. The four revenue categories were other revenue (sum of contracts, grants, gifts, investment, revenue, and sales revenue categories); grants and contracts; gifts and investment; and, revenue and sales. Correlation results revealed three findings of significance where the p-value threshold was 0.1. Student career development had a weak positive correlation (r = .274) with other revenue. Student personal development saw a similar weak positive correlation (r = .267) with gifts and investment revenue. A weak negative correlation (r = -.257) existed between contracts and grants and organizational health.

Other correlation results were reported as marginally significant. In chapter four I stated findings where the p-value threshold was 0.15 that may warrant future additional research. The organizational health factor was negatively related to other revenue (r = -.209). I also found a weak negative correlation (r = -.211) between student academic satisfaction and contracts and grants. Gifts and investment had weak positive
correlations with faculty and administrator employment satisfaction (r = .200) and ability to acquire resources (r = .214).

**Limitations and Assumptions**

Several limitations and assumptions for this study are described below.

The survey sample size was limited. Of the 1,301 requests for survey responses, 145 surveys (11.1%) were completed to a sufficient extent that they could be included in the study. The limited sample size may have impacted the study’s findings.

The opinions of faculty member participants were self-reported. This may result in possible bias towards ratings of effective. An attempt was made to limit this bias by making survey responses anonymous and ensuring respondents that the survey was not being used to evaluate administration.

The study assumed that faculty responded to the survey in relation to their own academic department and without knowledge of revenue mix circumstances in other academic departments. The study was further limited because neither discipline nor field of study were considered in relation to faculty perspectives of organizational effectiveness.

The study relied on financial data as reported by MU and coding assumptions were based on short transaction and campus account descriptions. No independent data were collected to verify the accuracy of the revenue descriptions. Reexamining the coded data to confirm the categorization of revenue transactions was an attempt to limit this potential error.

General revenue entries, irrespective of the revenue source, were treated as general revenue for coding purposes.
This study was limited to a single-year timeframe, the 2010-2011 fiscal year for which revenue data were received. Findings may be different if the study were to be conducted at a different time.

Research centers and MU auxiliary operations that generated other revenue were not included if they could not be affiliated with a single academic unit. Most centers and auxiliary operations were connected to multiple academic units.

**Discussion of Results**

In this section, I discuss the study’s primary findings in light of relevant literature and the study’s theoretical framework, open systems theory.

**Findings of Significance**

Student career development had a weak positive correlation with other revenue. This factor sought faculty perceptions related to student career opportunities, motivations, and outcomes. Faculty were asked about the number of career development opportunities available to students, the proportion of undergraduate courses designed to be career oriented, and if career training received in the department was important to job placement. Faculty were asked about how many students entered the labor market in their field of study and obtained their job of first choice. Perceptions were also sought with regard to how many students were attending to fulfill specific career goals as compared to some other motivation (e.g. athletics, social).

The small positive correlation with other revenue indicates a faculty perception that departments with higher alternative revenue sources have an increased ability to provide career development programs and courses, resulting in more effective outcomes for department students. It should be noted that this finding was limited to other revenue
generally, as the remaining three combined revenue categories were not significantly associated with this factor. This perception is not unexpected. MU was experiencing financial cutbacks from the state legislature in 2010-11. It would not be unexpected that “non-academic” initiatives such as career development programs might suffer without other types of revenue to support them.

A similar conclusion is made with regard to the weak positive correlation between gifts and investment and student personal development. This factor focused on the perception of department efforts and student outcomes related to personal growth. Faculty responded to what extent personal development opportunities were an outstanding feature of the department, how important it was to students that personal development opportunities are provided, how many students mature non-academically as a result of their department experience, and to what extent the department emphasized personal development activities outside the classroom.

The positive correlation between gifts and investment and student personal development was not an unexpected finding. Having gift funds available that can be dedicated for student personal development programs and activities could likely lead to increased perceptions of effectiveness. This could be especially true in times of financial difficulties.

In chapter two, I noted that the significant growth in raising private gifts could have potential pitfalls. Resource dependency theory explains that organizations will be controlled by those who have the resources that colleges and universities need to survive (Pfeffer & Salancik, 1978). Administrator inability to have input into how resources are directed may impact how they manage resource decline. This study provided no
evidence that limitations on gift dollar usage was having negative impacts on effectiveness. In addition to this finding related to student personal development, below I note two other effectiveness factors that had marginally significant positive correlations with gift and investment revenue.

However, resource dependency theory may explain some of the study’s findings related to contracts and grants. The Organizational health factor can be interpreted as generally measuring faculty perceptions of department culture and environment. The factor is a part of the morale domain along with student educational satisfaction and faculty and administrator employment satisfaction (Cameron, 1981). The factor’s 15 survey items asked for faculty perceptions related to:

1. the closeness of student/faculty relationships;
2. inter-department collaboration and coordination
3. how rigid and strict the general pattern of supervision and control is;
4. how fairly people are treated and rewarded;
5. whether people are rewarded and recognized for good work from superiors;
6. how much people feel informed and have all information;
7. the degree to which communication is open, authentic, personal and free;
8. the degree the general social environment is supportive and cooperative;
9. how flexible and adaptable administration is;
10. the general level of trust among people in the department;
11. how much friction and conflict there is in the department;
12. how disagreements or conflicts are resolved;
13. whether faculty and administrator talents/expertise are used to maximize fulfillment;
14. the degree to which the department is healthy, runs “smoothly,” and is productive; and,
15. how much long-term planning and goal setting is occurring.

The correlation, albeit weak, between contracts and grants and organizational health may be revealing a circumstance where the general culture of MU departments is being negatively impacted by changing economic circumstances that necessitate the generation of alternative sources of revenue. In the larger context, MU’s experience of
continuously declining state support was a fairly new circumstance (beginning in the early 2000’s). Public higher education’s new revenue mix is forcing changes that may be perceived as detrimental to the department’s objectives and, thus, impacting department culture and interactions adversely.

These significant findings reveal that faculty in departments with higher percentages of certain types of alternative revenue perceive positive impacts on certain aspects of organizational effectiveness, namely student personal and career development. Simultaneously, department culture overall may be being negatively impacted. This circumstance is consistent with Cameron’s (1981) observation that institutions will not be effective in all domains of effectiveness at one time. Organizations can be effective and ineffective on multiple scales simultaneously (Cho, 2007).

