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STATE POLITICAL CULTURE AND THE AFFORDABILITY OF HIGHER
EDUCATION: A MULTIVARIATE ANALYSIS OF THE IMPACT OF STATE
HIGHER EDUCATION SYSTEMS ON THE COST OF ATTENDING COLLEGE

By

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B.M.E, The University of Louisville, 1986
M.Div., The Southern Baptist Theological Seminary, 1989
M.A., The University of Louisville, 2002

A Dissertation
Submitted to the Faculty of the
Graduate School of the University of Louisville
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for the Degree of

Doctor of Philosophy

College of Education and Human Development
University of Louisville
Louisville, Kentucky

December 2003

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A Dissertation Approved on

November 20, 2003

by the following Dissertation Committee:

Dr. John F. Welsh, Dissertation Director

Dr. Jeff Guan

Dr. John Keedy

Dr. Joseph Petrosko

Dr. Paul Winter

DEDICATION

To my father, James F. Perkins (1939-2003), who patiently tutored me from first grade arithmetic to graduate legal studies. He will not see my diploma, but he knew I would receive it.

and

"...to him who is able to do immeasurably more than all we ask or imagine, according to his power that is at work within us, to him be glory in the church and in Christ Jesus throughout all generations, for ever and ever! Amen."
Ephesians 3:20-21 (NIV).

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ABSTRACT

STATE POLITICAL STRUCTURE AND THE AFFORDABILITY OF HIGHER EDUCATION: A MULTIVARIATE ANALYSIS OF THE IMPACT OF STATE HIGHER EDUCATION SYSTEMS ON THE COST OF ATTENDING COLLEGE

Angela Perkins Girdley

November 20, 2003

The purpose of this study was to understand variance in state system performance in affordability using variables describing the state political environment and the higher education governance structure. Understanding how the political culture of states affects higher education illuminates agendas, priorities, and motivations of key decision-makers in higher education.

The dependent variable was affordability of higher education measured by the National Council on Public Policy in Higher Education *Measuring Up* (2000) grade. Independent variables were the impact of special interest groups, the state higher education governance structure, legislative professionalization, and the institutional strength of the governor. Pearson product-moment correlations and multiple regression analysis provided the data analysis.

The results of this study indicated that the combination of political culture and governance structure variables contributed 19% to the variance in affordability grades. Each independent variable contributed some unique variance to the prediction of affordability.

The conclusion of this research elucidated the need for state and campus officials to collaborate on issues of affordability and higher education performance. The study echoed calls by numerous researchers and analysts to work together in establishing comprehensive policies that bridge state appropriations, local tuition prices, and financial aid.

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CHAPTER I

INTRODUCTION

The ivied walls that used to shelter American higher education from external expectations of performance are eroding under the weight of scrutiny from multiple constituencies. Business leaders, policymakers, and the public-at-large were once content with sending their 18-year-olds away for four years of distant scholarly pursuit. Now, the public market is demanding more from higher education. A diverse student body, a technological workplace, and a culture of accountability have forced colleges and institutions to become more accountable and responsive to societal needs (Tierney, 1998; Alexander, 2002).

The rising price of college attendance has been a particular concern of the American public. A recent national survey revealed that people were as worried about the affordability of higher education as they were about issues like child safety and health care (American Council on Education, 1998).

These public concerns are grounded in documented observations about the performance of colleges and universities. Studies (National Commission on the Cost of Higher Education, 1998; National Center for Public Policy and Higher Education, 2001) indicate that in our society where career success increasingly requires higher education, the opportunity of affordable education is diminishing. Over the past two decades, the average college tuition has increased by 110%, while median family income has increased only 27%, and governmental financial aid has increased only 36%. The result of these figures is a 95% increase in net price (total price minus financial aid) at four-year institutions, a 64% increase in net price at private institutions, and a 169% increase at public two-year schools (College Board, 2001).

The changing context of higher education and the rising cost of attending college have captured the attention of state policymakers. States have taken new roles in their relationship with colleges and universities in an effort to promote efficiency and responsiveness to public demands for affordability. Structural reorganization, increased regulation, assessment, and expectations of economic return now accompany the taxpayer resources channeled by the state to higher education

institutions (Sabloff, 1997; Alexander, 2000). In addition, states are initiating creative financial strategies to combat diminishing affordability (Bell & Michelau, 2001; State Higher Education Executive Officers, 2003).

State Role and Influence on Affordability

Three important stakeholders—the state, the market, and individual institutions of higher education—continuously discuss among themselves the idea of quality higher education and the understanding of how to meet new expectations (Berdahl, Altbach, & Gumpert, 1999; Richardson, Bracco, Callan, & Finney, 1999). Tension continues to mount among higher education stakeholders as each tries to determine its legitimate role in defining American higher education priorities and in evaluating appropriate policies to reflect quality, affordability and access.

Policy papers, discussed fully in Chapter II, highlight state higher education financial strategies and their effect on tuition. Analysts point out that states cut higher education budgets in poor economic times. Institutions raise tuition rates to make up for budget shortfalls. The bad economy, higher tuition, and less

available financial aid exacerbate the diminishing affordability for families.

Policymakers in many states have created merit-based scholarship programs, tax incentives, and college savings plans to enhance affordability. Critics claim that these incentives, while politically popular, target middle-class families and decrease higher education access by widening the enrollment gap between middle-income and low-income students (Bell & Michelau, 2001; Longanecker, 2002; National Center for Public Policy and Higher Education, 2002). Analysts insist that state long-term strategy to integrate appropriations, financial aid, and tuition policy is necessary to maintain affordability for families of all income levels (Heller, 2001; Longanecker, 2002; Callan, 2003).

Another current debate between state policymakers and leaders of universities encircles the proper role of each in affecting quality, efficiency, and productivity. Some theorists insisted that positive higher education performance was contingent upon the autonomy of the institution (Berdahl, 1971; Millet, 1984; Newman, 1987). Other researchers demonstrated increased performance, at best, or no correlation, at least, in more centralized

relationships (Volkwein, 1986, 1989; Volkwein & Malik, 1997).

In recent years, states have used reorganization of higher education governance as a strategy to promote better performance. McGuinness (2002) warned that change in structure is often not effective, because states fail to evaluate the long-term goals and consequences of restructuring of higher education.

State System Performance

Many entities have assessed individual colleges and institutions for aspects of quality over the years. States, until recently, have not been subject to the same level of comparative analysis (Callan, 2000). Martinez (2002) explained that most state system evaluation related to legislative action or state funding, but "there has been no external evaluation of state higher education performance that is driven by a national interest free from individual state nuances or institutional concerns" (p. 2).

In 2000, The National Center for Public Policy and Higher Education (NCPPE) conducted the first statewide comparison of higher education in five areas of performance. The NCPPE evaluation, called the *National Report Card on Higher Education* (2000), gave insight into state system performance beyond the quality of individual

colleges and universities. One of the grades provided by the National Report Card was for state system affordability. The comparative assessment reflected family ability to pay for higher education in their state.

The state-level analysis of this study was important, because states have assumed more leadership and control for their state system performance. As students and institutions respond to higher accountability standards, so must the state at the system level. State policy leaders, legislators, and state education personnel benefit from understanding factors influential to state system performance and affordability of higher education; but, very little research exists to understand the variance in NCPPHE report card grades.

Martinez (2002) published the first research attempting to understand the variance in state grades. His predictor variables included socioeconomic, ethnic, and other state contextual variables. The ratio of higher education appropriations to tax revenues per capita was a positive predictor of affordability; and the ratio of total population to higher education enrollment was a negative significant predictor of affordability.

Martinez (2002) encouraged researchers to investigate further state characteristics associated with scores. He

emphasized that his predictor variables for affordability explained only about 54% of variance among states.

Influence of Political Culture on System Performance

The primary vehicle of states in coordinating state systems is policy that creates incentives and disincentives for institutions to address state priorities (Richardson, 1999). Besides socioeconomic factors, as studied by Martinez (2002), political scientists study political factors to help understand the differences among state policies (Gray, 1999). Higher education analysts cited the impact of the state political culture on higher education policy (Newman, 1987; Richardson, 1999). McGuinness (1999) explained that higher education policy has subtle, yet unique differences among states due in part to political culture and locus of political power.

Empirical research, discussed fully in Chapter II, showed interesting and significant effects for political factors on higher education policy. Studies demonstrated significant effects for political variables on various higher education policies and policy processes (Gittell & Kleiman, 2000; Blackwell & Cistone, 1999; Frost, Hearn, & Marine, 1997). In discussion of state affordability strategies, Bell and Michelau (2001) quoted several

legislators who commented that their policies were "good politics."

Gray (1999) listed the following specific political culture variables as important in understanding differences in state policy: (a) the strength of interest groups, (b) the institutional power of the governor, and (c) the professionalization of the legislature. According to Gray, these state characteristics have been important in explaining policy patterns.

Interest Group Strength

An interest group is "an association of individuals or organizations, usually formally organized, that attempts to influence public policy (Thomas & Hrebenar, 1999).

Lobbyists from special interest groups (SIGs) work hard to influence politicians toward their perspective on an issue.

Thomas and Hrebenar (1999) contend that increased numbers, greater variety, and intensified lobbying of SIG's effectively increased the role of state government since the 1970's. States vary in the amount of power or influence they allow SIG's to have in policy-making.

In higher education, Benjamin and Carroll (1998) asserted that the current system of higher education governance is dysfunctional, lacking clear priorities, and open for undue pressure from SIGs. Pusser (2001) presented

an example of interest-group influence in California's access and diversity policy. The University of California Board of Regents, through Proposition 209, eliminated affirmative action in spite of protests from multiple campus-level constituencies. According to Pusser, the policy process demonstrated a shift in ideology from campus decision-makers to political decision-makers driven by special interests.

Gubernatorial Powers

The governor stands at the top of the state bureaucratic hierarchy. Gilley (1997) explained that governors enjoyed increased authority and enthusiasm after the Reagan era shifted power from the federal government to the states.

The governor's support and agenda often determine the success of higher education reform. A study by Peterson (1976) demonstrated that gubernatorial power was a significant predictor of state appropriations to higher education. More recently, the governor of Kentucky, elected in 1995, made higher education reform a top agenda priority for his administration. Several financial incentives and state system changes ensued. Major changes also happened in Georgia and North Carolina with strong support from their governors (Trombley, 2000).

Gilley (1997) reported the results of a 1986 survey of governors that indicated a majority of governors rarely received policy direction from higher education leaders. Instead, they relied on cabinet officers, special assistants, and other governors. Gilley summarized that governors perceived unresponsiveness from campus leaders and preferred to keep distance between themselves and campus officials.

The state constitution, statutes, and voter referenda determine the amount of power a governor possesses. Beyle (1999) listed six areas that affect gubernatorial power: (a) election of separate state-level officials; (b) tenure potential; (c) appointment privilege; (d) budgetary control; (e) veto power; and (f) political party control.

Professionalization of the Legislature

A significant evolution in state government has been the professionalization of legislators. Hamm and Moncrief (1999) explained that variety among states is extremely evident in state legislatures; but all legislatures are more professional than they were a generation ago. They defined degrees of professionalization based on salary, staff, and session length.

At least two studies of higher education policy demonstrated significant effects for more professionalized

legislatures. The 1976 Peterson study found legislative professionalism to be another significant predictor of state appropriations. Sabloff (1997) found a positive correlation between the length of legislative sessions and the number of regulatory higher education laws passed. In follow up interviews, she determined that professionalized legislators were more loyal toward voters and financiers than they were toward higher education clients who only provided information and policy support.

The review of literature illuminated that higher education is highly subject to the political culture within a state. What is not clear yet is the degree that political variables influence statewide affordability in higher education.

Research Problem

The American society is increasingly viewing higher education as important to success (Callan, 1999; *Losing Ground*, 2002). As a result, business leaders, parents, students, and other members of the public are demanding more from higher education. They have been particularly critical toward the increasing costs of attending colleges and universities.

The economy has been sluggish, state appropriations to higher education are down, tuition is up, family income has

decreased, and financial aid has not kept pace with tuition. Citizens are concerned that their ability to pay for college has diminished when the importance of an education is greater than ever before. Moreover, the enrollment gap between middle and lower-income students continues to widen. The perennial American value of affordable public higher education for the masses is in jeopardy.

Elected officials have attempted to respond to these public concerns through increased scrutiny of higher education, restructured governance, performance incentive funding, and other channels of greater accountability. Policymakers have also taken initiatives to address affordability through strategies that specifically help middle-class families.

The problem of this study is that state leaders cannot create effective policy to improve affordability without understanding factors that affect public university performance. Policy and research literature shows a relationship between political culture and higher education policy; but, very little empirical state-level comparative research exists about the relationship among state political environment variables, state higher education

governance structure, and affordability in higher education.

Purpose

The purpose of this study is to understand variance in state system performance in affordability using variables describing the state political environment and the higher education governance structure. Understanding how the political culture of states affects higher education illuminates agendas, priorities, and motivations of key decision-makers in higher education.

With a better understanding of the drivers of affordability, governors, legislators, campus leaders, and state officials can make decisions and implement appropriate policy to encourage and support statewide higher education improvement. Higher education leaders then can understand differences in policy among states; the public can be better informed about responsiveness to their needs and desires; and all stakeholders can have tools to help them construct the most effective educational relationships possible among all parties.

The independent variables are professionalization of the legislature, strength of the governor, political impact of special interest groups, and state higher education

governance structure. The dependent variable is state higher education affordability.

Research Questions

The review of the literature regarding statewide coordination of higher education provided the foundation for five research questions:

1. To what degree do combined political culture and governance structure characteristics explain differences in higher education affordability among states?
2. To what degree does the impact of special interest groups uniquely explain differences in higher education affordability among states?
3. To what degree does the professionalization of the state legislature uniquely explain differences in higher education affordability among states?
4. To what degree does the institutional strength of the governor uniquely explain differences in higher education affordability among states?
5. To what degree does the state higher education governance structure uniquely explain differences in higher education affordability among states?

Null Hypotheses

Testing the null hypotheses in inferential statistics is a method to determine whether significance in variability is due to sampling errors or actual effect. This study is a population study, so the testing of null hypotheses is not to indicate the generalizability of a sample to the population. The null hypotheses are used here as an indication of the magnitude of the relationship of the independent variables to the dependent variable. In this population study, the emphasis is on proportion of effect not inferential statistical significance of sample statistics to population parameters.

Null hypothesis 1 (H1): Political culture and governance structure characteristics do not explain any amount of shared variance in state performance in higher education affordability.

Null hypothesis 2 (H2): The level of special interest group impact in a state explains no unique variance in state performance in affordability.

Null hypothesis 3 (H3): The professionalization of the state legislature explains no unique variance in state performance in affordability.

Null hypothesis 4 (H4): Gubernatorial strength explains no unique variance in state performance in affordability.

Null hypothesis 5 (H5): State higher education governance structure explains no unique variance in state performance in higher education affordability.

Definition of Terms

The following definitions of terms apply to this study:

1. State political culture-aspects of the state policy environment determined by the balance of power and influence of the governor, legislators, political parties, lobbyists, and other key policymakers.
2. Affordability-the ability of a state to maximize tuition and fees against available financial aid to enable all qualified citizens, in relation to their family income, to financially access higher education in their state.

3. Special interest group-a group of individuals or organizations formed to intentionally influence public policy at the state level.

4. Professionalization of state legislature-the degree of commitment required for the members of a state legislative body with regard to the length of legislative sessions, the scope of legislative responsibility, and salary.

5. Strength of the governor-the amount of institutional power assigned to the state executive through the state constitution, state statutes, and voter referenda.

6. Higher education governance structure-the formal framework used by the state for interaction among local institutions of higher education and state government entities and the system that coordinates the work processes of state higher education.

Significance of the Study

The NCPPHE National Report Card has become a focal point for state higher education leaders in comparing their system performance with other states ("Student Aid News,"

2002; Stambaugh, 2002; "Project to Improve," 2003). As an evaluation and policy tool, the report card is only valuable if higher education leaders understand drivers of the performance grades.

The grade for affordability indicated how financially accessible schools within a state were to its citizens. Heller (2001) listed affordability as one of three key issues currently facing public higher education, because the ability to pay for college is key to the opportunity of access to education.

The primary role of the state in higher education is to balance the needs of the institutions with the needs of the citizens (Richardson et al, 1999). The ultimate accountability of a state to its citizens requires states to understand the policy environments, structures and contextual factors that affect system performance.

Little previous research exists to demonstrate or explain key state characteristics that determine state level performance in higher education affordability. The National Report Card initiated a state level analysis of higher education performance. The new task is to understand the differences in grades. Martinez (2002) demonstrated economic and ethnic state characteristics that

accounted for some variance in the grades. Much of the variance was unexplained.

A review of higher education literature suggested that the political environment was an important consideration in state higher education performance. This present study seeks to understand political and policy structural variables that have an effect on state affordability performance.

Information from this study will help inform states about their environments and frameworks for state coordination. When states have the necessary tools, they can construct systems that effectively open doors of opportunity for all state citizens.

Limitations

Three primary limitations exist for this study. First, in any study on performance or quality, chosen indicators unmask particular values and priorities of the personnel choosing the indicators. The indicator of statewide affordability performance in this study, selected from the *National Report Card* (2001), reflects priorities the NCCPHE considered of public concern. Other researchers could debate the legitimacy of these indicators, the absence of some measurements, and the definition of specific categories.

Second, no state exactly replicates another state. Martinez (2002) admonished in his study, "the complex mixture of variables that influence any given state's performance will be different, thus making it difficult to establish a perfect macro model" (p. 14). His advisement pertains to this research, as well. The relationship among myriad state characteristics presents a challenge in finding single predictors of variability.

Third, this study uses secondary data, information not gathered specifically for the research question at hand (Stewart, 1984). Stewart admonished that there are several limitations to secondary data: (a) Unintentional bias may result from data gathered for a purpose other than that intended for the study; (b) Intentional bias occurs when researchers purposely alter data sets to achieve a desired objective; (c) Information often becomes lost with combined or summarized data; and (d) Original categories and levels of measurement may not be appropriate for the new investigation. Further, by definition, researchers do not collect secondary data specifically for the study at hand, so the data may not represent the most current conditions or measurements.

CHAPTER II

LITERATURE REVIEW

This dissertation researches the state political climate as it relates to statewide performance in higher education affordability. To provide a sufficient background for the study, readers need a broader understanding of the state role in higher education. This literature review traces research about the roles state governments play in coordinating, regulating, and funding higher education.

The relationship between state government and institutions of higher education is dynamic, often changing due to political, economic, and environmental factors. States, entrusted with the protection of the public interest, insist on accountability and efficiency in higher education. Higher education institutions, valuing autonomy and academic freedom, defend themselves from unwarranted or superfluous regulation. The ideological pendulum swings between those values of public accountability and professional flexibility. Understanding this precarious

state-institution relationship and the factors influencing it is a significant pursuit for higher education.

Studying the state role of higher education is important, because higher education has become more complex with potentially competing missions and constituencies.

"How to shape the structures and policies for a constructive relationship between the state and higher education will be one of the most important challenges of the next decade" (McGuinness, 1995).

Because more programs are competing for precious state resources, coordination and accountability from a centralized source can influence good stewardship. Professional academicians possess skills and knowledge necessary for quality educational inputs, throughputs and outcomes, but sometimes lack the statewide perspective a state agency can provide.

The organization of this literature review includes the following sections: (a) The relationship between the state and the campus, (b) governance structures and influences, and (c) the role of the state. Each of these sections helps provide perspective on state coordination of higher education.

The section on the relationship between the state and the campus explores issues of autonomy and accountability.

The amount of centralization or decentralization within a state system determines the flexibility local institutions have to create their own agenda. Highly centralized states maintain more power over statewide coordination.

The section on governance structures and influences includes subsections for (a) structures and (b) political influences. Governance structures are the frameworks states use for organization, coordination, and regulation of higher education. Research about structure provides information on decision-making hierarchy within a state. Political influences explain entities that shape state higher education decision-making.

The final section on state roles covers an array of issues associated with state policy and function, including subsections for (a) tuition and appropriations, (b) direct student aid, (c) funding and access, (d) performance funding, (e) performance, (f) private institutions, and (g) policy. These topics help undergird the myriad avenues states use to coordinate and regulate higher education.

Relationship Between State and Campus

The relationship between state and campus encompasses many factors: (a) the way policies are introduced, passed, and implemented; (b) how much flexibility the state gives to local campuses; and (c) how much regulation or

centralization the state keeps. Each of these issues varies from state-to-state and across time. The literature reviewed in this section provides information about the evolution of state involvement, issues surrounding autonomy, and empirical research of variables involved in the relationship between state and campus.

In 1959, Moos and Rourke had already characterized the relationship between state government and institutions of higher education as tense. They maintained that anxiety between the state and campus had been growing since 1917.

They described the early control increases by state governments as primarily administrative rather than legislative. The development of executive budgets, state centralized controllers, purchasers, and personnel offices initiated regulation in many parts of state government, including higher education. As state government embraced the mantra of efficiency and economy, higher education institutions felt the scrutiny of fiscal guardians. Moreover, growing appropriations from state budgets provided justification for the control.

Moos and Rourke (1959) expressed the difficulties in providing quantitative accountability of efficiency in the intricate world of higher education. Yet, they also touted the unreasonableness of expecting complete autonomy and the

seemingly similar motivations between state leaders and campus leaders for quality higher education. They also admonished campus leaders to assume the language of state budget personnel to effectively communicate in the new world of coordination.

Moos and Rourke (1959) described that the early influences of state government into the decisions of individual campuses were in these areas: (a) physical plant and building plans; (b) personnel and hiring restrictions; (c) curriculum; and (d) research agenda. Initial influences were managed through budgetary restrictions or earmarking of certain funds for state priorities.

Moos and Rourke (1959) listed three forms of early coordination: (a) a central governing board with direct control over each state university or college; (b) a voluntary coordinated agreement among institutions with separate boards of trustees; and (c) a master board overseeing all the boards of trustees in a state. They summarized,

At its best, an effective system of coordination can do much to relieve pressure for greater state control over higher education. For there can be little doubt that much of this pressure comes from the

particularism and intensive competition that have long plagued higher education in some areas. But at its worst a tightly coordinated system of higher education can leach quality and originality out of state colleges and universities. (p. 226)

Berdahl (1971) admonished the need to recognize a difference between classic academic freedom and administrative autonomy. He explained that academic freedom encompassed academe's privilege to discuss controversial subjects without censorship. Autonomy was a management issue of locus of governance.

He also explicated two branches of autonomy: (a) substantive autonomy of making policies, goals, and programming and (b) procedural autonomy of methods to achieve specified policies, goals, and programming. Berdahl (1971) insisted that any discussion of state involvement should differentiate between necessary and marginal impositions into either of the two kinds of autonomy.

Berdahl (1971) saw futility in attempts to excise all state control, expressing the expediency of partnership between the state and campuses. He advised officials at all levels to communicate and set goals that do not substitute utility for excellence. "Surely, then, it is

time for administrators, trustees, faculty, students, and alumni to acknowledge that the state has a legitimate role to play in helping to determine policies in higher education; and, accordingly, to cooperate in establishing a system that will protect the public interest and at the same time preserve the essential ingredients of autonomy" (Berdahl, p. 253).

The evolution of coordination was evident in Berdahl's 1971 taxonomy of state governance. The basic framework echoed the Moos and Rourke (1959) description; however, Berdahl included three versions of the coordinating board: (a) a board with institutional representatives and advisory capacity; (b) a board with lay members and advisory capacity; and (c) a board with lay members and some regulatory authority but no governmental responsibility.

Berdahl (1971) characterized the state higher education policy process as primarily a function of the state higher education agency. He maintained that government officials rarely sent legislation to them, but rather counted on their work to initiate policy.

Berdahl and McConnell (1999) explained the onerous balance between autonomy and accountability. They surmised, "if a college or university is effectively to define its goals and select or invent the means of

attaining them, it must have a high degree of substantive autonomy" (p. 70). At the same time, they recognized the need for public accountability. The public, more aware of the necessity of higher education for economic stability and personal goal achievement, is demanding more scrutiny of institutions and processes. Berdahl and McConnell admitted that not only is the public interest becoming more complex, but so also is the task of communicating quality. Accountability begs many questions related to values, priorities, and qualification. Berdahl and McConnell defined accountability in two layers: (a) general response to the public at large and (b) particular response to limited constituencies.

States assert that their broad view of state goals and economic needs places them in the proper position to coordinate a statewide framework for higher education performance. They also aver that their position as financial provider fully justifies their authority. They further contend that powerful political leaders of individual institutions may unduly influence appropriation decisions and damage the broader objectives of statewide reform. Gordon Davies (2002) upon his resignation as leader of the Kentucky Council on Postsecondary Education,

wrote a scathing rebuke of practices by some local university presidents:

The great injustice to Kentucky is that the leaders of some universities and their political patrons are playing at reform. They are reasonably well-funded institutions that are using the rhetoric of reform to justify wringing ever more money from a poor state. As one of their presidents told me early in 1998, "It's my turn at the trough, and I intend to eat all I can." (p. D1)

Davies allegorized state performance incentives as the rudder of a ship to steer local institutions toward statewide goals. He maintained that the importance of individual institutional improvement lay in their benefit to the general good of all Kentuckians.

College and university leaders offer another perspective on quality and progress. Many campus leaders insist that schools have always been responsive to public needs, but local campus leaders and state political leaders often have conflicting objectives and disparate views about public needs (Newman, 1987; Benjamin & Carroll, 1998; Ewell, 1998). Even the process of accountability, with its accompanying regulations and paperwork, has drawn precious campus resources away from teaching and research to channel

them toward assessment activities (Benjamin & Carroll, 1998). Campus leaders contend that states are assuming increased liberty in making functional decisions of operation that academic professionals are more qualified to make. Newman (1987) labeled such activity as "inappropriate intrusion."

The acrimony between states and campuses usually manifests itself in arguments of autonomy versus flexibility; however, many higher education leaders have outlined the wisdom of partnership between the two entities, each playing a unique role (Newman, 1987; Berdahl, 1989; Ewell, 1998; Richardson, Bracco, Callan, & Finney, 1999). Newman (1984), for example, cited the importance for states to develop appropriate policy and to abstain from inappropriate intrusion. He maintained that intrusion characteristically included unnecessary bureaucratic regulation, politically motivated decisions of self-interest, and ideological impediment of university activity.

The following empirical studies explored autonomy, accountability, and the effects these issues have on higher education. Each of the studies provided further insight into the relationship between the state and campus.

Volkwein (1986) tested the relationship between campus autonomy and measures of university quality. There were four dependent variables in his study: (a) faculty quality, measured with a composite score of national reputational ratings in 20 fields; (b) undergraduate quality, measured with a composite score based on three national ratings of undergraduate competitiveness, selectivity and academic quality; (c) amount of governmental grants; and (d) amount of endowment and alumni gifts.

The independent variables for this study were measures of academic and financial flexibility. Volkwein (1986) developed these measures by extracting factors from a national survey on university flexibility and a survey he had developed in a previous study to measure financial control. In addition to the independent variables, Volkwein used several institutional and environmental variables as control: (a) Full-time equivalency enrollment (FTE); (b) institutional age; (c) constitutional status; (d) flagship status; (e) existence of certain types of schools; (f) variations in state appropriations per student; (g) cost of living; and (h) level of employee unionization.

Five multiple regression analyses provided the predictive information for the independent and control variables on the dependent variables. The results indicated that (a) Financial flexibility was not a significant predictor for any of the measures of quality employed in this study; (b) academic flexibility was a significant predictor for only one dependent variable, amount of endowments and gifts ($\beta = .23, p < .01$); (c) state appropriations per FTE was a significant predictor for every measure of quality; and (d) size was significantly predictive for faculty quality ($\beta = .67, p < .001$) and undergraduate quality ($\beta = .27, p < .05$).

Fisher (1988) examined higher education laws in four states over an 80-year period to determine if legislative activity indicated a trend away from institutional autonomy. She selected four states through a random sample stratified by (a) expenditures for higher education and (b) population. Her sample included Tennessee, Washington, Idaho, and New Hampshire.

Fisher (1988) categorized all higher education legislation for the four sample states into (a) laws imposing control, (b) laws granting flexibility, and (c) neutral laws. Using analysis of covariance for pools of

biennial data, she tested for significant differences in the ratio of restrictive to permissive legislation.

Fisher (1988) found that the biennial linear trend was significant for every state and the group of states toward (a) increased amount of legislation, (b) legislation restricting institutional autonomy, and (c) legislation increasing institutional autonomy. The ratio of control to flexibility laws was not significant. Fisher concluded that increased legislation reflected parallel growth in the higher education sector and maintained that the laws did not reflect a tendency toward increased or decreased autonomy.

Volkwein (1989) added to his earlier research concerning campus flexibility by researching (a) whether more autonomous campuses show greater gains in quality over time; (b) whether flexibility is more important for poorly funded campuses; and (c) whether a campus must be adequately funded before it can take advantage of its autonomy. He used data collected from his earlier study and made comparisons with 1985 data measuring changes in quality of graduate programs, student quality and grant funds.

Pearson correlations showed no significant relationships among quality ratings and autonomy measures

of budget, personnel and academics. In seven multiple regressions, flexibility measures did not explain any significant amount of variance in measures of faculty or student quality. Volkwein (1989) concluded, "apparently, improvements in quality and funding have little to do with the amount of state regulation exerted on public universities in the early 1980's" (p. 144).

A case study of specific state regulation by Frost, Hearn, and Marine (1997) examined the relationship between state policymakers and local higher education institutions. The study explored the decision-making process within North Carolina's higher education system. The authors used a state policy limiting out-of-state higher education enrollment to analyze three research areas: (a) principle decision-makers in higher education policy, (b) methods for decision-making, and (c) implementation methods of policy at the local level.

Bureaucratic-rational theory provided the authors with definitions and characteristics of multipurpose organizations. The researchers developed the description of North Carolina's higher education system as an organization with multiple goals and missions.

Management literature provided the authors with their theoretical framework concerning decision-making processes.

They defined procedural rationality as a form of decision-making steeped in information gathering and systematic examination of issues. They described an alternate method of decision-making as social interaction. Groups using social interaction do not rely on objective evidence and quantitative information, rather they rely on political reasoning.

Prior studies had suggested that higher education policy-making had relied heavily on social interaction. The purpose of this case study was to test what degree North Carolina's policy makers had relied on social interaction and procedural rationality measures to create the policy limiting out-of-state enrollment.

Frost, Hearn, and Marine (1997) used analysis of documents and semi-structured interviews to gather their data. Documents included legislative reports, media accounts, and internal communication and reports in the North Carolina system. The researchers interviewed legislative staff leaders, board members of the University of North Carolina (UNC) system, board members of the University of North Carolina at Chapel Hill (UNC-CH), high-ranking administrators of the UNC system and the UNC-CH campus, UNC-CH student government leaders, and UNC-CH faculty members. Interviewers followed an interview

protocol and subsequently transcribed and categorized responses.

The results of this study suggested that the legislature and state higher education system officials formulated the state policy on out-of-state enrollment with little input from campus-level personnel. The results further suggested that social interaction was the predominant method of decision-making throughout the policy process.

The authors explained that stakeholders at various levels used different language in expressing their role in the decision-making process. System officials and legislators used the language of top leadership; campus-based stakeholders used the language of mid-level leaders without power to influence decisions.

Another finding in this study showed a lack of reliance on research-based information in the decision-making process. Policy-makers enacted the legislation with little regard for existing theory or scholarly research.

Frost, Hearn, and Marine (1997) also found that institutional leaders defined and implemented the state policy with latitude favoring their particular institution's mission. Campus leaders used the lack of

policy details as an opportunity to mold the policy to their campus needs.

Frost, Hearn, and Marine (1997) concluded that their case study illuminated a situation where legislative accountability and political reasoning took precedence over institutional mission and educational values. They presented evidence to support more active involvement by campus-leaders in matters of educational policy and more reliance on research-based information.

Sabloff (1997) explored changes in the nature of state politics to see if those changes contributed to the continuing loss of institutional autonomy in higher education. She outlined several aspects of state politics that indicated the professionalization of legislatures in state politics: (a) the changing role of party affiliation, (b) the loss of power for political parties in elections, and (c) the narrowing distance between gubernatorial and legislative power. In addition to these circumstances, Sabloff reported four trends in the legislative structure that have increased professionalization: (a) increased time for legislative sessions, (b) rise in the educational level of legislators, (c) rules in the legislative process easing the passage of

bills, and (d) increased professional staffs for legislators.

The researcher conducted four comparative analyses of all 50 states and a case study of Pennsylvania to test her hypothesis that states with higher levels of professionalization exhibited decreased institutional autonomy. The independent variables, representing legislative professionalization, were: (a) the impact of special interest groups (SIG's), (b) the strength of the Republican and Democratic parties, (c) the authority of state higher education boards, and (d) the average number of months the legislature in a state meets. Political science literature provided the levels for each independent variable.

The dependent variable was the number of laws regulating higher education passed by the legislature in each state. The range of scores for the dependent variable was zero (Nebraska and Vermont) to six (Florida and Iowa). The dependent variable represented the amount of regulation controlling higher education and thus decreasing institutional autonomy.

Sabloff (1997) used a one-way analysis of variance (ANOVA) to test each of the relationships between the number of laws passed and: (a) impact of SIG's, (b)

strength of parties, and (c) the authority of state boards; because each of these independent variables was measured on a nominal or ordinal scale. She used a Pearson Correlation Coefficient to test the relationship between the length of legislative sessions and the number of laws passed, since both of these variables are measured on the interval scale.

The results of this study indicated no statistically significant relationship between the dependent variable, number of regulatory higher education laws, and three of the independent variables: (a) impact of SIG's, (b) strength of political parties, and (c) the authority of state higher education boards. However, the results did indicate a statistical significance between the number of regulatory higher education laws and the length of the legislative sessions. Sabloff did not report the specific Pearson r value, but she did say the relationship was significant at the .05 alpha level.

Sabloff (1997) further examined the effect of political changes on decreased institutional autonomy with a case study of Pennsylvania. She selected Pennsylvania, because political scientists characterized this state as having a professionalized legislature.

Sabloff (1997) utilized archival research, semi-structured interviews of long-tenured Pennsylvania

legislators ($N = 5$), and structured interviews of a stratified random sample of legislators ($N = 30$) based on party affiliation, gender, number of years served and committee assignments. Interviews confirmed the political science description of professionalization in the state legislature. Archival research confirmed the evolution of more regulatory higher education bills for the state of Pennsylvania.

The interviews also showed a lack of consistency between whether legislators verbally supported that states should not restrict institutional autonomy and their willingness to vote to maintain autonomy. Specifically, 81% of the legislators indicated favor for maintaining autonomy, but 92% supported a bill to regulate teacher requirements.

Sabloff (1997) interpreted a final revelation of the interviews as lawmaker loyalty to clients versus patrons. Patrons were constituents who provided financial support and votes, thus carrying more weight in influencing the decisions of legislators. Clients, by contrast, served the legislators by providing information and support. Sabloff interpreted lawmaker interview responses to be that universities were clients and should help inform decisions, but that the preponderance of loyalty was with the

constituency who held the votes and the financial resources for legislators. These perspectives led Sabloff to determine that autonomy at the institutional level would continue to decrease.

Another study about campus autonomy detected results conflicting with the results of Sabloff (1997). Volkwein and Malik (1997) studied the relationship among (a) institutional autonomy, (b) state characteristics, and (c) local campus characteristics. The researchers used a survey and secondary data from all United States institutions classified as Research I and II or Doctoral I and II by the Carnegie Foundation. Secondary data came from the U.S. Census, the Integrated Postsecondary Education Data System (IPEDS), National Center of Education (NCE), and other national databases. The researchers adapted a 1983 Volkwein survey to use in this study.

The variables were from three different categories: (a) state regulation; (b) state attributes; and (c) campus characteristics. Factor analyses procedures reduced the data.

The authors used a factor analysis to detect relationships among variables associated with campus autonomy. The results of the analysis for administrative flexibility yielded four separate factors: (a) revenue

flexibility; (b) expenditure detail flexibility; (c) budget detail flexibility; and (d) tuition and fee revenue. The results of the analysis for academic flexibility yielded six separate factors: (a) program flexibility; (b) standards; (c) accountability requirements; (d) disciplinary flexibility; (e) department flexibility; and (f) degree requirements.

Volkwein and Malik (1997) next compared 1983 and 1995 data associated with decreased state control and increased campus flexibility. In contrast to Sabloff's (1997) study resulting in issues of decreased local autonomy, the comparison resulted in demonstrating that many states have given campuses more flexibility.

The researchers used the administrative and academic flexibility measures as dependent variables in four multiple regression equations. For two of the regressions, the predictor variables were nine political, economic and cultural measures of the state. Only one factor, state size, was significant and accounted for 12% ($R^2 = .12$) of the variance in administrative flexibility. No variables were significant predictors of academic flexibility.

Two more regressions used 12 measures of campus characteristics (e.g., size, wealth, faculty quality) to predict academic and administrative flexibility. Only the

percentage of minority students was a significant predictor and only for administrative flexibility ($R^2 = .07$).

Finally, Volkwein and Malik (1997) tested measures of faculty and student quality as dependent variables in two multiple regressions against measures of academic and administrative flexibility as predictors, controlling for state and campus characteristics. The results of those analyses indicated no significance between campus autonomy and quality.

While Volkwein and Malik (1997) demonstrated a plateau or decrease in centralization, other researchers indicated more regulation, growing tension, and less communication between states and campuses (Sabloff, 1997 and Frost, Hearn, & Marine, 1997). These studies have demonstrated a growing force of coordination for higher education from state government.

A common theme in the research regarding the relationship between the state and the campus was the disagreement among leaders in each area about proper roles for various entities (Moos & Rourke, 1959; Berdahl, 1971; Newman, 1987). Political culture (Frost, Hearn, & Marine, 1997; Sabloff, 1997), governance structure (Berdahl, 1971), and state characteristics (Volkwein, 1989) each contributed

to the framework of coordination for state higher education systems.

The literature explained that the relationship between the state and the campus has evolved over time. The frameworks states used to coordinate their systems of higher education evolved, as well. These state governance structures provided information about the channels of influence and power within the system. The next section illuminates more information concerning the state structures and levels of influence in state higher education systems.

Governance Structures and Influences

The formation of state higher education systems varies from state to state. Convention defines state systems within three basic types: (a) consolidated governing boards where one board manages and controls a cluster of institutions; (b) coordinating boards where one board assigns duties for statewide higher education but does not have legal management; and (c) planning agencies where the duties are more voluntary and organizational (McGuinness, 1997). Most state systems fall within one of these frameworks, albeit many systems have some variation to the design.

States frequently restructure and change their systems to meet new demands. Restructuring often reflects shifting political, economic, and environmental circumstances. McGuinness (2002) admonished that structural changes are often made without first evaluating the total system of coordination. Restructuring without ample assessment may prevent states from accomplishing their coordination objectives. The following empirical studies investigated variables associated with state governance structures.

Structures

Examining a state higher education structure gives the observer a sense of the hierarchy of influence, the method of coordination, and the degree of control among and between various players in the higher education arena. The studies in this section examine the relationship between and among a state structure and (a) policy innovation, (b) leadership strategy, and (c) performance. In addition, these studies exhibit the evolution of the market description of higher education (Martinez & Richardson, 2003).

Hearn and Griswold (1993) investigated the relationships between state governance structures and policy innovation in higher education. They examined secondary data from several national databases.

The dependent variables for their study included measures of policy innovation both in category and quantity. The independent variables were categories of state higher education governance structures. Control variables were measures of population, region, educational development and socioeconomic condition.