**Findings of Marginal Significance**

Findings of marginal significance relating to gifts and investment revenue support the conclusion above that this type of revenue has positive impacts on some aspects of organizational effectiveness. Faculty and administrator employment satisfaction and ability to acquire resources effectiveness may be higher in departments with more gift dollars.

The faculty and administrator employment satisfaction factor sought faculty perceptions with regards to workplace satisfaction and the likelihood of leaving the department. The factor specifically asked how many faculty and administrators would take a similar job at another institution; how many are personally satisfied with their employment; and, how many are satisfied with how things are run in the department. As noted above, the study showed a marginally significant correlation between gift and
investment dollars and faculty and administrator satisfaction. Some donors provide gifts that are used specifically to support faculty efforts (e.g. salary increases; travel funds; research funds; etc.) which could provide one potential explanation for this finding. Increased gifts can give departments added abilities to provide salary and other resources to faculty as well as flexibility in the ability to direct funds towards critical department needs.

A marginally significant positive correlation also existed between gifts and investment revenue and the ability to acquire resources effectiveness factor. This factor asked faculty for their input on questions related to a department’s ability to acquire many different types of resources. Questions included to what extent the department was able to obtain needed financial resources to provide a high quality education; to attract leading people in their fields for faculty positions; and, to attract top high school graduates to the department. The factor survey items also asked whether the department had a “high ability” to obtain resources in order to be effective, and what proportion of top high school students attended in relation to other schools with which the department directly competes.

Gift dollars can give academic units’ additional resources to offer better scholarship packages, more faculty support, and potentially the ability to add components to the educational program that could improve academic quality. With these types of resources, the finding of marginal significance was not unexpected. As discussed above, while resource dependency theory warns of dangers that could occur when colleges and universities are controlled by those with the resources needed for survival (Pfeffer & Salancik, 1978), no evidence surfaced from this study that private gift dollars were
having a negative impact on perceptions of effectiveness. Significant and marginally significant findings related to gifts and investment revenue showed positive correlations with certain effectiveness factors.

There were marginally significant findings that demonstrated possible negative correlations as well. Contracts and grants had a weak negative correlation with student academic satisfaction. Organizational health demonstrated a potential negative correlation with other revenue.

The student academic satisfaction factor focused on questions relating to department academic reputation and activities, and student achievement. For this factor, faculty answered whether the department has a reputation for stimulating an intellectual environment that shows high concern for student academic development; the academic level achieved by last year’s class; the percentage of students who attend professional/graduate school; how many outside academic development activities are offered; and, how many students engage in academic work that is beyond what is specifically assigned. The marginally significant finding suggests that faculty may perceive that an emphasis on generating contracts and grants funding is jeopardizing the academic quality of the educational program.

This finding is consistent with Slaughter and Rhoades’ (1997, 2004) observations on “academic capitalism,” the concept that universities exhibit for-profit behaviors to generate revenue in order to compensate for the reductions in the share of resources allocated from government. One impact of “academic capitalism” is the shifting of faculty efforts away from instruction toward an academic capitalist knowledge/learning regime that is gaining prominence compared to the public good knowledge/learning regime.
regime of previous decades. These changes could be consequential to society in terms of access to higher education, knowledge production in academia, and higher education’s performance of, and balance between, various cultural, economic, educational, political and social functions (Slaughter & Rhoades, 2004). This finding may also be evidence of a more general perception that the department is less able to carry out its academic mission (Ehrenberg, 2006a).

The marginally significant negative relationship between contracts and grants and student academic satisfaction may also reveal some differences in perceptions between faculty and administrators related to grant and contract work. Glenna, Lacy, Welsh, & Biscotti’s (2007) study examined university-industry relationships (UIR) and noted that administrators, on average, felt that there were more advantages versus disadvantages to entering into UIR’s. While Glenna, et al.’s study was not an organizational effectiveness study, its findings compared to this study may reveal a circumstance where administrators should be cognizant of potential academic quality issues.

The marginally significant negative correlation between other revenue and organizational health supports the discussion above related to the significant negative correlation with contracts and grants. MU department culture may be negatively impacted by different financial circumstances that require the generation of alternative sources of revenue. Of specific importance is that other revenue includes the total of all alternative sources of revenue for a department, suggesting the potential that organizational health may be negatively impacted when multiple types of alternative revenue are higher.
Organizational Effectiveness Studies

It was important to study the relationship between effectiveness and department revenue mix in this case because doing so may allow managers to examine revenue strategies in the context of effectiveness to understand what is occurring and use that knowledge to improve effectiveness (Cameron, 1986). Doing so at the department level was especially appropriate given that departments can be the locus of decision-making and adapt to their environment independently while not impacting other parts of the organization (Birnbaum, 1988; Weick, 1976).

Prior studies that examined higher education organizational effectiveness with financial circumstances as a context did so primarily by looking at the impact of declining resources. For example, see Cameron (1986) (seven of the 10 institutions with the highest effectiveness scores also had the highest scores related to financial health); Cameron, Kim, and Whetten (1987) (negative organizational attributes were more likely to appear at institutions during times of resource decline); and, Cameron and Smart (1998) (a decrease in financial resources did not necessarily lower organizational effectiveness; negative – “dirty dozen” – organizational attributes were better predictors of organizational ineffectiveness than financial decline). Previous effectiveness studies were not instructive as they did not specifically examine the impact of revenue mix at the department level.

However, the general findings of other higher education organizational effectiveness studies do assist with interpreting the results of this study. A few studies noted that management implementation strategies, and not resource decline, had more impact on effectiveness. For example, Cameron (1986) found that declining
effectiveness was associated with some degree of resource allocation problems and that strategic management was related to improvement. Cameron and Smart (1998) looked at whether declines in required levels of financial resources were related to deterioration in effectiveness. They found that a decrease in financial resources did not necessarily lower organizational effectiveness. Institutions experiencing resource decline could maintain moderate to high levels of effectiveness if management was proactive and the organization avoided developing negative organizational attributes. Cameron and Tschirart (1992) found that “domain offense” strategies were most effective and that effectiveness could be maintained if responded to appropriately.

MU departments are proactively generating alternative sources of revenue to help offset lost state appropriations. An examination of descriptive statistics led to an initial conclusion that MU faculty generally perceived their academic units to be effective regardless of department revenue mix. Correlation results revealed weak positive and negative correlations between different types of alternative revenue and certain organizational effectiveness factors. However, not to a sufficient extent to alter the conclusion that faculty generally perceived their departments to be effective. This indicates that during the time period administrators were perceived to be maintaining effectiveness despite declining state appropriations consistent with the findings of Cameron (1986), Cameron and Tschirart (1992), Cameron and Smart (1998).

Findings were also consistent with previous studies that discuss organizations being effective and ineffective across multiple domains simultaneously (Cameron, 1981; Cho, 2007). Described in chapter two, Cameron (1981) identified the four domains across which all nine effectiveness factors exist. They are external adaptation, morale,
academic, and extracurricular. In this study, the effectiveness factors for which significant and marginally significant correlations were found existed in all four domains. The morale (faculty and administrator employment satisfaction and organizational health) and academic (student academic development and ability to acquire resources) domains had multiple effectiveness factors for which significant or marginally significant findings were found. In both domains, the factors had both positive and negative correlations consistent with Cameron (1981) and Cho (2007). The morale and academic domains being most prevalent in this study are also noteworthy in light of the observations made above pertaining to possible negative impacts on department culture and academic program quality.

**Open Systems Theory**

Open systems theory (Morgan, 1997; Katz and Kahn, 1978) was the conceptual framework for this study. This approach analyzes organizations by viewing them as living systems that exist within the larger world around them and that depend on the environment for sustenance (Morgan, 1997). The “environment” includes economic conditions impacting the organization (Katz & Kahn, 1978). Birnbaum (1988) asserts that higher education institutions must be responsive to their environments to survive and that responses that institutions implement have profound effects on their governance structures and processes.

Kessel and Mink (1971) were among the first to recognize the application of open system theory to higher education, taking the position that a university is surrounded by an environment (with constraints, such as facilities and resources), to which the institution must adapt and within which it must operate. Thus, a university must make
changes to maintain its equilibrium and survive, so as to carry out its intended purpose. However, higher education has not typically practiced this localized adaption during times of fiscal stress. Units become dysfunctional, tending to entrench and compete rather than collaborate (Birnbaum, 1988; Cameron & Whetten, 1983).

In fiscal year 2011, the timeframe from which revenue data were collected, it appears that MU faculty perceived that the organization was being responsive to its financial environment, and was generally healthy and effective. By proactively seeking alternative revenue sources, MU had initiated actions to correct for deviations and fluctuations caused by lost state resources while generally maintaining effectiveness. MU had thus essentially achieved homeostasis, equifinality and requisite variety (Morgan, 1997). As noted above, descriptive statistics for this study revealed that overall faculty perceptions were that departments were generally effective. Further, findings of significance revealed a positive correlation between other revenue and student career development, as well as between gifts and contracts and student personal development. While a weak negative correlation was found between contracts and grants and organizational health, it is not sufficient to alter the general conclusion that MU was successfully adapting to its new economic circumstances. The marginal findings of significance support this conclusion as well.

**Implications for Practice**

This study, although having limited significant findings, does suggest some implications for practice of which both faculty and administrators should be cognizant. Faculty and administrators should be aware of the negative perceptions of effectiveness that the study revealed and attempt to overcome these perceptions in
initiatives. For example, administration could develop programming that expands and enhances student academic development related to contract and grant based research. Mendoza and Berger (2008) noted that research partnerships could enhance graduate education and the pursuit of science while maintaining academic integrity.

Faculty and administrators should be sensitive to relying too heavily on one form of revenue and be aware that this could impact different aspects of organizational effectiveness.

Organizational health was potentially impacted in a negative way by the increased efforts to secure other revenue, especially research contracts and grants. Administrators should attempt to proactively communicate effectively the benefits of mixed sources of revenue on their departments, while accommodating for the culture that has been created by primary reliance on state appropriations.

**Future Research**

This study provides findings that generate some initial conclusions pertaining to organizational effectiveness that could form the basis for future areas of inquiry.

Conduct a similar study within the same boundaries using more current revenue and faculty perception data. Compare results in a longitudinal way to reveal similar and/or different trends. Two specific questions that could be studied are what impact does a change in a department’s total revenue per FTE or revenue mix over time have on perceptions of effectiveness.

Conduct a study with this study’s data or like data and compare department groups based on academic disciplines (e.g. social sciences, fine and performing arts, business). Alternatively, compare departments based on a revenue index. For example,
compare departments deemed to have diversified revenue with those that have essentially
have a sole source of revenue.

Conduct a similar study at different types of institutions to determine if similar or
different results occur and whether institutional type has an effect. This study took place
at a research intensive, large public university.

Conduct specific studies that examine more closely specific types of alternative
revenue and their impact. For example, a closer look at Table 5 (chapter four) reveals
that both contracts and grants and gifts and investment revenue may be associated with
other effectiveness factors such as student educational satisfaction, student career
development, and organizational health.

Conduct a department-specific, qualitative study, using the findings in this study
as a basis to look more closely at how alternative revenue is impacting organizational
effectiveness and how different groups perceive it. For example, do individuals who
benefit directly from gift dollars have different perceptions compared to those who do
not. Qualitative methodologies would permit researchers to seek out findings that are not
fully explored by quantitative approaches, and would also foster inquiry into the meaning
different parties associate with organizational effectiveness and different revenue
generation behaviors.

Conclusion

Colleges and universities are facing changing times. One of the most turbulent
situations occurring in public higher education is uncertainty in the financial environment
with state support in decline and the need to raise alternative revenues increasing.

This study examined one aspect of this uncertainty, whether there is a correlation between department faculty perceptions of organizational effectiveness and department revenue mix. Using MU as the case for the study, a survey was sent to approximately 1,300 full-time faculty members to measure their perceptions of effectiveness across nine organizational effectiveness factor areas as designed by Cameron (1986). Revenue data from 2010-2011 were examined to determine revenue mix at the department level.