The research designs for this study were bivariate correlational analysis and multiple regression. The correlations provided information about the relationships between governance structures and (a) individual policy innovations and (b) innovations in different policy domains. A series of multiple regressions analyzed the relationship between governance structures, the control variables and (a) policies concerning assessment requirements, (b) college attendance financing, (c) teacher education, and (d) the total number of innovative policies. The authors examined three regression models for each dependent variable: (a) a model with only contextual control variables; (b) a full hierarchical model with control and governance variables, and (c) a reduced backward entry model with control and governance variables.

The researchers found significance in governance structures for predicting some higher education policy innovation. Specifically, the results indicated:

1. Centralized governance was a significant predictor for policy innovation in academic reform and legislative treatment for college businesses. It was not a significant predictor for innovative college affordability policies.

2. There was no significant difference between governance structures in the total amount of higher education policy innovation.

3. Population, a control variable, was a significant predictor of the dependent variables. Larger states were more innovative in four of the eight policy arenas. Smaller states were significantly correlated to policy innovation in assessment requirements and financing.

4. Region was a significant predictor in several of the regression models.

5. States with weak educational development were more likely to enact reforms for teacher education and finance; they were less likely to adopt reforms for college businesses and assessment requirements.

Hearn and Griswold (1993) cited two themes emerging from this research study. First, they observed that governance structures influenced direct educational reform for states but did not influence financial affordability. Second, they did not observe a significant difference in

innovation between states with consolidated governing boards and strong coordinating boards.

Marcus (1997) analyzed the determinants of governance restructure in state higher education. He surveyed the 49 state higher education executive officers (SHEEO) by mail. Thirty-nine SHEEO's returned the survey; eight more responded after a follow-up mailing; and Marcus telephoned state officials of the remaining two states for their responses. Survey questions queried the participants concerning: (a) proposals for restructuring in their state; (b) initiators of proposals; (c) precipitating issues; and (d) enactment of proposals.

The survey responses indicated 49 proposals had progressed in 29 states between 1989 and 1994, and states had finalized action on 38 of those proposals. Legislators initiated the most proposals ($N = 25$), but those from state boards were most likely to be enacted (80%). Proposals that contained (a) measures to contain or reduce costs (63%), or (b) measures to increase institutional accountability (68%) had the highest pass rate. Efforts to increase the governor's or the legislature's role in higher education had a high rate of passage (64%). Marcus concluded from the responses that cooperation among campus level officials, state higher education officials, and

legislators lessened the amount of legislative regulation concerning governance.

Bracco, Richardson, Callan, and Finney (1999) conducted a three-year, national comparative study of state higher education governance structures. The 1999 article focused on three states, Illinois, Georgia, and Michigan, to illustrate the major structural and leadership differences among states. They chose these three states as representative, because the states had similarities in size and student populations but were different in state higher education structure.

The authors interviewed more than 200 individuals and searched documents and archival data to assemble their qualitative analysis. After data were collected, the researchers wrote an interpretive synthesis to explain (a) the relationship between performance and state governance design; and (b) the effect of state structure on leadership strategy.

The results of the data analysis suggested that state governance structures included two dimensions: (a) the policy environment, or how states balance the interests of academia, the interests of the market, and the interests of the legislature; and (b) the structural environment, or how the state establishes lines of authority and

accountability. These two dimensions became the foundation to explore each case state.

Bracco, Richardson, Callan, and Finney (1999) characterized Illinois as having a federal model of higher education governance and a steering role in policy. This combination focused on responding to the environment and to market forces. The researchers concluded that legislators were pleased about the performance of the state system.

Bracco, Richardson, Callan, and Finney (1999) characterized Georgia as having a unified structure between governance and policy. The centralized regulation is compatible but not responsive to market forces.

Bracco, Richardson, Callan, and Finney (1999) characterized Michigan as a segmented system of governance with the state policy environment being focused on providership. General satisfaction in Michigan seemed to be based on deference to professional values even though the system was inefficient.

Analysis of the case studies led the researchers to summarize that the balance between policy environment and state structure was important in influencing satisfaction in state higher education performance. They concluded that mismatches in policy and structure created contentious situations where leadership was difficult.

Martinez (2002) used the Bracco (1999) framework to determine if it was applicable to a state not used in the derivation of the framework. He used a case study of South Dakota's higher education system to analyze (a) the efficacy of the existing framework in analysis of the South Dakota system and (b) conclusions from the South Dakota application that might illuminate future research on additional state systems.

Martinez (2002) chose this framework to explore, because he felt its multidimensional nature captured more of the character of state systems than previous unidimensional descriptions. Martinez chose South Dakota as the state for the case study, because National Center for Public Policy in Higher Education (NCPPE) officials thought there might be policy-driven change in the state's higher education.

The case study method included document research, onsite and telephone interviews. Onsite interviewees included higher education administrators, board members, legislators, and policymaker aides ($n = 11$); telephone interviewees included additional administrators ($n = 3$), faculty members ($n = 3$), and state economists ($n = 2$). Martinez (2002) transcribed, coded and sorted the interview data according to an a priori coding scheme based on the

three levels of the higher education system framework laid out by Bracco (1999).

The results of the case study analysis found two strengths within the system framework that helped explain the specific structure in South Dakota. First, the framework aided researchers in examining the state's higher education structure as an open system. The analysis showed relationships between and among political, structural and performance aspects of state higher education. Second, the case study showed that the three-level framework called attention to whether South Dakota had compatibility between and among levels.

Martinez (2002) discussed whether compatibility was necessary for policy-driven change, or whether tension between levels of higher education might actually induce change. His analysis also raised an issue for future research of the unique and complementary roles of higher education boards, legislators and institutions in making and influencing policy.

As the literature evolved and understanding of the higher education market developed, analysts envisioned a need for a conceptual definition of the broad higher education market. Martinez and Richardson (2003) developed a framework to examine policy interaction among key

stakeholders in the higher education market. They used literature review, case studies of the higher education policy environment in New Mexico and New Jersey, and performance grades for the NCPPHE report card to formulate their taxonomy.

The components of their model included (a) the policy environment, (b) the means that states used to influence higher education by system design and fiscal policy, (c) the system behaviors, and (d) performance. The researchers determined the key groups of stakeholders to be (a) higher education institutions, (b) the state, and (c) consumers.

Martinez and Richardson (2003) characterized the nature of communication among the three key stakeholders as interactions of influence. They determined that interaction between higher education and the consumer took the form of services, programs, information, tuition levels, and student preferences. Interactions between the state and the consumer consisted of state aid and information. Interaction between higher education and the state consisted of governance, finance, accountability, and information. The nature of these interactions defined three different types of state-level higher education markets: (a) a balanced market where each group of stakeholders had relatively equal input; (b) a market

monopoly where higher education institutions had a greater portion of the influence; and (c) a regulated market where the state had a greater portion of the influence.

The case study of New Mexico illuminated a circumstance where the institutions had more influence than the state or the consumer; therefore, the authors characterized New Mexico as a market monopoly state.

The case study for New Jersey exhibited a balanced market. When the researchers compared performance grades for these two states, they saw high grades for New Jersey across most measures of performance. For New Mexico, only the measures for accessibility, a priority for the state, were high.

Based on the results of the case studies, Martinez and Richardson (2003) theorized that balanced market states would perform proportionately better across a broad range of indicators. Further, monopoly and regulated market states would produce higher grades on only single indicators. They encouraged future research to test this theory along with environmental variables outside the control of the market.

As research on governance structures has shown, higher education exists within an environment where political variables are influential. The next section outlines

research about various political variables within the culture of higher education.

Political Influence

The political environment is a significant influence in the design, structure and process of statewide higher education. Within an ideal system, state legislators seek to balance the needs of the voting constituency with the needs of the higher education institutions.

In recent years, political tension increased as a result of five trends: (a) escalating demands from higher enrollments and broader public expectations; (b) severe economic constraints; (c) reluctance to change by those in academia; (d) negative public opinion; and (e) more instability in the political processes caused by term limits and professionalism of legislators (McGuinness, 1999). McGuinness called for higher education leaders to become intentional in the process of defining a positive and necessary relationship among political and institutional players.

Several researchers have explored the political players in higher education and the interaction among levels of hierarchy. These following studies provide insight into the political influences in higher education.

Blackwell and Cistone (1999) investigated the hierarchy of power in Florida's higher education policy environment. Using a mailed survey instrument, they queried 290 higher education presidents and vice presidents and members of the executive and legislative branches of state government for their perception of the influence of specific individuals and groups within the higher education policy environment. The total response rate was 72%: (a) 85% response from private institutions, (b) 93% from community colleges, (c) 90% from state universities, and (d) 41% from state government affiliates.

The survey questions asked respondents to rate various personnel associated with higher education policy ($N = 18$; e.g., the governor, state legislators, and faculty) according to their influence on state higher education policy, using a 7-point, Likert-type scale (1 = *very low influence*, 7 = *very high influence*). Blackwell and Cistone (1999) ranked the 18 policy actors using the mean scores from the surveys then compared the means of adjacent pairs using independent samples t-tests to determine any statistical significance between means. A cluster analysis grouped policy actors into five clusters which the researchers interpreted as (a) the insiders who exerted the most political influence, (b) the near circle--the second

most influential group, (c) the far circle--an influential but non-crucial group, (d) the sometimes players who are formally involved but not very influential, and (e) the often forgotten players who have an interest in higher education but seldom show influence in policy matters.

The results of this study indicated that Florida higher education personnel perceived leading members of legislative committees as having the single-most influence in state higher education policy-making ($M = 5.95$). Significant mean differences existed between (a) the state legislature ($M = 5.89$) and the state university system chancellor ($M = 5.46$); (b) the state board of regents ($M = 5.28$) and the governor and executive staff ($M = 4.78$); and (c) education interest groups ($M = 4.12$) and faculty organizations ($M = 3.58$).

The results of the cluster analysis grouped the first cluster, or insiders, as (a) legislative committee members, (b) state legislature, (c) key legislative staff consultants, (d) the university system chancellor, and (e) the state board of regents. The second group, or near circle, were (a) the governor and executive staff, and (b) senior staff in the state Department of Education. The third cluster, or far circle, were (a) the courts and (b) federal policy. The fourth group, sometimes players, were

(a) lobbyists from public institutions, (b) non-education interest groups, (c) all education interest groups, and (d) lobbyists from private institutions. The final cluster, often forgotten players, were (a) faculty organizations, (b) citizen referenda, (c) student organizations, (d) education research organizations, and (e) producers of education materials.

Blackwell and Cistone (1999) noted that these results were not necessarily indicative of actual influence but rather perceptions of influence by state higher education personnel. The authors summarized that there was consensus among higher education leaders as to the power of various participants in policy development.

Martinez (1999) conducted a survey and analysis of state legislator views about higher education governance and public policy. Assistants to Martinez conducted 25 telephone interviews with state legislators in 18 states. The interview protocol was a 12-question, semi-structured, in-depth conversation with each participant. The sample was purposeful, selected from recommendations by the higher education policy community of legislators who had knowledge, insight, or influence on public university governance and trusteeship. The sample also included

legislators with a broad variety of political, contextual, and governance perspectives.

Martinez (1999) identified themes in the interview responses and analyzed the data using two, two-dimensional data matrices. He also conducted chi-square distribution analyses on some of the data to determine significant mean differences among responses.

The results of the analyses led Martinez (1999) to identify three major themes in the legislator responses: (a) Citizen trustees in higher education governance have a responsibility to serve as an institutional advocate; (b) citizen trustees in higher education governance have a duty to guard the public trust; and (c) citizen trustees have difficulty balancing the two responsibilities. Martinez reported 88% of interviewees mentioned areas where trustees needed to look beyond the needs of individual institutions: (a) Awareness of individual institution's role in the state's total system of higher education; (b) knowledge of the board's work to promote seamless K-16 education; and (c) knowledge of broader state issues, needs, and problems.

One survey question asked legislators to rate the importance they gave to various responsibilities affiliated with governance, based on a 5-point, Likert-type scale (1 = *very unimportant*, 5 = *very important*). Martinez (1999)

grouped the respondents according to four types of state governance patterns: (a) mixed, (b) consolidated, (c) multicampus, and (d) single boards. He ran a chi-square distribution on the responses, but found the low sample size invalidated the efficacy of the test. A Statistical Analysis Software (SAS) contingency table and frequency distributions provided revised information.

The responsibilities of governing boards receiving the highest importance ratings from the legislators were (a) evaluating the performance of the university president (65.2%); (b) overseeing the institutional budgets (63.6%); (c) creating a positive culture dispassionate toward personal and political interests (61.9%); and (d) holding campuses accountable against their missions (59.9%). Legislators from states with mixed and single governance structures placed more weight on accountability and positive board culture.

A final observation by Martinez (1999) described respondent terms for responsibility of campus-level personnel as operational and managerial, whereas state responsibility terminology was accountability, duplication, and operation from a statewide perspective. Martinez summarized that legislators recognized trustee board success when a balance was achieved between advocacy for

the institution and the broad picture of guarding public interests.

Griswold (1999) interviewed researchers, consultants, and financial aid authorities ($N = 11$) who had been involved with the National Commission on Student Financial Assistance to examine popular beliefs that these researchers were affected by political constraints. The commission was formed in 1980 under the Carter administration to assess national aid policy and effectiveness.

The results of the interviews indicated that the commission had both explicit and implicit goals, both of which fluctuated as presidential administrations changed. Goals were also affected by time and budget constraints, reflected by political priorities.

The interviewees agreed that the commission was successful in propagating the need for data collection concerning higher education. Some interviewees suggested that more should have been done with collected data.

Griswold (1999) reported that the interviewees described political interference in actual commission research at three points: (a) goal formation, (b) during data collection and analysis, and (c) in reporting. Usually, these political influences were associated with

unrealistic time-lines, lack of financial support, and political framing of issues.

Griswold (1999) summarized that the commission produced data and research that continued to be valuable in educational policy. She theorized that policy researchers might be more effective if they advocate policy based on their findings. She warned researchers to consider the political influence of certain research and warned policy makers to understand the limitations of research in political arenas.

McLendon and Peterson (1999) examined the effects of press coverage on a higher education appropriations policy in Michigan. Their purpose was to see if media coverage was biased toward a particular viewpoint and could influence local public opinion.

The context for their study was a Michigan legislative decision to change state higher education appropriations to Michigan State University (MSU) and the University of Michigan (UM). Traditionally, the state had a voluntary coordination structure honored by the governor, the legislature, and the college presidents. The 1995 legislature provided a disproportionately larger increase for MSU in comparison to UM.

McLendon and Peterson (1999) analyzed the content of news stories in the *Ann Arbor News* and the *Lansing State Journal* to see if their reporting favored one side of the appropriations issue. Communication and media theory suggested that the *Ann Arbor News* would report favorably toward UM because of its proximity to the school and media tendency to use convenient sources. For the same reason, *The Lansing State Journal* would report favorably toward MSU.

The authors tested their hypotheses using content analysis methodology. They obtained all copies of both newspapers published between January and July 1995. A search of the papers resulted in 67 articles that pertained to the conflict. The researchers eliminated editorial or opinion pieces and only retained news stories for their analysis ($N = 15$ for the *Ann Arbor News* and $N = 18$ for *The Lansing State Journal*). They developed an analytical protocol and coded data according to four categories: (a) news volume, (b) source attribution, (c) tone, and (d) news themes.

A line-count of coverage provided information about volume of coverage. The *Ann Arbor News* gave 1,405 lines coverage to the issue; the *Lansing State Journal* devoted 852 lines to the issue. Seventy-nine percent of the

coverage in the *Ann Arbor News* focused on UM, while 74% of the *Lansing State Journal's* coverage focused on MSU.

To test the source attribution, McLendon and Peterson (1999) coded and counted source distribution in each article. They used interviews and background data to assess the affiliation of each source.

The assessment of source attribution showed papers primarily using sources affiliated with their local schools. In the *Ann Arbor News*, 91% of the sources were UM officials or legislators affiliated with UM; six percent of the sources were affiliated with MSU. For the *Lansing State Journal*, 76% of its sources were from MSU; nineteen percent were affiliated with UM.

McLendon and Peterson (1999) assessed tone by coding each quotation as positive, negative or neutral in tone toward each school. The results for the *Ann Arbor News* were 86% positive quotations for UM and 76% negative quotations for MSU. The results for the *Lansing State Journal* were 89% positive quotations for MSU and a small number of negative quotations equally divided between the universities.

The final assessment by the authors involved analyzing the articles for news themes that might be biased toward their local school. They categorized the stories as (a)

supportive UM, (b) hostile UM, (c) supportive MSU, or (d) hostile MSU. The results yielded these themes for the *Ann Arbor News*: (a) 22% in the supportive UM category, (b) 13% in the supportive MSU category, (c) 13% in the supportive MSU themes, and (d) 52% in the hostile MSU category. The results for the *Lansing News Journal* were (a) 5% in the supportive UM category, (b) 18% in the hostile UM category, (c) 71% in the supportive MSU category, and (d) 6% in the hostile MSU category.

McLendon and Peterson (1999) concluded that the two newspapers had divergent patterns of coverage for the appropriations issue. The coverage tended to show media bias toward their local schools. McLendon and Peterson observed that the use of university officials as sources shaped the news coverage and implied that the role of university officials potentially influenced public policy.

A comparative study by Gittell and Kleiman (2000) analyzed the impact of state politics on higher education policy. They used two policy areas as their basis for comparison in Texas, North Carolina and California: (a) access in public higher education and (b) economic development. Primary and secondary data sources and 100 interviews of state-level higher education officials provided the data for the study.

Gittell and Kleiman (2000) discussed the role of political players in higher education policy debate. They listed the main components in state higher education regimes as (a) the governor, (b) state legislatures, (c) the business community, (d) higher education officials, (e) faculty, (f) coordinating boards, (g) private institutions, (h) community colleges, and (i) interest groups.

Based on the political climate in North Carolina, Gittell and Kleiman (2000) categorized the state's political culture as a progressive plutocracy, closely tied to private sector interests. The researchers suggested that the effects of North Carolina's political culture were evident in underfunded public schools, poor quality in non-flagship universities and community colleges focused on private sector interests.

Gittell and Kleiman (2002) described California's political climate as direct democracy. Initiative, referendum, and recall had been part of the state constitution for 80 years. The authors explained that California's higher education system was volatile and subject to sudden changes from voter initiatives.

The political culture in Texas was highly decentralized and individual. Political power was not dependent on political party, but on business interests and

personality of the individual candidate. Gittell and Kleiman (2000) described higher education in Texas as uncoordinated and driven by pork-barrel interests.

The researchers concluded that each study state showed close correlations between higher education system effects and political culture. Further results of their study suggested that decisions of elected leaders were more influential in higher education policy than was the input of public education leadership.

Gittell and Kleiman (2000) tested their observations by studying the decision processes of two higher education policy issues: (a) access and (b) economic development. They evaluated access in each state by studying who participated in higher education, who received degrees and how affirmative action debate evolved. They studied economic development by analyzing the extent of actual development and the political actors influencing development.

The results of the policy comparison suggested that each state was in process of reevaluating longstanding affirmative action policies in public higher education institutions. In California, the change in affirmative action originated in regent vote and public initiative. The higher education regime's response was weak, and the

state political culture was influential through strong gubernatorial power and a weak legislature.

In Texas, the courts initiated affirmative action debate through the *Hopwood* decision. Both the higher education system and the state legislature responses were active.

Reevaluation of affirmative action in North Carolina originated with the University of North Carolina president. The state higher education regime response had been moderate, and the primary impetus had remained in centralized leadership at the University of North Carolina.

The authors were not able to assess economic development. They found that cross-state indicators did not reveal a linear connection between higher education and economic development.

Gittell and Kleiman (2000) concluded that (a) political culture was influential on state higher education policy, (b) an active state legislature made a positive contribution to higher educational issues, and (c) there was poor communication among higher education policy makers within each state. They suggested that the combination of political influence and poor communication created a precarious environment for most public higher education institutions.

State government structures of higher education run between extremes of voluntary guidance and mandated regulation. The political environment of the state often determines these opposite dimensions of coordination. While communication between campus-level personnel and state-level policymakers varies across the states, analysts have called for increased understanding between the two roles.