While the small sample size may have limited significant findings, the study does show that faculty generally perceived MU to be effective, regardless of department revenue mix, at the time. Descriptive statistics led to this initial conclusion based on mean faculty perception scores and a small standard deviation range. In addition, significant and marginally significant positive correlations were found between other revenue and student career development, as well as gift and investment revenue with three factors (student personal development, faculty and administrator employment satisfaction, ability to acquire resources). Negative correlations were also revealed in the study, but not to the extent that would justify changes to the overall conclusion about the institutions effectiveness.
References


Appendix A
Survey Instrument – Qualtrics

MU Faculty Perceptions of Organizational Effectiveness - Section I Part A

Consent Form to Participate in a Research Study

Researcher’s Name(s): Tim Hausman (Primary Investigator); Dr. Joe Donaldson (Advisor)
Project Number: 1203375

Project Title: Does it Matter Who Pays? An Analysis of the Relationship between Revenue Mix and Faculty Perceptions of Organizational Effectiveness.

INTRODUCTION

This consent may contain words that you do not understand. Please ask the investigator or the study staff to explain any words or information that you do not clearly understand.

You are being asked to participate in a research study. This research is being conducted to learn whether there is a correlation between faculty perceptions of department and school/college organizational effectiveness, and department revenue mix. Understanding this correlation could help inform administrators and policymakers in their financial resource decisions.

When you are invited to participate in research, you have the right to be informed about the study procedures so that you can decide whether you want to consent to participation. This form may contain words that you do not know. Please ask the researcher to explain any words or information that you do not understand.

You have the right to know what you will be asked to do so that you can decide whether or not to be in the study. Your participation is voluntary. You do not have to be in the study if you do not want to. You may refuse to be in the study and nothing will happen. If you do not want to continue to be in the study, you may stop at any time without penalty or loss of benefits to which you are otherwise entitled.

WHY IS THIS STUDY BEING DONE?

As noted above, the purpose of this research is to learn whether a correlation exists between faculty perceptions of department organizational effectiveness and department revenue mix. Understanding any correlation could help institution policy makers implement financial resources decisions.

HOW MANY PEOPLE WILL BE IN THE STUDY?

Approximately 1,400 MU full-time faculty will be asked to take part in this study.

WHAT AM I BEING ASKED TO DO?

You are being asked to complete an organizational effectiveness survey. The survey is modeled after a higher educational organizational effectiveness survey instrument that has been used in many studies. It has been modified only to reflect faculty perceptions at the department and school/college level.

HOW LONG WILL I BE IN THE STUDY?

It is estimated that the survey will take approximately 10-15 minutes to complete. You can stop participating at any time without penalty.

WHAT ARE THE BENEFITS OF BEING IN THE STUDY?

Your participation could benefit the university by helping to provide information that informs administrators and policy makers as they make and implement future financial resources decisions.

WHAT ARE THE COSTS OF BEING IN THE STUDY?

There is no cost to you.

WHAT OTHER OPTIONS ARE THERE?

You also have the option of not participating in this study, and will not be penalized for your decision.

CONFIDENTIALITY

This survey is being administered using Qualtrics through the MU Qualtrics license. Survey responses are returned electronically and stored on a Qualtrics server. The investigator will access the responses through the investigator’s Qualtrics account that is password protected. Individual faculty member responses are not attributable to the faculty member.

WILL I BE COMPENSATED FOR PARTICIPATING IN THE STUDY?

You will receive no payment for taking part in this study.
WHAT ARE MY RIGHTS AS A PARTICIPANT?

Participation in this study is voluntary. You do not have to participate in this study.

WHOM DO I CALL IF I HAVE QUESTIONS OR PROBLEMS?

If you have any questions regarding your rights as a participant in this research and/or concerns about the study, or if you feel under any pressure to enroll or to continue to participate in this study, you may contact the University of Missouri Campus Institutional Review Board (which is a group of people who review the research studies to protect participants’ rights) at (573) 882-9585 or umcresearch@missouri.edu.

You may ask more questions about the study at any time. For questions about the study, you may contact Tim Hausman (Primary Investigator) at 573-882-2350 or hausmant@missouri.edu; or Dr. Joe Donaldson (Advisor) at 573-884-9330 or donaldsoni@missouri.edu

Please select from the menu below:

The following survey measures MU faculty perceptions of organizational effectiveness. The majority of the questions ask for your answers as they pertain to your academic department. Questions that refer to your school college are referencing the academic unit within which your department resides (e.g., College of Education, College of Engineering).

Your responses will be confidential, attributable to your department (along with responses from other faculty members in your department) by a department code. Departments with similar revenue mixes will be grouped and faculty responses from grouped departments will be combined for analysis purposes.

This is a short survey and should take approximately 10-15 minutes to complete. The survey contains six sections and the vast majority of questions seek responses on a Likert scale. The survey instrument has been used numerous times in other higher education organizational effectiveness studies. It has only been modified to assess effectiveness at the department level.

IF YOU RESIDE IN A DEPARTMENT THAT HAS GRADUATE STUDENTS ONLY, PLEASE RESPOND TO THE QUESTIONS WITH THOSE STUDENTS IN MIND.

Your participation is voluntary and refusal will involve no penalty or loss of benefits. You may choose to not answer all of the questions.

Thank you for your time, support and assistance.

From the menu below, please select your academic home department. If your department does not appear on the list, please select your academic home school or college. The identified units were selected based upon how MU reports revenue data.

Please note that departments/academic units are grouped by the school/college within which they are housed. Selections for Provost, Office of Research, and Extension appear at the end of the menu list.

MU Faculty Perceptions of Organizational Effectiveness - Section I Part A

To what extent are the following characteristics typical of your department? Please mark the appropriate response using the scale immediately below.

<table>
<thead>
<tr>
<th>My department has the reputation of possessing a stimulating intellectual environment with high concern for student academic development.</th>
<th>Very untrue, or highly atypical of this department</th>
<th>Neither typical or atypical</th>
<th>Very true, or highly typical of this department</th>
</tr>
</thead>
<tbody>
<tr>
<td>One of the outstanding features of my department is the opportunity it provides</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
students for personal development in addition to academic development.

My department is highly responsive and adaptive to meeting the changing needs of the external college community or environment.

My department has a very high ability to obtain needed financial resources in order to provide a high quality educational program.

When hiring new faculty members, my department can attract the leading people in the country in their respective fields to take a job here.

My department can attract the leading high school graduates in the country to attend.

MU Faculty Perceptions of Organizational Effectiveness - Section I Part B

MU Faculty Perceptions of Organizational Effectiveness - Section I Part B

To what extent are the following characteristics typical of your department? Please mark the appropriate response using the scale immediately below.

<table>
<thead>
<tr>
<th>Very untrue, or highly atypical of this department</th>
<th>Neither typical nor atypical</th>
<th>Very true, or highly typical of this department</th>
</tr>
</thead>
<tbody>
<tr>
<td>My department has a very high ability to obtain the resources it needs to be effective.</td>
<td>○ ○ ○ ○ ○ ○ ○ ○ ○</td>
<td>○ ○ ○ ○ ○ ○ ○</td>
</tr>
<tr>
<td>In general, after students leave my school/college, they maintain a strong commitment to my department.</td>
<td>○ ○ ○ ○ ○ ○ ○ ○ ○</td>
<td>○ ○ ○ ○ ○ ○ ○</td>
</tr>
<tr>
<td>At activities or events where alumni are invited by my department to participate, a large showing of support generally occurs.</td>
<td>○ ○ ○ ○ ○ ○ ○ ○ ○</td>
<td>○ ○ ○ ○ ○ ○ ○</td>
</tr>
<tr>
<td>There seems to be a feeling that dissatisfaction is high among students in general in my school/college.</td>
<td>○ ○ ○ ○ ○ ○ ○ ○ ○</td>
<td>○ ○ ○ ○ ○ ○ ○</td>
</tr>
<tr>
<td>There have been a relatively large number of students either drop out or not return because of dissatisfaction with their educational experiences here.</td>
<td>○ ○ ○ ○ ○ ○ ○ ○ ○</td>
<td>○ ○ ○ ○ ○ ○ ○</td>
</tr>
<tr>
<td>I am aware of a large number of student complaints regarding their educational experience here as registered in the campus newspaper, meetings with faculty members or administrators, or other public forums.</td>
<td>○ ○ ○ ○ ○ ○ ○ ○ ○</td>
<td>○ ○ ○ ○ ○ ○ ○</td>
</tr>
</tbody>
</table>

MU Faculty Perceptions of Organizational Effectiveness - Section II

Think of last year’s graduating class from your school/college. Please rate the academic attainment or academic level achieved by that class as a whole.

- ○ That class is among the very top college graduating classes in the country.
That class is well above average.
That class is slightly above average.
That class is about average.
That class is slightly below average.
That class is below average.
That class is near the bottom of college graduating classes in the country.

Estimate what percent of the graduates from your school/college go on to obtain degrees in graduate or professional schools.

From 91% to 100% of the students go on to obtain advanced degrees
From 76% to 90% go on
From 61% to 75% go on
From 46% to 60% go on
From 31% to 45% go on
From 16% to 30% go on
From 0% to 15% go on to obtain advanced degrees

How important is it to students here that opportunities for personal and non-academic development (e.g. social, emotional, cultural, etc...) are provided in your school/college?

Personal development activities are very important to students here
They are important
They are somewhat important
They are neither important nor unimportant
They are somewhat unimportant
They are unimportant
They are very unimportant to students here

IU Faculty Perceptions of Organizational Effectiveness - Section III

MU Faculty Perceptions of Organizational Effectiveness - Section III

To what extent does your department emphasize or encourage the following? Please mark the appropriate response using the scale below.

<table>
<thead>
<tr>
<th>Activities outside the classroom designed specifically to enhance students' academic development</th>
<th>No emphasis or encouragement</th>
<th>Moderate degree of emphasis or encouragement</th>
<th>Very high degree of emphasis or encouragement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activities outside the classroom designed specifically to enhance students' personal non-academic development</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The engaging in professional activities outside my department by faculty members and administrators</td>
<td>🌟 🌟 🌟</td>
<td>🌟 🌟 🌟</td>
<td>🌟 🌟 🌟</td>
</tr>
</tbody>
</table>

122
### MU Faculty Perceptions of Organizational Effectiveness - Section IV

#### How many career development opportunities are provided for students in your department?

<table>
<thead>
<tr>
<th>Zero</th>
<th>A moderate number or amount</th>
<th>A very large number or amount</th>
</tr>
</thead>
</table>

#### How much would you say students develop and mature in non-academic areas (e.g., socially, emotionally, culturally, etc.) directly as a result of their experiences in your department?

<table>
<thead>
<tr>
<th>Zero</th>
<th>A moderate number or amount</th>
<th>A very large number or amount</th>
</tr>
</thead>
</table>

#### How many faculty members and administrators in your department would you say serve in the community in government, on boards or committees, as consultants, or in other capacities (combine federal, state and local levels)?

<table>
<thead>
<tr>
<th>Zero</th>
<th>A moderate number or amount</th>
<th>A very large number or amount</th>
</tr>
</thead>
</table>

#### How many community oriented programs, workshops, projects, or activities would you estimate were sponsored by your department last year?

<table>
<thead>
<tr>
<th>Zero</th>
<th>A moderate number or amount</th>
<th>A very large number or amount</th>
</tr>
</thead>
</table>

### MU Faculty Perceptions of Organizational Effectiveness - Section V Part A

#### How many faculty members in your department would you say have national reputations in their respective academic fields?

<table>
<thead>
<tr>
<th>Almost none</th>
<th>A small minority</th>
<th>Less than half</th>
<th>About half</th>
<th>More than half</th>
<th>A large majority</th>
<th>Almost all</th>
</tr>
</thead>
</table>

#### How many students would you say engage in extra academic work (e.g., reading, studying, writing, etc.) over and above what is specifically assigned in the classroom?

<table>
<thead>
<tr>
<th>Almost none</th>
<th>A small minority</th>
<th>Less than half</th>
<th>About half</th>
<th>More than half</th>
<th>A large majority</th>
<th>Almost all</th>
</tr>
</thead>
</table>

#### What proportion of the students who graduated from your department last year and entered the labor market would you estimate obtained employment in their major field of study?

<table>
<thead>
<tr>
<th>Almost none</th>
<th>A small minority</th>
<th>Less than half</th>
<th>About half</th>
<th>More than half</th>
<th>A large majority</th>
<th>Almost all</th>
</tr>
</thead>
</table>

#### How many students would you say attend your department to fulfill definite career or occupational goals as opposed to attending for social, athletic, financial, or other reasons?