Richardson (1999) insisted that the proper role of the state is to balance the needs of the market, or society at-large, with the product of higher education manifested in local institutions. By resting the responsibility for success on the shoulders of the state, Richardson suggested that "states that fail to establish an appropriate role for managing the conflicting pressures of professional values and the market end up with less satisfying outcomes than those that do" (p. 15).

Tierney (1998) and colleagues, in *The Responsive University*, portrayed higher education institutions as the proper center of change to meet societal values. Their premise, that responsive universities will eliminate state intrusion, suggested that the fundamental values of teaching, research, and service are adequate foundations for higher education. While Tierney did not find system

improvement antithetical, he did argue for solid restructuring at the campus level.

Newman (1984) took the middle ground between the suggestions of Richardson (1999) and Tierney (1998). He wrote that each entity, especially the state and the campus, have important but unique roles to play in higher education. He insisted that states, when creating appropriate public policy, fill an important function by setting goals, allocating resources, holding institutions accountable, and encouraging those who govern universities. When states overstep their bounds into tasks best done by education professionals, Newman claimed states were inappropriately intrusive. Newman appealed to leaders in both camps to create a strong, but appropriate relationship between states and campuses.

Lewis and Maruna (1999) echoed Newman's (1984) sentiment:

From a political perspective, governors and legislators present the appearance of movement and reform, but the need to show improvement within an electoral time-frame makes them less sensitive to the long-term effectiveness of reforms. The real world of state politics has to do primarily with the distribution of resources and symbols. Educating

young people is the business of schools and teachers. It is the task of future scholars to tie these two levels together into a meaningful synthesis. (p. 428)

State Roles

The following literature demonstrates how the state role and involvement in higher education has evolved and expanded over the years. In his 1984 book, *Conflict in Higher Education: State Government Coordination Versus Institutional Independence*, Millet traced the evolution of state involvement in public education. Nine royal or colonial charter schools for higher education existed in America between 1607 and 1776. The Northwest Ordinance of 1787 authorized land grants for states to start new public institutions.

As expansion of the United States pushed westward, public and private colleges opened in almost every new state. New England remained an exception in public higher education. These states were satisfied with successful private colleges like Dartmouth, Harvard, Columbia, and others.

The Morrill Act of 1862 from the federal government gave further motivation for states to establish colleges of agriculture and mechanical arts. Twenty-two states formed land grant universities because of the Morrill Act.

Before World War II most public colleges were in rural areas, fearing unwelcome worldly influence from big cities. Soldiers returning from the war wanted a chance at higher education and influenced their politicians to provide access to institutions near their homes. The Supreme Court ruled in 1950 that states should provide a geographical balance in access to higher education. Another influence of the war, increased interest in jobs requiring higher education and the financial ability to continue past high school, manifested itself in growing enrollments. Millett (1984) reported that an early state goal for higher education was to provide adequate institutions so any high school graduate with appropriate intellect, resources, and motivation would have the opportunity to attend a college or university in their state.

Millet (1984) outlined key state government issues for higher education in the 1980's. First, he summarized that the issues fell into two primary categories: (a) administrative management concerns of economy and efficiency and (b) statewide coordination.

One state issue in the early 1980s presented a clash of values for state higher education authorities to reconcile. A popular conception emerged that geographic access and an open-door policy was diluting the academic

quality of higher education. A public accustomed to relatively unrestrained access accused selective colleges of racial and ethnic discrimination.

A second serious issue facing states in the 1980s was declining state revenues that forced cutbacks to educational funding. The combined result of rising tuition at state campuses and falling appropriations and student aid increased state pressure to solve affordability questions for the public.

A third issue reflected major transformations in the missions and goals of state institutions. Traditionally, the state institutions had clear, differentiated roles. Millet (1984) explained that these roles were overlapping for two reasons: (a) Institutions with previously single missions began to acquire multiple missions and (b) campus administrators and faculty became insistent for increased research and graduate education. These situations created an issue of program duplication for state consideration.

A fourth issue advanced in the 1980s as states had to balance the relationships between and among public institutions, private institutions, and state involvement. Initially, states had little regard for the private higher education sectors. As states began to realize that the private sector created legitimate competition for public

institutions, they undertook efforts to embrace them within the state landscape. Millet (1984) explained the climate for private education debate:

The problem of state government assistance to private higher education arose at a time when most state governments were hard pressed financially to maintain their public institutions. Even though state political leaders might be sympathetically disposed toward the private colleges and universities, they were likely to see their primary responsibility as the support of public colleges and universities. Some leaders might appreciate the argument that private institutions achieved levels of quality and of academic freedom that could serve as standards for public institutions. Other leaders might appreciate the argument that the loss of private institutions would increase public enrollment and the costs of public higher education. (p. 153)

Millet summarized that the public expected state government and higher education boards to help private institutions without depriving public institutions of resources.

A final important issue in the 1980s raised by Millet (1984) involved financial planning. Millet summarized this

concern as affecting five areas: (a) appropriations for operations and renovations to physical plants; (b) proper delineation of funds for instruction, research, service, and student financial aid; (c) fair distribution among all state institutions; (d) appropriate and reasonable costs for state and federal goal achievement through higher education; and (e) appropriate policies and philosophies concerning the balance between costs to students and costs to the public. McGuinness (1995) echoed four policy issues introduced in the 1980's as statewide responsibilities: (a) policy agenda setting, (b) performance funding, (c) state assessments for student learning, and (d) performance accountability reporting.

The increased scrutiny and elevated expectations resulting in an era of assessment in the 1980's developed into a movement of accountability in the 1990's (Ruppert, 1997). Alexander (2000) explained that the fundamental presupposition of the accountability movement was that self-evaluation of higher education and market choice were not sufficient indicators of educational value.

The accountability movement described a situation where states began to take more responsibility for direct coordination. As the state began to take more of a directional role, the issues of higher education policy

began to grow. Questions emerged regarding allocation and its link to performance; questions of performance led to increased accountability and assessment requirements; questions of assessment and accountability began to open the door to statewide regulation of academic practices. Research literature has traced the evolution of statewide policy development.

As the relationship and roles between the state and campus have evolved, the policies this relationship manifested have evolved as well. The following subsections will trace the policy literature about (a) affordability, (b) tuition and appropriations, (c) direct student aid, (d) funding and access, (e) performance funding, (f) performance, (g) private institutions, and (h) additional policy issues.

Affordability

Financial accessibility of higher education has been an explicit American goal since the inception of the GI Bill following World War II. Consequently, the rapid increases of tuition and fees over the last two decades, especially as compared to median family income, have become an increasingly anxious issue for our society. Maintaining affordability of higher education for the masses is a

concern for families, businesses, higher education leaders, and government policymakers.

Several analysts have sought plausible explanations for substantial tuition increases. Their attempts to understand reasons for higher tuition laid foundations for efforts to create policies and practices to maintain affordability for all Americans.

Hauptman and Merisotis (1997) used national data sets and case studies of individual colleges to analyze six hypotheses for the increase in tuition and other college prices. They listed (a) increased costs for institutional goods and services, (b) expanded or improved service expenses, (c) decreased nontuition revenue, (d) increased availability of student aid, (e) tighter competition among institutions, and (f) declining traditional enrollment as classic hypotheses to explain higher tuition.

They maintained that no single explanation was sufficient to explain higher tuition. Instead, a combination of factors was responsible for the increases, and some factors had a stronger influence than others did.

Among the most important factors, Hauptman and Merisotis (1997) included: (a) The cut-backs in state appropriations; (b) increased expenses for faculty and staff salaries, student services, nontraditional

recruitment and retention, administrative requirements, campus-based research, and technological equipment. They found that neither reduced income from endowments and private gifts, nor federal student aid were significant contributors to rising tuition. Their final analysis maintained that if the economy did not substantially improve, college prices would probably continue to rise faster than inflation.

Mumper (2001) also analyzed reasons for tuition increases. He interviewed state and campus policymakers for their explanations for tuition increases in their states. Using these extensive interviews, Mumper constructed five causal narratives of rising tuition. The five explanations included: (a) Decline in state support inevitably necessitated tuition hikes; (b) State budget decisions prioritized Medicaid and prisons to satisfy voter needs; (c) Campuses increased tuition to maintain quality programming; (d) Lack of accountability by local institutions caused wasted funds; and (e) Rising tuition was really not a problem, because enrollments continue to grow.

Mumper (2001) concluded that the disparate views of rising tuition unveiled by his analysis revealed a fundamental difficulty for resolving the issue. Since four

distinct reasons and one non-reason existed, policymakers did not address rising tuition by unified policy direction. Mumper maintained that the inherent political nature of the various concepts required effort by state and campus leaders to communicate with each other in assessing plans to control college costs.

Taxpayer concerns about the affordability of college precipitated Congress in 1997 to appoint the independent National Commission on the Cost of Higher Education to comprehensively review costs and prices of higher education in America. Congress chartered the commission to review 11 specific issues related to trends, causes, and potential controls for rising tuition and institutional costs. The work of the commission is published as *Straight Talk about College Costs and Prices* (1998).

One of the first tasks of the commission was to delineate between *prices* for higher education paid by students and *costs* of higher education incurred by the institutions. Commission members adamantly expressed the importance of distinction between cost and price. Even in the face of higher prices for students, American higher education remains a value, because students only pay a small portion of the actual costs.

The commission's six-month tenure included analyses of existing data, presentations by key political and higher education leaders, and study of commissioned policy papers. The conclusion of their work manifested itself in five action agenda areas.

First, members advised institutions to strengthen their cost control efforts. They encouraged institutions to evaluate their productivity and to prioritize key endeavors to eliminate unnecessary or superfluous programming. Second, the commission admonished the entire academic community to improve market information and public accountability. They emphasized the importance of informing the public about the actual costs of education, the value of student services, and the specifics of where consumer money is spent. Third, the commission recommended deregulation of higher education. They concluded through testimony that over-regulation increased costs for institutions. They advised government to stress performance, not compliance, and differentiation of mission, not standardization. Fourth, the commission recommended that accreditation be a tool to evaluate outputs of student achievement. Fifth, the commission recommended enhancement and simplification of federal student aid. They surmised that federal aid did not drive

tuition up, but rather was an important tool in providing access for low-income families.

The commission's report was approved and presented to Congress and the president in February, 1998. One of the commissioners, Frances McMurtray Norris, was not available to vote but presented a dissenting statement. He related that the work of the commission was a good beginning, but the report lacked useful substance. He was disappointed that the commission did not address tenure, the cost and value of research, duplication of facilities, teaching loads, and the relationship of student loan programs to rising tuition.

Recent policy papers have continued to address the affordability issue. Bell and Michelau (2001), higher education specialists with the National Conference of State Legislatures, explained the onerous problem of higher education affordability for state policy-makers. Not only are legislators working hard to solve the problem, but their fiscal policies also helped create the dilemma. State higher education appropriations are accounting for fewer overall revenues to colleges and institutions. Institutions raise tuition to make up for the difference. A shift from higher education as a public common good to a consumable private investments seems to be occurring.

Bell and Michelau (2001) outlined several controversial new policies states are enacting to combat higher tuition. Financial aid based on merit, like Georgia's HOPE scholarship, is one state strategy to make higher education more affordable and to keep the best students in-state. Legislators prefer these policies, because the voting constituency responds positively to them.

Legislators also promote prepaid tuition plans, college savings programs, and tuition tax credits. Bell and Michelau (2001) report that state policymakers applaud these incentives as both good education policy and good politics.

Opponents of these new programs warn the public that these are only financial tools for middle and upper-class families who could already afford to pay. Critics hold that the proper place for state support in higher education is through need-based financial aid. They contend that states benefit economically and socially from educated citizens and that merit programs will exclude the most financially needy, yet academically prepared, students. Bell and Michelau (2001) concluded that state legislators must continue to engage in questions about affordability, access and the proper state role in higher education.

The National Center for Public Policy and Higher Education (NCPPE) addressed the affordability issue in a special report, *Losing Ground: A National Status Report on the Affordability of Higher Education*. An advisory committee, reviewers, and consultants prepared this report as a tool for state policymakers.

The officials working with NCPPE defined affordability as a function of tuition and fee prices, available financial aid, and family income. They outlined five trends in state affordability: (a) Increasing tuition is making higher education less affordable for most American families; (b) Federal and state financial aid has not kept pace with tuition; (c) More students and families at all income levels are borrowing more money than ever before to pay for college; (d) The steepest increases in public college and university tuition have been imposed during times of greatest economic hardship; and (e) State financial support of public higher education has increased, but tuition has increased more.

The NCPPE assured states that effective policy could combat poor affordability. They maintained that a given state achieves affordable higher education through tuition policy accounting for state family income, need-based financial aid, and low-cost colleges.

The NCPPHE officials also criticized state policy strategies like merit aid and tax incentives. They warned that the enrollment gap between high and low-income Americans was growing. They recommended that states rethink their policies to break the cycle of poor affordability and to create long-term strategies that will withstand economic peaks and valleys.

Longanecker (2002) also addressed policy integration strategies in a commentary for the State Higher Education Executive Officers (SHEEO). He explained that current state fiscal policy toward higher education usually takes one of two approaches: either across-the-board cuts on discretionary items or focused cuts. Longanecker maintained that intentional strategies to align tuition, appropriations, and financial aid could diminish the ill effects of budget cuts. He also advised that integrated strategy would keep access available for low-income families.

The NCPPHE supplemented their *Losing Ground* report with a review of surveys on public opinion about American Higher Education affordability (NCPPHE, 2002). Public Agenda conducted the review at the request of NCPPHE. They studied research from two previous NCPPHE reports, an American Council on Education report, and survey results

from an online research database. They also explored the quantitative results in two focus groups in the Philadelphia area.

Five major themes emerged from their work. First, a majority of Americans believed it is very important to receive higher education. They viewed higher education as preparation for careers and jobs, acquisition of general skills and maturity, and development of social skills. Second, many parents were concerned about the affordability of higher education. They also realized that they could compensate rising prices by attending less expensive community colleges. Third, the public supported a governmental role in higher education. They preferred financial aid support in the form of tax breaks and work-study. Fourth, Americans opposed higher education finance strategies that reduced access. They were against raising tuition and lowering admissions, but they were supportive of greater contributions from the state or cost savings by local institutions.

The State Higher Education Executive Officer's organization (SHEEO) also conducted a survey related to state affordability in higher education. They questioned state higher education finance officers in late June 2002 about five areas of higher education policy: (a) tuition

philosophy, (b) tuition setting, (c) student fees, (d) student financial assistance, and (e) affordability. The mailed survey resulted in responses from 44 different states.

The results of the survey for tuition philosophy indicated variation among states in their fundamental ideas that guided tuition setting. Fourteen states indicated that tuition should be as low as possible, 12 states indicated that institution-level needs or standards solely guided tuition policy, and six states indicated that tuition should be moderate. No state responded that they believed tuition should be high.

Authority to set tuition also varied among the states. In four states, the legislature had primary authority. In 18 states, the state higher education coordinating or governing agency had primary authority. In 12 states, a higher education system board had primary authority. In 16 states, individual institutions had primary authority. Some states indicated a shared responsibility between two entities. The majority of states responded that they had no formal regulations to limit tuition.

The SHEEO survey also asked respondents about factors used in setting resident and non-resident tuition. The survey listed 16 factors and asked respondents to indicate

how influential each factor was on a 5-point, Likert-type scale (1 = *no influence*; 5 = *significant influence*). For resident tuition, responses indicated that state general fund appropriations were the most influential factor ($\mu = 4.4$), followed by prior year's tuition ($\mu = 3.7$).

Decision-makers usually based nonresident tuition on the full cost of instruction. Nineteen states indicated that a cap, freeze, curb, or some limitation had been placed on tuition at some point during the previous three years.

The SHEEO survey also revealed a variety of philosophies among states for financial assistance programs. States differed on the emphasis they placed on need-based aid like grants and loans versus merit-based aid to recognize talent and reward student effort.

The survey asked respondents to indicate on a 5-point, Likert-type scale (1 = *no influence*; 5 = *significant influence*) how influential seven goals of financial aid policy were to their states. The results indicated promoting broad access to higher education as the most influential goal ($\mu = 4.6$), followed by improving the affordability of higher education ($\mu = 4.5$). Six states indicated that recognizing student talent and effort was the most influential goal ($\mu = 3.3$). Other goals included promoting retention ($\mu = 3.5$), facilitating student choice

($\mu = 3.4$), preparing students for specific careers ($\mu = 2.9$), and helping equalize public and private tuition ($\mu = 2.1$). The survey also indicated that student aid is available in most states in a variety of forms. Programs included need-based grants, statewide merit-based scholarships, targeted merit scholarships, loan forgiveness, state-funded work-study and guaranteed loans, specific-group aid, and state tax credits or deductions.

Broad issues of affordability constituted the final inquiries of the SHEEO survey. Many state respondents recognized the need to address issues of decreasing affordability for higher education. Some state had instituted special commissions or task forces to review the affordability issue, while other states had taken initiatives to inform the public about college costs and prices. Thirty-three states had developed some form of a prepaid tuition or college savings plan, and three others indicated a plan was under construction. The responses about overall affordability to the SHEEO survey indicated that states are just beginning to comprehensively address that issue.

A 2003 publication of the NCPPHE reacted to the effects on affordability by the current recession and state budget cuts. Tuition hikes at public universities ranged

from 4.6% to 13%. Analysts warned that states are experiencing serious budget problems.

The NCPPHE again called for states to formulate policy based on thoughtful priorities. Callan (2003), writing for the NCPPHE publication, admonished states to consider four important principles: (a) Disproportionate budget cuts to higher education lead to higher tuition and hurt accessibility; (b) To protect access, tuition increases should be limited to what is necessary to assure institutional capacity to educate students; (c) Tuition increases must be accompanied by financial aid; and (d) The protection of low-cost higher education institutions must be prioritized as a safety net for low-income families during economic downturns.

As this compendium of policy analyses reveals, finance policy is an important role for state higher education coordination. The relationship among tuition, appropriations, and financial aid determines the affordability of higher education. The following subsections review literature associated with the individual aspects of affordability.

Tuition and Appropriations

Historically, states have supported public institutions of higher education through direct

appropriations to institutions. This source of funding continues to be among the highest financial resource for public higher education, providing more than \$50 billion dollars nationwide by the late 1990's (Hauptman, 2001).

The purpose of state appropriation had been to keep individual tuition costs to students at a minimum. By the early 1970's public opinion was suggesting a shift from primarily state support to a balance in cost sharing between the state and students. (Hauptman, 2001). Over the last 30 years, states have reduced their subsidies and tuition has risen (Heller, 2001).

The policymaking process of tuition setting often presents a paradox of ideology. Mumper (2001) suggested that since "tuition levels in each state are negotiated among many institutions through a process in which guidelines are regularly ignored, the perspectives of the individual participants inevitably shape the outcome. Yet, those participants may enter the negotiation with different assumptions and understandings of the dynamics that drive tuition rates" (pg. 43).

Peterson (1976) assessed environmental and political variables associated with state higher education appropriation. He used three secondary data sets of independent variables to determine their influence on state

appropriations: (a) state socioeconomic status, (b) state higher education environment, and (c) state politics. The dependent variable included appropriations in three categories of public higher education institutions, representing both per capita and per student expenditures: (a) all institutions, (b) four-year institutions, and (c) two-year institutions. A study of the literature provided Peterson (1976) with 20 independent variables and 12 measures of the dependent variable.

For each variable, he used Pearson correlation to see if a significant relationship existed between the variable and state appropriations. If the correlation was significant at the .05 level, Peterson (1976) used the variable in one of three multiple regression analyses representing each of the sets of variables. In each regression, he controlled for another set of variables to determine the independent contribution of the set in question. He also tested each variable measurement for 1960 and 1969.