<table>
<thead>
<tr>
<th>Almost none</th>
<th>A small minority</th>
<th>Less than half</th>
<th>About half</th>
<th>More than half</th>
<th>A large majority</th>
<th>Almost all</th>
</tr>
</thead>
</table>

#### Approximately what proportion of the undergraduate courses offered in your
Department are designed to be career oriented or occupation related as opposed to liberal education, personal development, etc.?

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Of those students who went on the job market after graduating from your department last year, how many would you say obtained the job of their first choice as opposed to settling for a less than optimal choice?

Think of those students who have obtained employment after graduating from your department, for how many of them was the career training received in your school/college important in helping them obtain their job?

### MU Faculty Perceptions of Organizational Effectiveness - Section V Part B

Please mark the appropriate response using the following scale.

<table>
<thead>
<tr>
<th>If given the chance of taking a similar job at another institution of his/her choice, how many faculty members do you think would opt for leaving your institution rather than staying?</th>
<th>Almost none</th>
<th>A small minority</th>
<th>Less than half</th>
<th>About half</th>
<th>More than half</th>
<th>A large majority</th>
<th>Almost All</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>If given the chance of taking a similar job at another institution of his/her choice, how many administrators do you think would opt for leaving your institution rather than staying?</th>
<th>Almost none</th>
<th>A small minority</th>
<th>Less than half</th>
<th>About half</th>
<th>More than half</th>
<th>A large majority</th>
<th>Almost All</th>
</tr>
</thead>
<tbody>
<tr>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Estimate how many faculty members in your department are personally satisfied with their employment.</th>
<th>Almost none</th>
<th>A small minority</th>
<th>Less than half</th>
<th>About half</th>
<th>More than half</th>
<th>A large majority</th>
<th>Almost All</th>
</tr>
</thead>
<tbody>
<tr>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Estimate how many administrators in your department are personally satisfied with their employment.</th>
<th>Almost none</th>
<th>A small minority</th>
<th>Less than half</th>
<th>About half</th>
<th>More than half</th>
<th>A large majority</th>
<th>Almost All</th>
</tr>
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<tbody>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Estimate how many faculty members are personally satisfied with the way things are done around your department.</th>
<th>Almost none</th>
<th>A small minority</th>
<th>Less than half</th>
<th>About half</th>
<th>More than half</th>
<th>A large majority</th>
<th>Almost All</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Estimate how many administrators are personally satisfied with the way things are done around your department.</th>
<th>Almost none</th>
<th>A small minority</th>
<th>Less than half</th>
<th>About half</th>
<th>More than half</th>
<th>A large majority</th>
<th>Almost All</th>
</tr>
</thead>
<tbody>
<tr>
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</tr>
</tbody>
</table>

### MU Faculty Perceptions of Organizational Effectiveness - Section V Part C

Please mark the appropriate response using the scale below.

<table>
<thead>
<tr>
<th>Approximately what proportion of the faculty members and administrators in your department attended a conference or workshop specifically oriented toward professional and/or personal development last year?</th>
<th>Almost none</th>
<th>A small minority</th>
<th>Less than half</th>
<th>About half</th>
<th>More than half</th>
<th>A large majority</th>
<th>Almost all</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
MU Faculty Perceptions of Organizational Effectiveness - Section VI Part A

This section asks you to rate your perceptions of the general day-to-day functioning of your school/college. Please respond by marking the circle that best represents your perceptions of each item. If you agree strongly with one end of the scale, mark a response closer to that end of the scale. If you feel neutral about the item, mark a response near the middle of the scale.

- Student/faculty relationships are unusually close, there is lots of informal interaction, there is mutual personal concern
- Interdepartmental relations in my school/college have lots of coordination, joint planning, collaboration, no friction
- With regard to supervision and control, there is rigid control, strict supervision, pressure for conformity
- With regard to equity of treatment and rewards, people are treated fairly and rewarded equally
- Recognition is received for good work from superiors, rewarded for success
- There is no closeness, mostly instrumental relations, little informal interaction
- There is no joint activity, conflict exists, there is a lack of coordination and communication
- There is respect for differences, personal freedom, individual autonomy
- Favoritism and inequity are present, unfair treatment exists
- There are no rewards for good work, no one recognizes success

MU Faculty Perceptions of Organizational Effectiveness - Section VI Part B

This section asks you to rate your perceptions of the general day-to-day functioning of your school/college. Please respond by marking the circle that best represents your perceptions of each item. If you agree strongly with one end of the scale, mark a response closer to that end of the scale. If you feel neutral about the item, mark a response near the middle of the scale.

- With regard to the amount of information or feedback you receive, you feel informed, in the know, information is always available
- Feel isolated, out of it, information is never available
<table>
<thead>
<tr>
<th>Communication is typically guarded, screened, cautious, formal</th>
<th>Communication is open, authentic, personal, free</th>
</tr>
</thead>
<tbody>
<tr>
<td>The general social environment is cooperative, supportive, mutual concern for others, humane</td>
<td>Competitive, no support, unsympathetic, &quot;every man for himself&quot;</td>
</tr>
<tr>
<td>Administration is willing to change, adaptable, progressive, flexible</td>
<td>Administration is rigid, unwilling to change, stagnant, unyielding</td>
</tr>
<tr>
<td>With regard to general levels of trust among people, there is high suspicion, fear, distrust, insecurity</td>
<td>There is high trust, security, openness</td>
</tr>
</tbody>
</table>

MU Faculty Perceptions of Organizational Effectiveness - Section VI Part C

This section asks you to rate your perceptions of the general day-to-day functioning of your school/college. Please respond by marking the circle that best represents your perceptions of each item. If you feel neutral about the item, mark a response near the middle of the scale.

<table>
<thead>
<tr>
<th>With regard to conflicts and friction, there is a large amount of conflict, disagreements, anxiety, friction</th>
<th>There is no friction or conflicts, friendly, collaborative</th>
</tr>
</thead>
<tbody>
<tr>
<td>With regard to resolution of disagreements or conflicts, it is marked with imposition, avoidance, dictum, suppression; bad feelings result</td>
<td>Resolution is face-to-face, compromise, democratic; positive feelings result</td>
</tr>
<tr>
<td>With regard to the talents and expertise of faculty members and administrators, competencies and talents are used maximally, chances for fulfillment and development are present</td>
<td>Competencies are not used, no opportunities for growth, talents unused</td>
</tr>
<tr>
<td>With regard to organizational health, my school/college runs smoothly, healthy organization, productive internal functioning</td>
<td>My school/college runs poorly, unhealthy organization, unproductive internal functioning</td>
</tr>
<tr>
<td>With regard to long term planning and goal setting, there is much goal directed activity, long-term planning, continuous goal assessments</td>
<td>There is no goal directed activity, no planning, no goal assessments</td>
</tr>
</tbody>
</table>

Block 11

THANK YOU FOR YOUR PARTICIPATION IN THIS SURVEY OF MU FACULTY PERCEPTIONS OF ORGANIZATIONAL EFFECTIVENESS. YOUR RESPONSES ARE GREATLY APPRECIATED.
## Effectiveness Factor Key

<table>
<thead>
<tr>
<th>Effectiveness Factor</th>
<th>Survey Items Included</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Educational Satisfaction</td>
<td>Sec. 1, Part B, Q2, 3, 4, 5, 6</td>
</tr>
<tr>
<td>Student Academic Development</td>
<td>Sec. 1, Part A, Q1</td>
</tr>
<tr>
<td></td>
<td>Sec. 2, Q1, 2</td>
</tr>
<tr>
<td></td>
<td>Sec. 3, Q1</td>
</tr>
<tr>
<td></td>
<td>Sec. 5, Part A, Q2</td>
</tr>
<tr>
<td>Student Career Development</td>
<td>Sec. 4, Q1</td>
</tr>
<tr>
<td></td>
<td>Sec. 5, Part A, Q3, 4, 5, 6, 7</td>
</tr>
<tr>
<td>Student Personal Development</td>
<td>Sec. 1, Part A, Q2</td>
</tr>
<tr>
<td></td>
<td>Sec. 2, Q3</td>
</tr>
<tr>
<td></td>
<td>Sec. 3, Q2</td>
</tr>
<tr>
<td></td>
<td>Sec. 4, Q2</td>
</tr>
<tr>
<td>Faculty and Administrator Employment Satisfaction</td>
<td>Sec. 5, Part B, Q1, 2, 3, 4, 5, 6</td>
</tr>
<tr>
<td>Professional Development and Quality of the Faculty</td>
<td>Sec. 5, Part A, Q1</td>
</tr>
<tr>
<td></td>
<td>Sec. 5, Part C, Q1, 2, 3, 4, 5</td>
</tr>
<tr>
<td>System Openness and Community Interaction</td>
<td>Sec. 1, Part A, Q3</td>
</tr>
<tr>
<td></td>
<td>Sec. 3, Q3, 4</td>
</tr>
<tr>
<td></td>
<td>Sec. 4, Q3, 4</td>
</tr>
<tr>
<td>Ability to Acquire Resources</td>
<td>Sec. 1, Part A, Q4, 5, 6</td>
</tr>
<tr>
<td></td>
<td>Sec. 1, Part B, Q1</td>
</tr>
<tr>
<td></td>
<td>Sec. 5, Part C, Q6</td>
</tr>
<tr>
<td>Organizational Health</td>
<td>Sec. 6, Part A, Q1, 2, 3, 4, 5</td>
</tr>
<tr>
<td></td>
<td>Sec. 6, Part B, Q1, 2, 3, 4, 5</td>
</tr>
<tr>
<td></td>
<td>Sec. 6, Part C, Q1, 2, 3, 4, 5</td>
</tr>
</tbody>
</table>
Appendix B

First Request to Faculty to Participate in Survey

Dear Professor,

I am writing to ask for your help in understanding faculty perceptions of organizational effectiveness at MU. My research seeks to understand the correlation, if any, between faculty perceptions of organizational effectiveness and department revenue mix. As you are aware, legislative funding support for MU has been in steady decline for several years. At the same time, MU has put more emphasis on alternative funding strategies such as research grants and contracts, technology transfer, and private philanthropy. Understanding this correlation is important as it could help inform administrators and policy makers as they make future funding and revenue strategy decisions.

Please be aware that the survey is not intended to serve as an evaluation of department heads, deans or any other MU administrator. Rather, it is being used to assist in studying these important issues facing higher education using MU as a case.

This is a short survey and should only take approximately 10-15 minutes to complete. The survey instrument has been used numerous times in other higher educational organizational effectiveness studies and you may access it using this link

Survey link: https://missouri.qualtrics.com/SE/?SID=SV_1zzFL4cfCcvoy7kg

Your responses will be confidential and you will only be asked to identify your academic home department. Similarly funded departments will be grouped and faculty responses from grouped departments will be combined for analysis purposes.

Your participation in this survey is voluntary and there are no reasonably foreseeable risks that would result from your participation. Refusal to participate will involve no penalty or loss of benefits to which you are otherwise entitled and you may discontinue participation at any time without penalty or loss of benefits.

You may choose to not answer all of the survey questions, however we hope you will complete the entire survey to strengthen the research findings. If you have any questions regarding your rights involving participation you may contact:

• MU Campus Institutional Review Board office at 573-882-9585
• Tim Hausman (Primary Investigator) at 573-882-2350 or hausmant@missouri.edu
• Dr. Joe Donaldson (Advisor) at donaldsonj@missouri.edu

Thank you for your time, support and assistance in studying these important higher education issues. Please feel free to contact me with any questions regarding the research project.

Sincerely,

Tim Hausman
PhD Candidate
MU College of Education
Department of Educational Leadership and Policy Analysis

Dr. Joe Donaldson
Professor of Education
MU College of Education
Department of Educational Leadership and Policy Analysis
Appendix C

Second Request to Faculty to Participate in Survey

Dear Professor,

I am writing to follow up regarding the MU Organizational Effectiveness survey we sent out on November 21st. If you have had the opportunity to complete the survey, thank you for your input and feedback. Your responses will go a long way in helping us understand how faculty perceptions of organizational effectiveness are associated with department revenue mix. This understanding of faculty perceptions is essential in this time of declining state support.