Although the article did not contain complete regression information, tables provided information concerning the correlations and how they changed upon entry into a regression equation. In the analysis of socioeconomic variables, controlling for political

variables, Peterson (1976) found significance in these variables as predictors of per capita appropriations to all institutions: (a) industrialization in 1960 ($r = -.57, p < .05$) and 1969 ($r = -.28, p < .05$); (b) affluence in 1960 ($r = .51, p < .05$) and 1969 ($r = .48, p < .05$); (c) median school years in 1960 ($r = .50, p < .05$) and 1969 ($r = .48, p < .05$); and (d) college educated percentage in 1960 ($r = .28, p < .05$) and 1969 ($r = .40, p < .05$). He found significance in the same variables as predictors of per capita appropriations to four-year and two-year institutions individually with these exceptions: (a) the college educated percentage variable was not significant in relationship to four-year colleges; (b) the percentage of population college-aged was significant in 1969 for four-year colleges ($r = .31, p < .05$); and (c) the industrialization variable was not significant in relationship to two-year colleges.

The analysis for per student appropriations was significant for these variables: (a) industrialization in 1969 ($r = .52, p < .05$); (b) affluence in 1960 ($r = .33; p < .05$); (c) median school years in 1960 ($r = .33, p < .05$); (d) personal income in 1960 ($r = .39, p < .05$) and 1969 ($r = .53, p < .05$); (e) corporate income in 1969 ($r = .35, p < .05$); and (f) college educated percentage in 1960 ($r = .35,$

$p < .05$) and 1969 ($r = .48, p < .05$). The analysis for appropriations per student to four-year institutions yielded the same significant variables. The analysis for appropriations per student to two-year institutions yielded no significant variables.

In the analysis of higher education environment variables, controlling for socioeconomic variables, Peterson (1976) found significance in these variables as predictors of per capita appropriations to all institutions: (a) public school enrollment in 1960 ($r = .83, p < .05$) and 1969 ($r = .75, p < .05$); (b) two-year enrollment in 1960 ($r = .55, p < .05$) and 1969 ($r = .52, p < .05$); (c) four-year enrollment in 1960 ($r = .73, p < .05$) and 1969 ($r = .50, p < .05$); (d) private school enrollment in 1960 ($r = -.48, p < .05$) and 1969 ($r = -.36, p < .05$); (e) number of private institutions in 1960 ($r = -.40, p < .05$) and 1969 ($r = -.37, p < .05$); and (f) percentage of students in public schools in 1960 ($r = .74, p < .05$) and 1969 ($r = .58, p < .05$). The analysis for appropriations per capita to four-year colleges yielded the same significant variables. The analysis for two-year colleges showed the same significance, except the four-year college enrollment variable and the private school enrollment variable were not significant.

The analysis of appropriations per student for all institutions showed significance for these variables: (a) public school enrollment in 1969 ($r = -.28, p < .05$); (b) four-year enrollment in 1969 ($r = -.40, p < .05$); (c) number of private institutions in 1960 ($r = -.31, p < .05$); and (d) percentage of students in public schools in 1969 ($r = -.32, p < .05$). The analysis for per student appropriations to four-year schools yielded the same significant variables. The analysis for per student appropriations to two-year schools showed no significant variables.

In the analysis of political variables, controlling for socioeconomic variables, Peterson (1976) found significance in these variables as predictors of per capita appropriations to all institutions: (a) competition-turnout in 1960 ($r = .42, p < .05$) and 1969 ($r = .39, p < .05$); (b) legislative professionalism in 1960 ($r = -.35, p < .05$); and (c) centralization of decision-making in 1960 ($r = -.34, p < .05$). The analysis for per student appropriations to four-year schools yielded the same significant variables with these additions: (a) legislative professionalism in 1969 ($r = -.30, p < .05$) and (b) innovative legislation in 1960 ($r = -.29, p < .05$). The

analysis for per student appropriations to two-year schools showed no significant variables.

The analysis of appropriations per student for all institutions showed significance for these variables: (a) legislative professionalism in 1969 ($r = .46, p < .05$) and (b) legislative innovation in 1969 ($r = .29, p < .05$). The analysis for per student appropriations to four-year schools yielded the same significant variables with the addition of the governor's power in 1969 ($r = .33, p < .05$). The analysis for per student appropriations to two-year schools showed no significant variables.

The results of this study were the first to indicate political and environmental factors related independently to appropriations policies in higher education. Peterson (1976) concluded that policy makers were sensitive to the reactions of political constituents.

Coughlin and Erekson (1986) studied the determinants of state aid and voluntary support for higher education. They used secondary data from 52 major public and independent universities across six athletic conferences. One dependent variable was state appropriations per student. Other dependent variables were total voluntary support and voluntary support per student (a) for current

and capital costs and (b) by corporate and alumni donors. The unit of analysis was the individual institution.

The results of multiple regression analyses for prediction of state aid per student showed significant positive effects for (a) undergraduate quality ($b = .80$, $p < .01$); (b) relative tuition ($b = .88$, $p < .01$); (c) state tax effort ($b = .02$, $p < .05$); and (d) NCAA tournament appearance ($b = .63$, $p < .05$). Tuition had a significant negative effect on the dependent variable ($b = -.0008$, $p < .01$). The linear combination of the independent variables explained 76% of the variance in the dependent variable.

The results of the regression to predict the voluntary support per student from all sources showed significant positive effects for (a) SAT scores ($b = .004$, $p < .05$); (b) private school ($b = 1.56$, $p < .01$); and (c) athletic contributions ($b = .0003$, $p < .01$). The linear combination of these variables predicted 76% of the variance in the dependent variable.

The results of the regression to predict total voluntary support per institution from all sources showed significant positive effects for (a) SAT scores ($b = 55.14$, $p < .05$); (b) private school ($b = 16538.62$, $p < .01$); (c) student enrollment ($b = .78$, $p < .01$); and (d) athletic

contributions ($b = 4.54, p < .05$). The linear combination of these variables predicted 60% of the variance in the dependent variable.

St. John (1991) used case studies of the Minnesota and Kansas higher education system to examine policy strategies for resource management. These states represented purposive sampling of one state with tension among local institutions and state lawmakers (Minnesota) and one state with a positive relationship between the state and local institutions (Kansas).

St. John (1991) used interviews, document and database review, and site visits to develop this qualitative study. The data from these case studies allowed St. John to compare traditional strategic master planning against emerging issues in higher education resource management.

St. John (1991) found that state planning was based on both explicit and implicit higher education goals. Explicit goals included equity, quality, and economic development. One implicit goal common to both states was having propitious financial management in institutions.

A second observation provided by the case studies was the need for more coordination among five areas of strategy: (a) program and facility planning, (b) cost management, (c) institutional subsidies, (d) student aid,

and (e) enrollment management. St. John (1991) insisted that a comprehensive approach to policy would have to integrate these five arenas.

St. John (1991) also recommended awareness of and strategy to incorporate external intervening factors in higher education resources: (a) state tax revenues, (b) other state financial obligations, (c) federal financial strategies, and (d) other institutional revenue sources. While many of these were beyond the control of state higher education policymakers, they were important considerations in the policy process. Other exogenous factors having an influence on resources were (a) demographic trends, (b) economic conditions, (c) technological development, and (d) public attitudes.

St. John (1991) encouraged higher education policymakers to examine comprehensively their state financial resource policy strategy to ensure it encompasses the complete array of issues. He explained that many states have a default policy of incrementalism in higher education finance. He insisted that a comprehensive framework of evaluation for resource management issues would allow states to coordinate levels of tuition, state aid, educational expenditures, and state grants.

Gittell and Sedgley (2000) investigated the effects of higher education on the state economy by studying the relationship between state appropriation expenditures and high-technology employment. They discussed that theories of human capital and economic growth would suggest a positive relationship between expenditures for higher education and economic prosperity.

The dependent variable in this study was state economic performance measured by the percentage of high-technology employment in the state. The dependent variable was compared with the independent variable, state expenditures per full-time (FTE) student, on scatter plots with expenditures on the vertical axis and employment on the horizontal axis. The plot showed no significant relationship between 1996 FTE appropriations and high-technology employment. Gittell and Sedgley (2000) made these observations: (a) None of the four technology leaders is a leader in FTE appropriations; and (b) New Hampshire was the leading technology employer and ranked next to last in higher education expenditures.

Gittell and Sedgley (2000) tested the relationship of economic growth and expenditures over time with the average annual growth from 1976 to 1996 in state higher education

appropriations against 1996 high-technology employment. The results yielded no significant linear relationship.

The authors also tested the relationship between 1996 high-technology employment and the linear combination of higher education appropriations and appropriations growth from 1976 to 1996. They obtained their combination coefficients from an ordinary least squares regression. The scatter plot showed a negative relationship between spending and employment, but the researchers reported that the standard errors of the estimates and the t values were not statistically significant.

Gittell and Sedgley (2000) discussed complicating factors in determining linear relationships between higher education expenditures and economic growth. They identified these issues as (a) trade-offs in the state priorities of higher education, (b) density of higher education, (c) state economic and social environment, (d) state quality-of-life lures, (e) private institutions, and (f) student migration. These various situations all contributed to a complex relationship between state higher education and economy.

Lowry (2001) conducted a secondary analysis of data to determine what political and economic factors predicted state government funding and tuition for 428 campuses in 50

states. His data set included all public, four-year higher education institutions in the 50 states that had complete financial and enrollment information on the IPEDS and that were classified by *U.S. News and World Report* as a national or regional university.

His dependent variables were the dollar amount of state government appropriations, grants and contracts per 100,000 voting-age residents in the state and net tuition and fee revenues per 100,000 voting-age residents in the state. His predictor variables for government funding were various measures of (a) state government resources, (b) state political interests, (c) enrollments by student categories at individual campuses, (d) public outputs at individual campuses, (e) qualitative attributes of individual campuses that may affect legislators, (f) cost of inputs at individual campuses, and (g) additional revenues at individual campuses. His predictor variables for tuition and fees were (a) financial autonomy of state campuses, (b) enrollments by student categories at individual campuses, (c) student willingness to pay for instruction, (d) cost of inputs at individual campuses, and (e) additional revenues at individual campuses.

Lowry (2001) analyzed the data in *Stata* using two-state least squares regression. The results of this study

concerning government funding included that (a) government funding was higher in states with more tax revenues, (b) funding was affected by political factors, and (c) public goods targeted to specific state constituencies were funded higher than broadly targeted goods. The specific political factors affecting government funding included (a) the number of higher education governing boards, (b) the fraction of voting-age population 65 years or older, and (c) private college enrollment. Total variance in the dependent variable explained by all the independent predictors was 94% ($R^2 = .942$).

The results of this study concerning tuition and fees included that net tuition and fees were (a) higher in states where campuses have more local autonomy, and (b) higher in states with high per capita income. Total variance in the dependent variable explained by the independent variables was 95% ($R^2 = .948$).

Berger and Kostal (2002) analyzed the supply and demand factors determining enrollment in public higher education. They studied 1990-1995 secondary data from 48 US states.

The researchers developed a model to predict the demand for enrollment with these predictor variables: (a) public school tuition, (b) average wage of production

workers, (c) private school tuition, (d) medium household income, (e) the wage ratio between production and non-production workers, (f) the unemployment rate, (g) the percentage of population 25+ with at least a bachelor's degree, (h) the ratio of non-white people in the population, and (i) the percentage of urban population.

The supply model had these predictor variables: (a) public school tuition, (b) amount of state appropriations to higher education, (c) additional revenue of public institutions, (d) average faculty salaries in public institutions, (e) the degree of administrative flexibility, (f) the degree of academic flexibility, (g) the number of public institutions per 100,000 people between age 18 and 24, and (h) the percentage of the ages 18-24 population enrolled in private institutions.

Berger and Kostal (2002) used two-stage least squares analysis to determine the significance of the independent variables in predicting enrollment supply and demand. The first equation yielded these significant variables for demand: (a) public school tuition ($\beta = -.0063$, $p < .01$); (b) average wage of production workers ($\beta = .00058$, $p < .01$); and (c) the percentage of population 25+ with at least a bachelor's degree ($\beta = .91969$, $p < .01$). The equation for supply yielded these significant predictor

variables: (a) state appropriations ($\beta = .00513, p < .01$); (b) other revenue ($\beta = .00411, p < .01$); (c) medium administrative flexibility ($\beta = -4.14813, p < .01$); (d) high administrative flexibility ($\beta = -4.81235, p < .01$); (e) medium academic flexibility ($\beta = 4.67350, p < .01$); and (f) high academic flexibility ($\beta = -2.72733, p < .05$).

Using the results of the equation, Berger and Kostal (2002) simulated three policy scenarios to determine how they affected enrollment. The first policy scenario involved higher tuition and constant state appropriations. The results of that situation indicated that the demand-side of enrollment would decrease by five percent.

The second scenario was higher tuition and lower state appropriations. This situation resulted in a decrease in demand-side enrollment by three percent.

The third scenario compared state appropriations and state regulation. The results indicated that state regulation on budgetary matters allowed appropriations to drop by 61% and maintain constant enrollment levels.

Berger and Kostal (2002) summarized that higher education enrollment tends to decrease as tuition increases and state appropriations decrease. They also concluded that states who must lower appropriations due to budgetary constraints may maintain current enrollment if the state

government exercises more rigid regulation over its institutions.

The relationship between tuition and state appropriations is complex and, as the previously reviewed literature demonstrated, highly subject to many political, social, and environmental variables. Policy researchers have indicated a possible shift in ideology from a service approach to education, maintaining low tuition rates and directing funds to institutions, toward a market approach, providing majority funding directly to students.

Sontheimer (1994) even called for states to remove direct subsidies in favor of direct aid. He theorized that this arrangement of privatizing higher education would actually create a more efficient system and would optimize choice. The following subsection presents literature and empirical studies related to the variables and effects of direct student aid.

Direct Student Aid

Not only do states financially support education through direct appropriations to institutions, but they also provide support by direct funds to students. Heller (2001) reported that financial aid to students has grown in the amount of money available and the number of students receiving it. In the period between 1971 and 1998, college

enrollment grew 60 percent and financial aid from state, federal and institutional sources grew 723 percent.

Several issues are important in examining the affordability of college. The price charged by colleges, the amount of available aid, and the family ability to pay must be examined together to determine affordability (Heller, 2001).

As tuition prices continue to rise, researchers have begun to look for policies that link tuition and direct aid to students. Griswold and Marine (1996) examined five states to see if or how they linked policies for tuition and aid.

Griswold and Marine (1996) conducted case studies of two states with explicitly linked tuition and aid policies (Minnesota and Washington) and three states with no formal linkage (New York, Massachusetts, and California). The authors analyzed policy proposals, research, and state newspaper articles, and they conducted interviews with state policymakers to collect data for their study.

To provide context for their study, Griswold and Marine (1996) explained that political players often are torn between the unpopular decisions of raising tuition or raising taxes to support higher education. In some states,

politicians choose the apparent lesser evil of rising tuition, since it ultimately affects fewer votes.

Griswold and Marine (1996) found evidence in Minnesota and Washington of reactionary increases due to economic and political factors. Tuition levels rose without consistent rational planning to account for the increases and without sufficient aid to counteract the effects of rising tuition. In the three states with compatible policies, tuition levels also rose, but policy was in place to partially alleviate financial hardships.

The authors discussed several implications for their research: (a) When states did not coordinate tuition and aid policies, they threatened the equity of opportunity for higher education; (b) financial distress was seemingly the largest motivator of change within the states; and (c) Garnering support and constructing implementation of a higher-tuition/higher-aid policy strategy may be difficult for politicians.

Hearn, Griswold, and Marine (1996) tested the effects of certain regional and policy variables on levels of tuition and student aid. They used a theoretical framework to construct a hypothesis that postsecondary tuition and aid approaches were a function of (a) ideologies associated with a particular part of the country; (b) social and

economic conditions in a state; and (c) the governance framework whereby states structure their postsecondary policy decision making.

The two research questions for this study addressed (a) the ways that postsecondary financing policies were associated with the 13 independent variables and (b) which state characteristics were most closely associated with financing policy. Of particular interest to these researchers was the policy strategy of high/tuition-high/aid. Four secondary data sources provided the information for 50 states.

The six dependent variables for the study were (a) tuition in 4-year public institutions, (b) tuition in 2-year public institutions, (c) tuition differential favoring students in 2-year institutions, (d) per-capita state student aid, (e) average tuition in public institutions, and (f) index of tuition/aid rationalization. The authors explained that the differential variable represented state priority in making two-year institutions an entry point, and the rationalization variable represented state policy combining high tuition with high aid or low aid with low tuition.

Six two-way analyses of variance (ANOVA) provided group mean differences for each of the dependent variables.

Significant group differences were found for (a) four-year tuition in regions and governance, (b) two-year tuition in regions, (c) tuition differential in regions, (d) average tuition in regions and governance, (e) per capita aid in regions, and (f) rationalization in regions.

Hearn, Griswold, and Marine (1996) used four separate multiple regressions for each dependent variable for a total of 24 regression analyses. For each dependent variable they tested the predictive power of (a) each of four regions, (b) five resource variables and four governance variables, (c) a full model combining the region and governance variables, and (d) a best fit model with all variables in a backward entry method.

The results of the analysis for the best fit regression model predicting four-year tuition showed significance for (a) the Northeast region ($\beta = .49, p > .001$), (b) the Midwest region ($\beta = .24, p > .01$), and (c) the Southwest region ($\beta = -.25, p < .05$), (d) planning agency governance ($\beta = .25, p < .05$), and (e) the complete regression model ($adj. R^2 = .51, p < .001$). The results of the analysis for the best fit regression model predicting two-year tuition showed significance for (a) the Northeast region ($\beta = .32, p < .05$); (b) the Midwest region ($\beta = .37, p < .001$); (c) average disposable income ($\beta = -.41, p <$

.01); (d) population percentage with a high school education ($\beta = .28, p < .01$); (e) reliance on public postsecondary system ($\beta = -.43, p < .01$); (f) a weak coordinating board ($\beta = -.29, p < .01$); and (g) the regression model (*adj. R*² = .63, $p < .001$).

The results of the best fit regression model predicting the tuition differential showed significance for (a) the Midwest region ($\beta = -.34, p < .01$); (b) average disposable income ($\beta = .53, p < .001$); (c) population percentage with a high school education ($\beta = -.40, p < .01$); (d) reliance on public postsecondary system ($\beta = .57, p < .001$); (e) a weak coordinating board ($\beta = .33, p < .01$); (f) a planning agency ($\beta = .28, p < .05$); and (g) the regression model (*adj. R*² = .36, $p < .001$).

The results of the best fit regression model predicting average tuition showed significance for (a) the Northeast region ($\beta = .39, p < .001$); (b) the Midwest region ($\beta = .30, p < .001$); (c) the Southwest region ($\beta = -.25, p < .05$); (d) average disposable income ($\beta = -.31, p < .01$); (e) reliance on the public postsecondary system ($\beta = -.44, p < .001$); (f) a strong coordinating board ($\beta = .20, p < .05$); and (g) the regression model (*adj. R*² = .66, $p < .001$).

The results of the best fit regression model predicting per-capita student aid showed significance for (a) the Northeast region ($\beta = .28, p < .05$); (b) the Southeast region ($\beta = -.31, p < .01$); (c) the Southwest region ($\beta = -.37, p < .01$); (d) state population ($\beta = .50, p < .001$); and (e) the regression model ($adj. R^2 = .44, p < .001$).

The results of the best fit regression model predicting tuition/aid rationalization showed significance for (a) the Northeast region ($\beta = .28, p < .05$); (b) the Southeast region ($\beta = -.35, p < .01$); (c) the Southwest region ($\beta = -.42, p < .42$); (d) state population ($\beta = .31, p < .05$); and (e) the regression model ($adj. R^2 = .59, p < .001$).

Hearn, Griswold, and Marine (1996) summarized that region was the variable most associated to state tuition and aid policy. Further research could clarify what characteristics of regions most predicted policy. This research also elucidated the role of governing boards. More decentralized structures were associated with higher tuition rates. Finally, the authors concluded that aid policies and tuition policies were only slightly associated. According to this research, states have not developed integrative aid and tuition policies.

Hossler (1997) and colleagues studied state higher education financing for correlates between student aid and tuition. They described the current policy environment of higher education funding to examine (a) the extent to which state demographics, resources, and politics explain allocation decisions, (b) how various state policies are related, and (c) trends associated with state higher education characteristics and state economic health.

The researchers used secondary data, survey results, and telephone interviews in their study. National databases provided information about higher education governance, state economic conditions and political variables for all 50 states. Two surveys, one to state aid directors and one to state higher education executive officers (SHEEOs), provided information on financial aid policies, appropriations, tuition policies, and state policy goals. In-depth telephone interviews with SHEEO's, state aid directors, other policymakers, and analysts from Oregon, Washington, and Indiana helped the researchers extend the results of the quantitative analyses.

Hossler (1997) used regression analyses, exploratory factor analysis, and frequency distributions to examine relationships among the state characteristic variables and various funding policies in the states. In the multiple

regressions, the researchers sought predictor variables to explain (a) levels of state appropriations to schools, (b) levels of state appropriations to financial aid, (c) dominant political values in states, and (d) links between policy goals and appropriations.

The results of each analysis were similar. There were few predictors or relationships between or among the research variables. The only significant predictor variable for levels of state appropriation was previous levels of state appropriation.

Hossler (1997) discussed the possibility that a market-model for higher education allowed policymakers to decrease funding, envisioning a high-tuition/high aid approach. He maintained that the results of this study indicated a mythical reality, because state strategy for student aid did not relate to tuition increases. He explained that the problem for state policymakers "is that we have reached a point in our history at which higher education has become viewed as a universal right at the very moment when the rising costs of higher education and state and federal budget constraints appear unable to support the expectations of the American public" (p. 182). Hossler (1997) called for policy discussion and research

among all the key players in the higher education arena, including state and local level administrators.

A study by Alexander (1998) analyzed patterns of direct student aid appropriations among states to determine if a philosophical shift in higher education funding had occurred at the state level. He used a longitudinal comparative analysis of frequencies and percentages associated with direct student aid in 50 states. Variables studied were (a) state direct student aid grant program resources as a percentage of state appropriations for selected states; (b) number of states establishing direct student aid programs; (c) average state need-based grant program awards to students in public institutions; (d) average state need-based grant program awards to students in private institutions; (e) state dollars spent on need-based student aid versus merit-based aid programs; and (f) percentage point change in lower-income freshman as a share of all freshman population in public and private institutions.

Alexander (1998) explained the evolution of appropriations granted directly to students against funding given to an institution. The introduction of direct student aid was through the G.I. Bill after World War II. In the succeeding years, federal policy shifted more toward

direct student aid, also known as vouchers, and consequently, began to affect higher education funding at the state level. Initial justification for vouchers was to expand educational opportunities and to provide lower-income students with high quality educational choices at private institutions.

The results of this study suggested that state direct student aid programs were a growing proportion of all state funding for higher education. State direct student aid grant program resources as a percentage of state appropriations for states ranged from less than 1% in Hawaii to 22.4% in New York. The United States average was 6.6%. The ratio of need-based student aid to merit-based student aid steadily reduced from \$7.53/\$1 in 1981 to \$5.66/\$1 in 1996.

Average state need-based grant program awards to students in private institutions ($M = \$833$ in 1976; $M = \$2,015$ in 1996) was consistently higher than average state need-based grant program awards to students in public institutions ($M = 439$ in 1976; $M = \$1,268$ in 1996). The percentage point change in lower-income freshman as a share of all freshman population between 1975 and 1996 increased for public two-year institutions by 3.5%, increased for public four-year institutions by 4.6%, decreased for

private two-year institutions by 1.8%, and decreased for private four-year institutions by 1%.

These statistics led Alexander (1998) to conclude that a disparity existed between direct student aid expenditures for students attending private and public colleges, and that lower-income student access to private colleges had not grown. He defined the statistical results as a "shortchange" for public higher education.

The ramifications of funding sources and amounts exceed the issue of affordability (Zusman, 1999). As this literature review unfolds, research and analyses will demonstrate the broader social effects of funding policies and strategies. One of these broader concerns is access, the opportunity for diverse ethnicities and social classes to participate in higher education. The next subsection presents empirical studies associated with funding and access.

Funding and Access

Access to higher education has long been an explicit goal of American society (Benjamin & Carroll, 1998; Callan, 1991), but the definition of access has encompassed many dimensions (Eaton, 1997). Eaton described five areas of access important in various historical periods of public higher education: (a) financial accessibility,

(b) accessibility for the academically under-prepared (c) minority accessibility, (d) geographic accessibility, and (e) accessibility for prospective but uninformed students.

In an essay tracing the evolution of access policy, Eaton (1997) explained that geographical access was an early priority dating back to the Colonial period of American history. Government and higher education leaders strove to provide local institutions to an ever-expanding geographic landscape.

After World War II, the GI Bill introduced and provided for a broad value in financial accessibility. President Truman's Commission on Higher Education (1947) reported the need to provide higher education to all social classes, "If college opportunities are restricted to those in the higher income brackets, the way is open to the creation and perpetuation of a class society which has no place in the American way of life" (vol. 2, p. 23).

The Civil Rights Act of 1964 and the Higher Education Act of 1965 opened the door for minorities and low-income families to fully participate in higher education. As a result, more underrepresented populations sought education for professional and skilled employment (Heller, 2001).

Contemporary American culture ostensibly requires higher education for any lifestyle above poverty (Callan,

1999; Hunt, 2000). The knowledge-based, technological economy of contemporary American society demands fewer unskilled laborers and more highly educated employees. According to Callan (2001), "If opportunity is broadly defined as the chance to participate fully in society, higher education has become the only road to opportunity for most Americans" (p. 85).

Alexander (2000) discussed quality effects of the new accessibility demands. He reasoned that:

Governments see higher education as a product that ensures economic growth. Universities, once portrayed as cultural training grounds for young minds, have become major agents for government investment in human development...in this environment, higher education is viewed as a vehicle to increase the stock of human capital that enables more competition in world markets. (p. 415)

According to Alexander, the effect of this "massification" is increased pressure on both universities and state policymakers to allow greater accessibility while still improving educational quality and performance.

Congress established the Advisory Committee on Student Financial Assistance in 1986 to provide independent advice and counsel on student financial aid policy. The

committee's primary focus is improving access. In a 2001 report to Congress, the committee found three factors that threatened higher education access: (a) shifting priorities of policymakers from low-income to middle-income affordability; (b) growing unmet financial need for low-income students; and (c) decisions by low-income students to work long hours, attend college part-time, and take large student loans. The committee recommended that Congress should (a) recommit to the goal of affordability for all Americans; (b) increase need-based aid; and (c) revitalize state, campus, and federal partnerships in support of access.

Several policy analysts have admonished officials on the increasing difficulty of minorities and lower socioeconomic classes to afford higher education (Hauptman, 1997; Zusman, 1999; Callan, 2001). Callan (2001) explained that universal access has been an important national priority; but, opportunities of access are declining due to financial policies that have not accounted for long-term participation implications.

St. John (1999) tested the association between state student aid and persistence in a study of Washington institutions and state grant policies. He controlled for student background variables, income, achievement, college

characteristics and experiences to test how increases in Washington grant money affected student persistence in 1991, 1992, and 1993.

St. John (1999) used a logistic regression analysis for each of the three test years to determine the likelihood of a student to continue in school. In 1991, these variables had a positive effect on persistence: (a) high income family, (b) having an "A" average in high school, (c) full-time enrollment, and (d) sophomore and junior years in college. These variables had a negative effect on persistence: (a) age; (b) being African-American, Hispanic, or Asian-American; (c) having less than a "C" high school grade average; and (d) attendance at a comprehensive university. In addition, these financial aid variables were significantly related to persistence in 1991: (a) having a grant/loan package ($\Delta-p = .04, p < .01$) and (b) having a grant/loan/work package ($\Delta-p = .06, p < .01$).

From the fall of 1991 to the fall of 1992, the average grant award in Washington increased by \$74, the average loan increased by \$250, and the average tuition charge increased by \$80. The results of the logistic regression for 1992 showed being Hispanic or Asian-American was not

significantly related to persistence as it had been in 1991. Other variables had similar results.

From the fall of 1992 to the fall of 1993, the average grant award in Washington increased by \$430, the average loan increased by \$1230, and the average tuition charge increased by \$233. The results of the logistic regression for 1993 showed no significant effect for ethnicity in persistence. In addition, all forms of financial aid packages had a significant positive effect for persistence: (a) grant only ($\Delta-p = .04, p < .01$); (b) loan only ($\Delta-p = .04, p < .01$); (c) loan/work ($\Delta-p = .08, p < .10$); (d) grant/loan ($\Delta-p = .06, p < .01$); (e) grant/work ($\Delta-p = .05, p < .05$); and (f) grant/loan/work ($\Delta-p = .07, p < .01$).

St. John (1999) offered this research as an example of a successful model of state evaluation of grant program effects. He also maintained that the results of this study demonstrated the association between state aid and the opportunity for minority students to persist. Finally, he advocated similar studies for all states to examine whether their tuition policies and aid policies were coordinated sufficiently.

St. John, Hu, and Weber (2001) used the same logistical regression methodology and analytical model to examine the effects of financial aid packages on student

persistence in Indiana. Several factors in the policy strategy of Indiana differed from Washington: (a) Aid package composition changed over time reflecting a greater reliance on loans; (b) total grant awards increased over time but did not keep up with rising tuition; and (c) state grants increased to account for decreased federal grants.

As in his 1999 study of Washington, St. John (2001) found that student background variables and college experience variables affected persistence among college students, but financial aid packages reduced the effects of student background and college experience variables. The aid packages provided students of minority backgrounds an equal opportunity for persistence as Whites.

He also found a disconnection between federal and state policy strategy and between state tuition and aid policy strategy. He called for more coordination between and among these structures.

In a complementary study, Hu and St. John (2001) used the same data base and analytical model but disaggregated the data to study individual effects for African American and Hispanic students comparable to White students. The researchers also stratified the sample in each ethnic group by four socioeconomic levels. The purpose of this study was to understand the persistence trends and factors

related to these particular ethnic groups by social level and year.

The results for African American students revealed (a) a decline in persistence over time and (b) increased efficacy in financial aid packages. In addition, these variables had a significant positive relationship to persistence in 1996-97: (a) junior status ($\Delta-p = .053, p < .001$) and (b) senior status ($\Delta-p = .096, p < .001$). These variables had a significant negative association with persistence: (a) age ($\Delta-p = -.008, p < .001$) and (b) GPA ($\Delta-p = -.434, p < .001$).

The results for Hispanic students revealed (a) a decline in persistence over time, (b) increased persistence by year in school, and (c) increased efficacy in financial aid packages. In addition, these variables had a significant negative relationship to persistence in 1996-97: (a) being male ($\Delta-p = -.059, p < .01$); (b) age ($\Delta-p = -.007, p < .05$); (c) having a GPA below C ($\Delta-p = -.317, p < .001$).

The results for White students revealed (a) a very slight decline in persistence over time, (b) increased persistence by year in school, and (c) a small increase in efficacy in some financial aid packages. Age ($\Delta-p = -.005,$

$p < .001$) and low GPA ($\Delta p = -.366$, $p < .001$) had a significant negative relationship with persistence.

Hu and St. John (2001) concluded that the persistence rates between various ethnic groups compared with the effects of their financial aid packages showed Indiana's success in maintaining persistence by ethnic groups. The researchers maintained that adequate financial aid is necessary to sustain enrollment by minority groups. Further, they questioned the policy of high tuition/high aid in sustaining levels of enrollment by all ethnic groups.

Paulsen and St. John (2002) examined the financial relationship between college choice and persistence by members of different races and social classes. They departed from traditional developmental and change models to further develop a financial nexus model to examine persistence. They posited that college choice and persistence were highly influenced by diverse student perspectives formed by experiences of race and social class.

Using secondary data from a national database of more than 25,000 students, the researchers conducted logistic regression to determine the effects of student backgrounds, college costs and college experience on persistence of

students from four income levels. Paulsen and St. John (2002) conducted three regressions for each income level: (a) an initial model including background, perception and expectation variables; (b) a second model adding fixed cost variables of tuition and financial aid; and (c) a final model accounting for controllable costs of housing and food. Every complete model was statistically significant.

The results of this study indicated significant effects for class differences in student choice and persistence. Paulsen and St. John (2002) reported these significant findings:

1. Lower-income students were not as likely as higher-income students to attend private colleges or four-year colleges, to enroll full-time, or to live on campus.

2. Lower-income women were less likely than men to persist.

3. Lower-income students who had GED's were more persistent than lower-income students with high school diplomas.

4. African-American students in lower and lower-middle income groups were more persistent than whites in the same groups. The opposite was true in middle and upper-middle class groups.

5. Lower-income students were more likely to attain A grades than middle and upper-class students, but their attainment aspirations were lower.

Paulsen and St. John (2002) also reported class-based enrollment patterns related to student perceptions of college costs. Middle and upper-class students showed better persistence by choosing colleges based on low tuition and/or high aid. Lower and lower middle-class students showed better persistence when they chose schools based on controllable costs of food and housing. Loans and work-study aid showed negative effects for the persistence of lower-class students.

Paulsen and St. John (2002) offered these results as important policy considerations regarding non-traditional students and the coordination of financial aid and college costs. They insisted, "the high-tuition, high-loan approach to higher education finance does not appear to be working" (p. 230).

As demonstrated in many of these empirical studies, and explained by Callan (2001), the affordability of higher education is closely linked to the opportunity of access to various social groups. St. John, Kline, and Asker (2001) extended the call to states to include accountability

measures that examined quality in terms of access even to the detriment of efficiency.

Analysts often define affordability, access, and quality as the three most important issues in contemporary higher education analysis (Heller, 2001). As seen in this section of review, these are difficult goals to pursue in tandem. Obtaining balance among the three worthy pursuits often produces tension among the various players in higher education policy and practice (Zusman, 1999). One policy strategy attempting to coordinate state goals in higher education is performance funding.

Performance Funding

Performance funding is a state policy to link some amount of state appropriations to goals achieved by higher education institutions. Alexander (2000) proposed that states have made a fundamental shift in ideology about the purpose of higher education. He explained, "universities, once portrayed as cultural training grounds for young minds, have become major agents for government investment in human development" (p. 415). As a result, state lawmakers are tying appropriations to quantitative evidence, performance-based quality, and utilitarian goals.

Tennessee was the first state to implement a performance-funding program in 1979 and was continuing to

use this policy after four revisions. Banta, Rudolph, Van Dyke, and Fisher (1996) studied the efficacy of Tennessee's higher education performance funding policy.

The authors gathered data for their study through a survey of 23 campus performance coordinators. The survey was distributed by mail and returned from all participants for a 100% response rate. The participants represented all 23 of Tennessee's public colleges and universities, including four technical institutes, ten community colleges, six comprehensive universities, and three campuses of the University of Tennessee (UT). The survey had been piloted previously on four campuses to test for validity and reliability.

The 1993-1997 version of the performance funding policy consisted of ten quality standards: (a) accreditation, (b) major field tests, (c) measurement of general education outcomes, (d) alumni and enrolled student surveys, (e) improvement actions taken to remedy identified weaknesses, (f) peer review of non-accreditable undergraduate programs, (g) master's program reviews or placement, (h) enrollment goals for campus-specific groups, (i) persistence to graduation minority and all students, and (j) mission-specific objectives. Directions in the survey asked participants to assess each standard based on

(a) the standard's measurement of higher education quality, using a 5-point, academic scale (A = *outstanding measurement*, F = *poor measurement*); (b) whether the standard affected institutional improvement, using a three-choice response (*yes, no, or too soon to tell*); (c) what the most helpful aspects of the standard's application were on their campus, using open-ended responses; and (d) how the respondent would change the standard to make it more helpful, using open-ended responses.

The responses on this survey showed campus performance coordinators gave five performance standards a B-minus or higher as a measurement of higher education quality: (a) peer review of undergraduate programs ($M = B+$); (b) master's reviews or placement ($M = B+$); (c) accreditation ($M = B$); (d) improvement actions ($M = B$); and (e) student and alumni surveys ($M = B-$). The same standards, plus major field tests, were perceived by more than 50% of the respondents to be effective in promoting institutional improvement.

Responses to the survey led Banta, Rudolph, Van Dyke, and Fisher (1996) to conclude that Tennessee's performance-funding policy was responsible for several positive outcomes at state higher education institutions. They further summarized that the Tennessee policy, as

implemented, had become an attractive motivation for continuous evaluation and improvement over the fifteen years of its existence.

Serban (1998) conducted a survey and reported descriptive results of state and campus policymaker opinions and attitudes about performance funding. A panel of experts helped develop and revise a survey instrument mailed to higher education state policy makers and various campus representatives ($N = 1,813$). After a follow-up mailing, 918 individuals had returned completed surveys for an overall response rate of 50.6 percent. Serban (1998) did not include legislators and system governing board chairs due to a low response rate.

Directions in the survey asked respondents to react to performance funding issues in general and in relation to their state. Questions included elements such as purpose of performance funding programs, values reflected in the programs, performance indicators, funding levels, and sources of funding. Questions also explored operational issues of performance funding like participation in development of the program, planning and implementation, advantages and disadvantages, effectiveness, methods of improvement and future prospects.

Serban and Burke (1998) used information from the survey to further explore performance funding. Using the 1996 survey, they conducted a comparative analysis of nine states to investigate the opinions and attitudes of higher education individuals involved in designing and/or implementing their performance funding policy. The nine states had adopted performance funding in one of three categories: (a) mandated by the state legislature with prescribed implementation and/or indicators; (b) mandated by the state legislature with flexibility and coordination for implementation and assignment of indicators; or (c) not mandated by the state but adopted, designed and implemented by higher education coordinating boards.

Serban and Burke (1998) categorized survey responses based on literature's discussion of the primary goals of performance funding: (a) increased accountability, (b) quality in higher education, (c) state funding, and (d) improved public perceptions of higher education. They also separated responses among (a) the governors' offices, (b) members of higher education coordinating agencies, (c) state system administration officers, and (d) senior campus officers.

The results of the analysis concerning potential for performance funding to accomplish its goals varied among constituents:

1. A majority of state-level stakeholders viewed performance funding as having positive potential to impact higher education quality, accountability, funding and public perception. Overall percentages of positive responses for governors' offices was 56%, for coordinating agency officers was 58%, and for system administration officers was 52%.

2. A majority of campus-level administrators reported an undecided or negative opinion of performance funding's potential to achieve its goals. Forty-eight percent of campus respondents were undecided, 11% had a negative opinion, and 41% had a positive opinion.

Serban and Burke (1998) concluded from the responses and the divergent attitudes that more communication between state and campus officials would have been beneficial to performance funding policy. The researchers observed that increased accountability and local institutional improvement were complementary when credibility and trust had been established across constituent levels.

Performance funding across different states have had mixed results. Burke and Modarresi (2000) used information

from a 1996 survey of state and campus officials from nine states to identify characteristics that separate states with stable or unstable higher education performance funding programs. Since the time of the survey, four states (i.e., Arkansas, Colorado, Kentucky, and Minnesota) had dropped performance funding. The authors labeled these as unstable states. Two states, Missouri and Tennessee, retained strong performance funding programs. The authors labeled these as stable states. Three states, Florida, Ohio, and South Carolina, maintained performance funding, but Burke and Modarresi (2000) deemed the programs to be uncertain and controversial. They did not use these three states in their analysis.

Burke and Modarresi (2000) used literature to hypothesize 11 characteristics of stable performance funding programs: (a) collaboration among governors, state coordinating boards, and campus officials; (b) goals of institutional improvement, external accountability, and increased state funding; (c) policy values stressing quality over efficiency; (d) sufficient time for planning and implementation; (e) optimum number of performance indicators; (f) success standards emphasizing institutional improvement with peer comparisons; (g) restricted but substantial funding; (h) additional, not reallocated,

funding; (i) protecting mission diversity and campus autonomy; (j) stability of state programs and requirements; (k) prospects for a positive future. These 11 standards, operationalized by survey responses, were the independent variables entered into a discriminant analysis procedure. Dependent variables were the two groups of stable and unstable programs.