If you have not been able to complete the survey to this point, we hope you will consider assisting us by following this survey link: https://missouri.qualtrics.com/SE/?SID=SV_1zzFL4cfCcoy7kg

This is a short survey and should take approximately 10-15 minutes to complete. The survey instrument has been used numerous times in other higher education organizational effectiveness studies. If you have any questions regarding your rights involving participation you may contact:

· MU Campus Institutional Review Board office at 573-882-9585
· Tim Hausman (Primary Investigator) at 573-882-2350 or hausmant@missouri.edu
· Dr. Joe Donaldson (Advisor) at donaldsonj@missouri.edu

Thank you for your assistance.

Tim Hausman
PhD Candidate
MU College of Education
Department of Educational Leadership and Policy Analysis

Dr. Joe Donaldson
Professor of Education
MU College of Education
Department of Educational Leadership and Policy Analysis
Appendix D

Third Request to Faculty to Participate in Survey

Dear Professor,

As we begin the new semester, I wanted to write one final time to follow up regarding our MU Organizational Effectiveness survey and seek your assistance. If you have had the opportunity already to complete the survey, thank you for your input and feedback. As we expressed previously, in these times of declining state support it is important to understand how faculty perceptions of organizational effectiveness are associated with department revenue mix. This understanding can play an important role in the making and implementation of future higher education financial decisions.

If you have not been able to complete the survey to this point, we hope you will consider assisting us by following this survey link: https://missouri.qualtrics.com/SE/?SID=SV_1zzFL4cfCcoy7kg This is a short survey and should take approximately 10-15 minutes to complete. The survey instrument has been used numerous times in other higher education organizational effectiveness studies.

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· Tim Hausman (Primary Investigator) at 573-882-2350 or hausmant@missouri.edu
· Dr. Joe Donaldson (Advisor) at donaldsonj@missouri.edu

Thank you for your assistance.

Tim Hausman
PhD Candidate
MU College of Education
Department of Educational Leadership and Policy Analysis

Dr. Joe Donaldson
Professor of Education
MU College of Education
Department of Educational Leadership and Policy Analysis
Appendix E

Survey Items, Rescaled for Analysis

Section I, Part B – Questions 4, 5, and 6
Section II – All Questions
Section V, Part B – Questions 1 and 2
Section VI, Part A – Questions 1, 2, 4, and 5
Section VI, Part B – Questions 1, 3, and 4
Section VI, Part C – Questions 3, 4, and 5
## Appendix F
### Recategorization of Revenue

<table>
<thead>
<tr>
<th>Activity</th>
<th>New Revenue Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research Board</td>
<td>Grants</td>
</tr>
<tr>
<td>University Research Council</td>
<td></td>
</tr>
<tr>
<td>Prime Match Funds</td>
<td></td>
</tr>
<tr>
<td>NSF Grant Match</td>
<td></td>
</tr>
<tr>
<td>Arts and Science Grants Center (Biology)</td>
<td></td>
</tr>
<tr>
<td>Grants and Contracts Incentive</td>
<td></td>
</tr>
<tr>
<td>MU Direct</td>
<td>Revenue</td>
</tr>
<tr>
<td>Lab Services (Animal Science)</td>
<td></td>
</tr>
<tr>
<td>Study Abroad Fees</td>
<td></td>
</tr>
<tr>
<td>Personal Financial Planning Distance Education</td>
<td></td>
</tr>
<tr>
<td>Center for eResearch (English)</td>
<td></td>
</tr>
<tr>
<td>Psychology Trust (Health Psychology)</td>
<td></td>
</tr>
<tr>
<td>Instructional Revenue Share</td>
<td></td>
</tr>
<tr>
<td>Industrial Gift (Food Science)</td>
<td>Gift</td>
</tr>
<tr>
<td>Endowments</td>
<td></td>
</tr>
<tr>
<td>Tech Services (Computer Science)</td>
<td>Sales</td>
</tr>
</tbody>
</table>
### Appendix G

#### Academic Unit Revenue Percentages

<table>
<thead>
<tr>
<th>Department Unit</th>
<th>General Revenue</th>
<th>Fees</th>
<th>Contract</th>
<th>Gifts</th>
<th>Grants</th>
<th>Investment</th>
<th>Revenue</th>
<th>Sales</th>
</tr>
</thead>
<tbody>
<tr>
<td>Women's &amp; Gender Studies</td>
<td>100.7</td>
<td>0.87</td>
<td>-1.77</td>
<td>0.01</td>
<td>0.19</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teacher Development</td>
<td>40.6</td>
<td>59.26</td>
<td>0.14</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Management</td>
<td>99.3</td>
<td>0.68</td>
<td>0.02</td>
<td></td>
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<td></td>
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<tr>
<td>Sociology</td>
<td>99.07</td>
<td>0.11</td>
<td>0.79</td>
<td>0.03</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Romance Languages &amp; Literature</td>
<td>99.05</td>
<td>0.39</td>
<td>0.54</td>
<td>0.01</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SHP - Occupational Therapy</td>
<td>98.49</td>
<td>0.19</td>
<td>0.99</td>
<td>0</td>
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Note: Empty cells indicate that no revenue was reported for that department.
Appendix H

Histogram of Total Other Revenue
Vita

Tim Hausman is currently the Executive Director for Advancement in the College of Arts and Sciences at MU. In this role, Hausman is responsible for overseeing the college’s fundraising operations. Hausman has worked in various fundraising roles at MU since 2001 in the School of Medicine, School of Health Professions, College of Engineering and College of Business. Hausman also served as Assistant Campaign Director in University Advancement before taking his current position. During this time, Hausman also spent one year at the University of Texas at Dallas as Director of Corporate Relations.

Prior to joining MU in 2001, Hausman enjoyed a career in the legal field. Hausman served as a judicial clerk for Justice Ann K. Covington at the Missouri Supreme Court. At the conclusion of his clerkship, Hausman went on to the Missouri Attorney General’s office where he spent eight years as an Assistant Attorney General.

Hausman grew up in Plano, Texas. He earned a B.S. in Business Administration from the Naveen Jindal School of Management at the University of Texas at Dallas in 1988. Hausman completed his juris doctorate degree in 1992 at the University of Missouri – Columbia.