Results of the discriminant analysis differentiated the independent variable responses between the stable and unstable groups. The mean scores suggested significant differences between the two groups, confirming most of the researcher's hypotheses. Specifically, stable and unstable groups differed the most on achievement of performance funding goals, importance of stakeholder input, choice of performance indicators, and future potential.

The effectiveness of performance funding and quality is an important consideration. When states use performance funding and performance indicators, they assume a linkage between the motivation for institutions to improve and the amount of government funding they receive.

Brown (2000) examined the relationship between higher education faculty quality and institutional funding sources. The dependent variable, teaching quality, was operationalized by student ratings of faculty quality and

faculty accessibility as reported in a national publication. Independent predictor variables were various sources of funding for higher education institutions as reported by the U.S. Department of Education.

Separate multiple regression analyses using first the faculty quality rating and then the faculty accessibility rating as dependent variables provided information on how sources of funds predicted faculty quality. The results indicated that state and federal government funding significantly predicted teaching quality variables in a negative direction ($\beta = -11.76$, $p < .05$ for state; $\beta = -37.77$, $p < .05$ for federal). Private giving and endowment income predicted teaching quality in a positive direction ($\beta = 25.25$, $p < .05$ for private giving; $\beta = 16.62$, $p < .05$ for endowment income). Funding sources accounted for 69% of the variance in faculty teaching quality ($R^2 = .691$) and faculty accessibility ($R^2 = .688$).

Brown (2000) addressed the implications of these results on public policy. He suggested that increased educational subsidies may not increase educational quality, but that increased government funding may provide more access and enhance basic research. Once again, literature demonstrated the awkward relationship among pursuits of access, quality, and funding.

As states coordinate the goals of higher education, they strive to determine suitable means and measures of academic quality. Assessment, accountability, quality, and performance are all terms used to measure the effectiveness of higher education at meeting explicit and implicit goals. The next subsection profiles research associated with higher education performance.

Performance

Performance funding is only one aspect of addressing the rising issue of accountability in higher education. Ruppert (1998) reported the increasing interest by states of pursuing results-oriented accountability procedures for colleges and universities. She emphasized the new consumer mentality of the public and encouraged institutions to consider the needs and wants of various stakeholders, including legislators, students, and business leaders.

Heller (2001) expressed the new focus on accountability in higher education as a result of rising scrutiny from business, government, and students who demand evidence that their money is well spent. Even as the perspective of performance broadens, states vary on their approaches to achieve progress in quality.

Every method of measuring quality begins with a discussion of how quality is measured. States must choose

what performance indicators will be included in assessment and which indicators will be deleted.

Schmitz (1993) analyzed the validity of indicators of higher education quality utilized by *U.S. News and World Report* (USN&W) describing academic quality of undergraduate programs. The secondary analysis included data from four categories of higher education institutions: (a) national universities and colleges ($n = 189$); (b) national liberal arts colleges ($n = 135$); (c) Midwestern regional liberal arts colleges ($n = 130$); and (d) Northern regional universities and colleges ($n = 141$).

The predictor variables were input indicators for higher education (i.e., acceptance rate, mean entrance test scores, and class standing); process indicators (i.e., faculty/student ratios, faculty background, and instructional budget); outcome indicators (i.e., retention and graduation rates); and two neutral variables (i.e., percentage of male students and cost of room and board). The criterion variable was reputation score collected by USN&W through an annual survey sent to college presidents, academic deans and admissions officers. These university officials ($N = 3,900$) assessed the reputation of schools from their own institutional categories. The lowest response rate, 56%, was from national universities, and the

highest response rate, 74%, was from national liberal arts colleges.

Schmitz (1993) tested the convergent validity of the quality indicators by observing the relationships among all variables using Pearson correlation coefficients. She used a minimum Pearson correlation coefficient ($r = .40$) to determine intercorelations among the indicators within each institutional category

Schmitz (1993) tested the relationship of input to outcome indicators and the divergent validity of the indicators with a stepwise multiple regression for each institutional category. The input, process and neutral indicators were predictor variables and the outcome indicators were criterion variables.

Finally, she tested the generalizability of the indicators by analyzing each of the regressions against the regressions for other categories. The amount of variance accounted for in a single regression comparable to the amount of variance in another regression indicated the strength of prediction for each institutional category.

The results of this study indicated differences in the validity of various indicators to predict higher education quality according to institutional category. Indicators were highly correlated within the national categories, but

were not highly intercorrelated for the regional categories.

The validity of input and process indicators as predictor variables for retention rate was stronger for national categories ($R^2 = .53$ and $.52$) than it was for regional categories ($R^2 = .23$ and $.29$). The indicators were stronger predictors of graduation rate for national categories ($R^2 = .32$ and $.50$) than they were for regional categories ($R^2 = .12$ and $.22$). Finally, indicators were stronger predictors of reputational score for national categories ($R^2 = .64$ and $.84$) than they were for regional categories ($R^2 = .38$ and $.47$).

The results of this study did not demonstrate clear discriminant relationships among indicators paired with neutral variables. Both gender and room and board showed statistically significant correlations and prediction of criterion variables. These results suggest that either these variables were not neutral, as presumed, or the indicators of quality were not discriminant.

Schmitz (1993) reported the limitations and criticism of reputational ratings to determine higher education quality. Reputational scores are subject to halo effects and alumni bias. Schmitz (1993) concluded that quality is a multifaceted construct to measure. She suggested that

future research continue to seek alternative measures of quality for various categories of institutions.

Donald and Denison (2001) compared student perceptions of student quality to student performance indicators identified by administrative and faculty stakeholders. The researchers distributed a questionnaire to 400 students at a major university who were enrolled in four undergraduate programs. The survey asked for student background information about gender, program of study, and year of study. The survey also listed 25 student quality criteria and asked students to respond to each criterion using a 5-point, Likert-type scale as to its importance for student quality (1 = *not at all important*, 5 = *extremely important*). The Spearman correlation between student and other stakeholder ranks of importance was .71, $p < .001$.

Donald and Denison (2001) tested the relationship among student responses to the various criteria with a principle components analysis (PCA) with a varimax rotation. The PCA resulted in five factors, accounting for 57.3% of the variance. The factors were (a) generic skills and abilities, comprised of 11 criteria; (b) academic performance, comprised of four criteria; (c) employment competence, comprised of three criteria; (d) specific

skills, comprised of two criteria; and (e) academic preparedness, comprised of three criteria.

Using multivariate analysis of variance (MANOVA), the researchers tested the relationship between the importance of each criterion and the point of time in college—entry, during study, or upon graduation. They found four patterns of interaction between importance and time:

1. The majority of criteria (17 of 25) showed an increasing importance over time.

2. One criterion, secondary school preparation, showed a decreasing importance over time.

3. Four criteria, general academic preparedness, commitment to learning, effective study skills, and academic performance in course, showed a peaking performance. These criteria were lower in importance at entry and graduation but higher in importance during study.

4. Three criteria, basic mathematical competency, personal student development, and completion of program requirements, demonstrated a plateauing importance over time. These criteria increased importance from entry to studies and maintained importance through graduation.

Donald and Denison (2001) concluded that student perception of performance was multifaceted. They appreciated the need for value-added developmental factors

over the course of their experience. They also recognized the importance of both income and output variables.

Traditionally, comprehensive performance assessments have been at the institutional level. No statewide performance assessments across the 50 states existed until 2000 when the National Center for Public Policy in Higher Education (NCPPE) conducted an extensive analysis of higher education performance. NCPPE graded all 50 states on five categories: (a) performance, (b) participation, (c) affordability, (d) completion, and (e) state economic benefit. Each of the five categories was comprised of data representing several measures of each category. NCPPE weighted the data, benchmarked the states for each category and assigned letter grades, A through F, to every state for each category.

Martinez, Farias and Arellano (2002) conducted a study to determine the relationship among the five measures of state higher education performance used by the National Center for Public Policy in Higher Education (NCPPE) and to understand the relationship between these measures of performance and elements of state higher education environment. The researchers used secondary data analysis from all 50 states included in the NCPPE's report, *Measuring Up 2000: A Report Card for Higher Education*, as

well as geographic, economic and demographic information from all 50 states.

The variables for Martinez's (2002) study were the state letter grades for each performance category and 14 sets of data representing various state environmental conditions (e.g., income per capita, percentage of children in poverty, and ratios of state appropriation). The purpose of this study was to determine the relationship among the five NCPPE performance categories and to explore what environmental factors might predict the state performance grades.

The predictor variables were the 14 environmental factors measured in at least interval measures. The criterion variables were numerical scores of the state grades for each of the performance categories.

Martinez, Farias and Arellano (2002) used two-tailed Pearson correlations to test significant relationships among the performance categories. They used backward stepwise multiple regressions for each of the performance categories with the 14 environmental factors as predictor variables and the numerical performance grade as the criterion variable.

The results of the Pearson correlation analysis resulted in several statistically significant

relationships. Preparation significantly correlated with participation ($r = .550, p < .01$), with completion ($r = .301, p < .05$), and with benefits ($r = .551, p < .01$). Affordability had a significant negative correlation with completion ($r = -.356, p < .05$). Participation also significantly correlated with completion ($r = .318, p < .05$) and with benefits ($r = .642, p < .01$). The negative correlation between affordability and completion demonstrated that state aid, college expenses, and measures of income are not significantly related to enrollment in postsecondary education.

The results of the backward stepwise multiple regressions yielded significant models for every category of performance. The significant predictor variables in the preparation model explained 56% of the variance in the state preparation grades ($adj. R^2 = .562$). The variables included in the preparation model were: (a) 1997 K-12 spending per \$1000 of state wealth, (b) income per capita, and (c) percentage of children in poverty.

The significant predictor variable in the participation model explained 28% of the variance in state participation grades ($adj. R^2 = .283$). The only variable included in the participation model was income per capita.

The significant predictor variables in the affordability model explained 29% of the variance in the state affordability grades (*adj. R*² = .287). The variables included in the affordability model were: (a) ratio of higher education appropriations to tax revenues per capita and (b) ratio of total population to enrollment in higher education institutions.

The significant predictor variables in the completion model explained 45% of the variance in the state completion grades (*adj. R*² = .452). The variables included in the completion model were: (a) 1998-99 public four-year tuition and fees, (b) 1998-99 state spending on student aid, and (c) percentage of minority enrollment in higher education.

The significant predictor variable in the benefits model explained 17% of the variance in the state benefits grades (*adj. R*² = .166). The only variable included in the completion model was the percentage of children in poverty.

Five environmental variables failed to enter any of the regression models in which they were entered: (a) public two-year tuition and fees, (b) ratio of total population to the number of higher education institutions, (c) ratio of total population to enrollment in K-12, and (d) percentage of minority population in the state.

Martinez, Farias and Arellano (2002) concluded that measures of income and ethnicity were important in explaining variance in the NCPPHE performance grades for states. In fact, they reported that measures of wealth were significant in every category in which he entered them.

A final observation by the authors was the amount of variance left unexplained by the environmental variables he used. Since environmental variables represent circumstances largely outside the control of the state, they theorized that variables associated with policy might help account for some of the unexplained variance.

As the trend for assessment and accountability developed, questions arose as to the support by institutional-level personnel. Welsh, Petrosko, and Metcalf (2003) examined faculty and administrator differences and support for institutional effectiveness activities at two-year institutions. They mailed a survey to 236 faculty and 122 academic administrators who participated in Southern Association of College (SACS) self-evaluation practices. The responses provided information about perceptions of (a) the importance of institutional effectiveness, (b) the primary motivation for institutional effectiveness, (c) the definition of quality,

(d) the depth of implementation, and (e) the personal level of involvement.

The dependent variable in this study was the perceived importance of institutional effectiveness activities. The independent variable was the status of the survey respondent, whether faculty or administrator.

Welsh, Petrosko, and Metcalf (2003) used hierarchical multiple regression analysis to test the predictive nature of the survey attitudinal variables, faculty/administrator status, and interaction effects. The attitudinal variables were entered first as control variables.

The results of this study showed that the four control variables were significantly predictive of the importance faculty and administrators placed on institutional effectiveness activities ($R^2 = .738$). The faculty/administrator status was not a significant predictor of importance for institutional effectiveness activities. There were no significant interaction effects.

A second regression analysis demonstrated that all four of the attitudinal variables were significant predictors of importance faculty and administration placed on institutional effectiveness activities: (a) primary motivation ($\beta = .301, p < .01$); (b) level of involvement ($\beta = .324, p < .01$); (c) depth of implementation ($\beta = .214,$

$p < .05$); and (d) definition of quality ($\beta = .180$, $p < .05$).

Welsh, Petrosko, and Metcalf (2003) concluded that faculty and administrators at two-year institutions were more likely to support institutional effectiveness activities if (a) they were personally involved in the process, (b) there was an outcomes orientation, (c) institutions implemented findings, and (d) the primary motivation was internal rather than external. When these variables were controlled, faculty and administrator attitudes toward institutional effectiveness activities were similar.

Ewell (1997) summarized three reasons for the difficulty in measuring the complete impact of assessment policies: (a) The span of time since assessment policy initiation has been too short to measure depth of impact; (b) individual state strategies are dissimilar; and (c) externally mandated policies are subject to many institutional variations in implementation.

The impact of state policies and strategies is not limited to the public universities. Private institutions are gaining importance in the total landscape of state systems. Although strategies of inclusion for private institutions vary among the states, many researchers

support consideration of them in a balanced market (Zumeta, 1996; Martinez, 2003). The following subsection reviews empirical studies associated with private institutions of higher education.

Private Institutions

The empirical studies in this section show a relationship between public policies and private education. The literature progresses from simple effects of policies toward actual public strategies to include private institutions.

Astin and Inouye (1988) assessed the effects of state policies and programs on the enrollment and finances of private higher education institutions. The independent variables for their study were measures of student financial aid, direct institutional aid, and public tuition. They used secondary data recorded in databases generated by several agencies. Information from more than 1000 private institutions provided the data for this study.

Astin and Inouye (1988) used numerous multiple regression analyses to test the ability of these independent variables to predict both total enrollment and enrollment by race, socioeconomic status, and student achievement at private institutions. They also used the independent variables to test their ability to predict

tuition rates and educational expenditures for private institutions. The researchers were interested in testing their variables across time, so they used longitudinal data to control for changes. In each regression, a pre-test component of the dependent variable score provided a control variable for the outcome measurement.

The overall results of this study indicated the greatest predictor of each dependent variable was always the pretest score for that variable. The strongest predictor of an institution's 1977 enrollment was its 1972 enrollment ($R = .97$); the strongest predictor of 1982 tuition was 1973 tuition ($R = .91$); the strongest predictor of low-income student enrollment in 1980 was low-income student enrollment in 1970 ($R = .85$); the strongest predictor of 1980 medium-income student enrollment was 1970 medium-income student enrollment ($R = .64$); the strongest predictor of low-achieving student enrollment in 1980 was low-achieving student enrollment in 1970 ($R = .81$). The policy variables that entered any of the regressions were (a) in the prediction of total enrollment, per-student change in financial aid dollars ($r = .01$, $\beta = .02$) and change in percentage receiving financial aid ($r = -.08$, $\beta = -.03$); (b) in the prediction of tuition for private institutions, per-student change in direct institutional

aid ($r = -.03$, $\beta = -.03$); (c) in the prediction of low-income enrollment, per-student change in financial aid ($r = .10$, $\beta = .10$); (d) in the prediction of medium-income enrollment, per student change in financial aid dollars ($r = .33$, $\beta = .15$); and (e) in the prediction of low-achieving student enrollment, change in percentage receiving financial aid ($r = .35$, $\beta = .13$).

Astin and Inouye (1988) concluded that enrollment and finances at private institutions were highly stable over time. Current state policy has not largely affected these factors, except for the following:

1. When states increased the total amount of student aid dollars, enrollment increased in private institutions, especially less selective ones.

2. When states increased the total number of awards, enrollment tended to decrease in private institutions.

3. When states increased the total amount of state aid dollars, tuition tended to decrease in medium and highly selective private institutions.

4. When states increased the total amount of student aid dollars, low and middle-income student enrollment tended to increase in private institutions.

Zumeta (1992) surveyed state higher education agency executive officers (SHEEOs) and state independent college

association leaders about state policies affecting private higher education. The survey resulted in an 87% response rate. The instrument design included open-ended responses, ranking of importance factors, and Likert-type scales regarding the association between private higher education and various state-level planning issues and policy-making.

Respondents to the survey identified these state policies as integral to the health of private higher education: (a) state spending on student grants; (b) programs of direct state funding for private institutions; (c) public sector tuition policies; and (d) involvement by private institutions in state planning. Zumeta (1992) used independent samples t-tests and Pearson correlations to test relationships among these policies and among state environmental characteristics.

The results of this study indicated that policies friendly toward independent institutions were positively correlated. These state characteristics were correlated to various policy patterns: (a) region; (b) state private enrollment; (c) independent legislative lobbying; (d) type of state governance structure; and (e) amount of per-capita state expenditures on higher education.

Zumeta (1996) used information from his 1992 survey to further examine the relationships among state policies and

private higher education. He also used secondary data on state student aid funding from an annual survey by the National Association of State Scholarship and Grant Programs and data on tuition policies from a survey of the State Higher Education Executive Officers.

Zumeta (1996) defined three types of policy postures of states toward private higher education: (a) Laissez-faire model where states largely ignore the private sector; (b) central planning model where states plan and regulate the roles of private institutions; and (c) market-competitive model where states see private institutions as important partners and set policy to reflect market-driven supply and demand forces. The purpose of this study was to understand how these policy dimensions influenced public and private enrollment, funding and quality.

The initial methodology was cluster analysis to see how states grouped according to six policy criteria: (a) state student aid funding level, (b) absence or presence of direct state payments to private institutions, (c) public tuition levels, (d) private sector involvement in planning, (e) consideration of private institution programs in review of new public university programs, and (f) degree of state mandates affecting private institutions. The four cluster results without preconditions had (a) cluster one with 21

states, (b) cluster two with 13 states, (c) cluster three with 13 states, and (d) cluster four with one state.

Zumeta (1996) characterized each of the six policies to reflect one of the three policy arenas and examined those against the four clusters. He developed six new clusters reflecting states with these policy structures: (a) laissez-faire ($N = 13$), (b) laissez-faire/market competitive (lf/mc) hybrid ($N = 4$), (c) market-competitive ($N = 8$), (d) central planning ($N = 5$), (e) central planning/market competitive (cp/mc) hybrid ($N = 14$), or (f) other states that failed to qualify for any cluster ($N = 3$).

Zumeta (1996) tested for relationships among private enrollment and state variables using Pearson correlation coefficients. He found significant correlations between private sector share of enrollment and (a) state student aid per student ($r = .41, p < .001$); (b) state student aid per capita ($r = -.52, p < .001$); (c) state personal income per capita ($r = .43, p < .001$); (d) state tax effort ($r = -.24, p < .05$).

Next, Zumeta (1996) examined the distribution of state policy clusters on state characteristic variables. He found the highest private enrollment share in the cp/mc hybrid cluster ($M = 30\%$), and the lowest share in the

laissez-faire cluster ($M = 14\%$). The highest state wealth was in the central planning cluster ($M = \$16,909$), and the lowest state wealth was in the laissez-faire cluster ($M = \$12,988$). The highest state tax effort was in the laissez-faire ($M = 16.9\%$) and lf/mc ($M = 16.9\%$) clusters, and the lowest state tax effort was in the central planning cluster ($M = 15.5\%$). The highest growth in private education was in the lf/mc cluster ($M = 11.3\%$), and the lowest growth was in the unclassified cluster ($M = 1.6\%$). The highest state spending per student was in the lf/mc cluster ($M = \$8,232$), and the lowest spending per student was in the central planning cluster ($M = \$5,700$).

Zumeta (1996) summarized from his research that (a) there was a systematic relationship among state policies affecting private education; (b) the state policy postures were categorical according to their affect on private education; and (c) tentative implications could be drawn concerning state policy and private education. He concluded that state policy posture that strategically includes the private sector, particularly the market-competitive model, could aid states in delivering an attractive combination of outcomes. He offered high participation rates, reasonable quality, average taxpayer per-capita spending, and below-

average taxation as favorable higher education outcomes in the market-competitive model.

Thompson and Zumeta (2001) replicated the 1988 Astin and Inouye study and used the data to examine the supply and demand structure of private higher education. The 2001 study results were similar to the 1988 results, confirming the accuracy of the 1988 findings. Thomson and Zumeta (2001) further tested the validity of these results by using marketing theory to draw two competitive statistical models to test for direction of causation.

Using a series of multiple regressions, Thompson and Zumeta (2001) tested these independent variables: (a) tuition, state student aid, and institutional density; and (b) changes in tuition and state student aid. The dependent variables were market share of private colleges and universities, the number of private colleges and universities per student, and the change in market share.

The results of this study indicated that increases in public tuition led to an increase in the market share of private colleges and universities. Increases in state student aid growth also led to an increased market share for private institutions.

The researchers concluded that state policies of high public tuition and high student aid increase the market

share for private higher education. They maintain that financial policies maximizing private education will ease the burden of increased demand for higher education and are a cost-effective alternative to expensive expansions.

The inclusion of private education institutions in the broad spectrum of statewide agenda is further evidence of a growing tendency for states to adopt wider perspectives on their role in forming and guiding higher education.

McGuinness (1999) suggested that state policymakers were becoming more interested in the micro-level issues of higher education to direct a comprehensive statewide agenda. The following subsection reviews literature associated with relatively new areas of leadership in statewide policies.

Policy

Policy is the means by which the state steers, guides, and establishes coordination of statewide higher education goals. Policies reflect the values and priorities of the policymakers who try to synthesize current issues with higher education environment (Gill & Saunders, 1995). The following policy analyses help to explicate the issues within policymaking, the implementation of state policy at the local level, and the responses of campus personnel to state policy.

Epper (1997) conducted a case study of three states to examine their policies on distance education. She analyzed the coordination and competition elements of policy structure and implementation. The research for this study examined: (a) how competition in higher education affected decisions concerning distance education; (b) if distance education could improve access to state higher education; and (c) how introduction of distance education issues into the state higher education environment affected traditional roles of statewide coordination.

Epper (1997) collected data through document analysis, unstructured interviews with high-level higher education officials, and on-site observation. She categorized her data through both conceptual frameworks based on literature review and emerging design.

The three case-study states were Minnesota, Maine and Colorado. Epper (1997) chose these states based on the guidance of an expert panel.

The results of this study for Minnesota showed an attempt by the state to implement a policy on distance education. The policy was controversial and did not pass the legislature.

The case study for Maine also revealed an attempt for statewide distance education coordination that faced

political and academic controversy. Disagreements among faculty, legislators, trustees, and the state coordinating board resulted in postponement of distance education implementation and the resignation of key higher education leaders.

The Colorado case study revealed a historical resistance to statewide coordination of distance education based on (a) institutional skepticism of statewide governance, (b) competition among individual institutions, and (c) lack of policy direction from the state coordinating board. The state did address distance education in 1995 by (a) making it a budget priority, (b) changing geographic boundary policies, and (c) creating the Colorado Electronic Community College (CECC). The CECC was under the leadership of the community college system president.

Epper (1997) discussed the case study in relation to her original research questions. To address the first question, she explained that competition affected distance education issues by (a) creating urgency for states to address the issue before an outside entity did and (b) expanding the market of traditional higher education. She also maintained that state discussion for distance education showed a drift in ideology from higher education

being "product based" to being "market based." She explained that the traditional product-based concept originated with the institution and anticipated enrollment by reputation and prestige. The market-based concept originates with the student market and anticipates enrollment by customer satisfaction. Epper (1997) explained that the results of her data indicated three forces that ran counter to the market concept: (a) traditional focus on the products of higher education; (b) rivalry among individual institutions; and (c) political influences in statewide coordination.

Epper (1997) addressed the results of the case study in relation to the second research question by explaining a continuum of approach to state policy regarding distance education, from laissez-faire where the state ignores the issue to comprehensive where the state adopts distance education as a matter of public policy. She explained that the Colorado approach began with laissez-faire, but moved quickly toward the comprehensive approach. Minnesota was in the middle of the continuum, operating through a coordinating council. Maine's approach was comprehensive.

Epper's (1997) third research question examined the effect of distance education issues on the role of statewide coordinating entities. She concluded that the

results of the three case studies showed a substantial change in the both the need and the elements of statewide coordination:

1. The traditional role of statewide coordination eliminated program duplication and defended geographic territory. The new mission involved partnerships, market-needs assessment, and institutional capacity.

2. Statewide quality was based on inputs. New quality assumptions were based on outputs.

3. Education delivery was campus-based. Current and future education delivery was broad-based, including home, community, and business.

4. Funding issues were based on equality for mission and degree level and appropriations for campuses. New funding issues included state and market needs, appropriations for students, and strategic goals.

5. The traditional scope of statewide coordination was limited to traditional post-secondary institutions. The new scope encompassed businesses, K-12 education, and government agencies.

A study by Mills (1998) examined the implementation process of a policy on remedial education in Oklahoma. He used a qualitative case study of three institutions to understand their approach in implementing the state-

mandated policy. Social construction and organizational culture provided the theoretical framework to examine the methods and meanings each campus attached to the implementation of state policy.

Mills (1998) chose three Oklahoma schools: (a) Langston University (LU), a historically black institution; (b) Tulsa Community College (TCC), a metropolitan college with four campuses; and (c) The University of Central Oklahoma (UCO), a comprehensive school with 15,000 students. He purposed that these schools provided diversity in their remediation needs and balance between selectivity and access.

Mills (1998) collected data primarily through semi-structured interviews of institutional assessment staff, faculty, department chairs, and support service staff ($N = 15$ at LU; $N = 20$ at TCC & UCO). He supplemented his interviews with document analysis and coded all data to identify broad themes associated with (a) faculty and staff understanding of the intentions of remediation policy and its relevance to their institution, (b) existence of tension between institutional tradition and policy mandates and how institutions dealt with any such tension, and (c) faculty and staff attitude toward state-mandated policy that affected curriculum and teaching decisions.

The results of this study indicated a successful implementation of a state policy with three variations based on institutional situation. Mills (1998) concluded that each institution interpreted and implemented the remediation policy according to institutional culture, mission, and role in the state higher education system. He found that (a) Faculty tended to be skeptical of state-mandated practices and did not always understand what criteria policymakers used to make decisions; (b) local administrators tailored implementation toward existing missions and procedures; and (c) symbolic meanings of policy are important in understanding responses from campus constituents. Mills summarized that policy-making and implementation worked best when there was interaction between campus and state stakeholders.

Welsh (2000) conducted a case study of the Kansas higher education system policy formation on course ownership against the sociological concept of problem definition. He collected data through (a) interviews with the Board of Regents and campus student, faculty and administrative leaders; (b) observation; and (c) study of documents, including agenda and minutes of key meetings, policy papers, and correspondence.

Welsh (2000) explained that problem definition is an explanation of the process of societal issues evolving into social problems. The primary theory of problem definition outlines the human behavior associated with defining a problem, determining the origin of a problem, understanding who is affected by the problem, and evaluating the significance of a problem.

In the Kansas case study, Welsh (2000) assessed the Kansas higher education Board of Regent's course ownership policy formation to determine what phases of problem definition were apparent in the process. He discussed the importance of understanding policy formation in higher education to (a) recognize ideological changes, (b) identify key influences and authority, (c) predict important public agenda, and (d) appreciate acceptable social issue resolutions.

The results of the Kansas case study identified four phases of policy formation attributable to the problem definition process:

1. Emergence of an issue. Chief academic officers introduced a need to discuss and formulate a policy on copyrights of intellectual property. This initial phase encompassed two years of dialogue among chief academic

officers, a special committee to research intellectual property patents, and an attorney for the Board of Regents.

2. Legitimation of the issue. The original policy draft by the special committee stirred controversy from faculty and student governance and chief academic officers. Regents agreed to lead a process to develop a new policy.

3. Mobilization for action. Various constituencies began to formulate their unique perspectives on the issue. As a result, competing policy suggestions were introduced into the process. Welsh (2000) found the greatest conflict existed between faculty and academic administrators points of view. The Regents formed a new task force to synthesize information.

4. Formation of policy. The new task force deliberated over the various viewpoints and finally accepted a position favorable to the academic officers. The Board of Regents adopted the policy and instructed campuses to change their governance policies to reflect the new regulations. Welsh (2000) summarized that this represented a move away from local campus autonomy and represented accountability and reform unpopular to many faculty.

Welsh (2000) concluded that this case study shed light on the process of state policy formation and who

represented authority and influence. He added that faculty and staff might pursue leadership in defining issues early in the process to set the tone for policy formation.

Welsh and Kjorlien (2001) studied the transfer function of state higher education boards. They interviewed state chief academic officers, chief research officers and/or principal policy analysts for all 50 states and Puerto Rico based on a piloted interview protocol. Welsh created a database of responses based on five dimensions from student information literature: (a) purpose of the information system, (b) structure of the information system, (c) scope and content of the information system, (d) uses of the information system, and (e) impact of the information system.

The results of this study showed a majority of states ($N = 43$) collected and stored information on transfer students. The two primary objectives of transfer student information systems identified by the respondents in the survey were (a) enhancing transfer effectiveness ($n = 14$) and (b) supporting institutional and state planning ($n = 11$).

The data regarding structure, capacity and content of transfer information systems provided this information: (a) 93% had continuous data collection; (b) 77% collected

student unit records; (c) 73% could track inter-institutional mobility; (d) 30% had interactivity between institutions and the database; (e) 89% included transfer students in retention and graduation rates; and (f) 70% included additional academic outcomes data.

Fifty-five percent of the respondents cited evidence of the transfer student information system having an impact on the transfer environment in their state. Specific examples of the most-cited effects included (a) amendment of transfer and articulation agreements ($n = 7$), (b) changes in formula or performance funding awards ($n = 7$), (c) influence of state policy regarding course numbers or general education ($n = 4$), (d) initiation of new policy studies on transfers ($n = 4$), and (e) reevaluation of course equivalencies and degree requirements ($n = 4$).

Welsh and Kjorlien (2001) concluded that states have not synthesized their capabilities to collect data, their existing databases, and the utilization of all information to enhance the transfer environment. They urge policymakers and higher education leaders to employ existing information to improve the prospects of all students in obtaining a complete range of higher educational opportunities.

Welsh (2002) examined the transfer function of state higher education boards. He interviewed state chief academic officers, chief research officers and/or principal policy analysts for all 50 states and Puerto Rico based on a piloted interview protocol. Welsh (2002) created a database of responses based on five dimensions from student information literature: (a) purpose of the information system, (b) structure of the information system, (c) scope and content of the information system, (d) uses of the information system, and (e) impact of the information system.

Welsh (2002) reported the importance of state boards in serving as liaison between institutions and state legislators. He described literature demonstrating both the importance of following transfer students throughout the higher education structure, and the ability of state higher education boards to coordinate the tracking function.

The results of this study showed a majority of states ($N = 43$) collected and stored information on transfer students; a smaller group ($N = 24$) used information to impact the transfer policy environment. Based on this information, Welsh (2002) reported five benchmarks of best practices of state higher education boards related to

transfer student information: (a) Best practice states understand and communicate policy goals associated with improving transfer student environment; (b) best practice states have the ability to track student transfers throughout the entire state system on a continuing basis; (c) best practice states can assess academic progress and performance of transfer students; (d) best practice states have interactive information systems accessible to all postsecondary institutions; and (e) best practice states use the data on transfer students to create policy and inform decisions to improve transfer student coordination.

The communication and coordination among state and campus levels of higher education is one factor affecting faculty and administrative response to policy mandates. Colbeck (2002) studied the attitudes of campus personnel concerning two state policies intended to improve undergraduate teaching. Her case study included an examination of a law addressing professorial teaching loads in Ohio and performance funding legislation in Tennessee. She used Ohio State University (OSU), Youngstown State University (YSU), University of Tennessee at Knoxville (UTK), and Tennessee Technological University (TT) as her sample institutions.

Colbeck (2002) discussed literature's description of state policy mandates and inducements. Mandates legislated behavior consistent with imposed rules. Inducements were rewards contingent upon stipulated behavior. Ohio's teacher workload law constituted a state mandate; Tennessee's performance funding was characteristic of inducement.

Participants in the study were central administrators, deans, chairs and associate chairs, and faculty ($N = 170$). Researchers conducted semi-structured interviews of each participant. Questions of faculty members related to their teaching practices, motivations for those practices and knowledge of state policies. Questions of administrators related to their perceptions of faculty teaching practices, their management of undergraduate teaching, and their influence from state policy.

Colbeck (2002) used a coding scheme to categorize participant responses. Researchers analyzed the case studies for similarities and differences between faculty and administration, institutional types and states.

The results of this case study showed differences in faculty and administration responses based on (a) institutional context, (b) elapsed time from initial policy establishment, (c) and conflicting state policies. Colbeck

(2002) discussed the efficacy of state policy as implemented on the institutional level. Most faculty and administrators in this study said faculty strive for undergraduate teaching excellence regardless of state policy. Improvement was a matter of professionalism, not policy. Colbeck theorized that state policy might be most effective when professional knowledge and public control are integrated.

Summary

The role of state government in higher education has changed throughout the years and continues to evolve as politics, economics and environmental factors influence the relationship between the state and local campuses. As state legislature, campus personnel, and the general public interact concerning priorities and needs in education, the relationship between state and campus moves between the extremes of institutional autonomy and statewide regulation.

This literature review presented conflicting research about the balance of autonomy and regulation between campuses and state government. One study indicated autonomy had decreased at the institutional level (Sabloff, 1997) as state governments exercised more control over universities, while other research presented evidence that

autonomy at the institutional level had increased (Volkwein & Malik, 1997).

This review also gave examples of state governance structures and how these were formed and restructured in states. Researchers used frameworks and theory to understand the systems of coordination within states.

Studies explained state higher education system frameworks as having two dimensions, the political environment and the structural environment. One study suggested that leadership was most effective when the two environments worked in harmony (Bracco, Richardson, Callan, & Finney, 1999). Another study proposed that tension between the two dimensions helped to induce change (Martinez, 2002).

Many studies recognized the need for statewide coordination of higher education (Banta, Rudolph, Van, & Fisher, 1996; Marcus, 1997; Epper, 1997; Martinez, 1999; Welsh, 2002). Several researchers explained that the coordination worked best when: (a) it was evaluated for contemporary needs (Epper, 1997); (b) policy allowed for flexibility at campus-level implementation (Mills, 1998); and (c) communication existed among state-level and campus-level leadership (Colbeck, 2002).

A final section of this review explained research about the state role in higher education. Researchers demonstrated how state responsibility evolved from simple resource allocation (Alexander, 1998) to more complex issues of performance funding (Banta, 1996; Serban & Burke, 1998; and Burke & Modarresi, 2000) and policy enactment. Frost and Marine (1997) suggested that the relationship between state and campus was often strained, because state level decisions were made without input from the campus. Rather, policy decisions relied on political action instead of research. To shed light on what priorities policymakers often reflect, a study by Marcus (1997) found that state decisions regarding cost reduction and accountability had the highest passage rate in the legislatures.

The relationship between state government and local institutions is an important area to understand. The issue has implications in many areas of higher education and relates to access, affordability, academic quality, participation, and economic success.

CHAPTER III

METHODOLOGY

The purpose of this study was to understand variability in state system performance in affordability using variables describing the state political environment and the higher education governance structure. Specific variables of interest reflect research illuminated in Chapter II of this work. This chapter addresses the methodology to address the five research questions listed in Chapter I.

Theoretical Framework

Two previous studies provided the theoretical framework for this present research. Martinez (2002) conducted a quantitative study of economic and ethnic variables related to the variance in grades on the National Report Card for Higher Education, a study of state system performance conducted by the National Center for Public Policy and Higher Education. Richardson, et al. (1999) conducted qualitative case studies of effects of state policy environments on system performance.

Martinez (2002) analyzed variance in state performance grades using economic and ethnic variables. His regression analysis resulted in a model explaining 29% of variance in affordability. This study drew from Martinez's suggestion for further research of variables that might explain additional variance in affordability scores.

Richardson, et al. (1999) examined seven states to construct a qualitative observation of the effect of structural and political culture on the performance of state higher education systems. From their case studies, they concluded that there was a strong link between affordability performance and state higher education governance structure. They also determined that political culture was responsible for differences in state work processes, policy creation, and policy implementation. This current study builds on the findings of the case studies prepared by Richardson and his colleagues.

Research Design

This study used an ex post facto correlational research design with secondary data representative of the complete population of the 50 states. The correlational design was appropriate to address the research questions concerning degrees of association among the study variables (Shavelson, 1981).

Subjects

This study included the complete population of the 50 states of the United States of America. No sampling was necessary, because the population was small ($N = 50$), and data were available for every state.

Independent Variables

Four independent variables applied to this study. Three of the variables were characteristics describing state political culture and one variable described the state system of higher education governance.

This study used previously published secondary data from political science literature and the NCPPHE National Report Card database. Data collection proceeded as compilation from the appropriate databases and tables. The following section discusses each variable data source, measurement, and measurement scale.

Special Interest Group Strength

Thomas and Hrebenar (1999) offer the most comprehensive comparative study and classification of the overall strength of interest groups (SIGs) on policy in the American states (Hill, 1997). Their research included studies of state interest groups over the past twenty years. They classified states into five categories

descriptive of their influence on policy formation with each category representing a stronger impact.

Thomas and Hrebenar (1992) developed their typology using a conceptual framework of five major categories that affected the development, makeup, operating techniques, and influence of interest groups in the American states. Following is a list of the five categories with the rationale that Thomas and Hrebenar reported for the importance of each category in determining the influence of special interest groups:

1. Available resources and extent of socioeconomic diversity. Key elements of this category included the socioeconomic development level of the state, the governmental expenditure and revenue levels, and the extent of social development and social/demographic diversity. Thomas and Hrebenar (1992) contended that these state elements produced a competitive and diverse system of influence. The more diversity in a state, the less influential any one interest group was. In addition, diversity promoted sophisticated lobbying techniques and professionalized lobbyists.

2. State Political Environment. Key elements of this category included political attitudes, relationships between political parties and interest groups, and the

level of campaign costs and sources of support for the special interest groups. Thomas and Hrebendar (1992) reported that this category affected the types of policies that SIGs pursued and the context in which SIGs operated. These characteristics helped determine how beholden lawmakers were to SIGs.

3. Governmental Institutional Capacity. Key elements of this category included state policy domain, level of integration or fragmentation of the policy process, state government professionalization level, and extensiveness and enforcement of public disclosure laws. Thomas and Hrebendar (1992) stated that these state elements helped to determine the patterns of access for SIGs.

4. Intergovernmental and external influences. Key elements of this category included intergovernmental spending and policy-making authority and the nationalization of issues and intergovernmental lobbying. Thomas and Hrebendar (1992) contended that these state elements influence the amount of resources available to SIGs. When an issue was broader than the state level, state groups had access to national, out-of-state resources.

5. Short-term state policy-making environment. Key elements in this category included political party

effectiveness in government and state public policy and spending priorities. Thomas and Hrebemar (1992) reported that these state elements affected the control and effectiveness of preferential treatment for individual SIGs.

The authors used the above five categories as a protocol to examine the influence of interest groups in each state. They admitted that using identical methodology among states was impossible. Differences among state records, regulations, and environmental conditions prevented identical retrieval of data. They also negated the use of purely quantitative methods, because interest group and political dynamics needed qualitative perceptual information for definitions, understanding, and influence.

The ultimate approach by Thomas and Hrebemar (1992) combined extensive quantitative measurement when data were available with supplemental qualitative contributions from political science colleagues in every state. They developed a conceptual framework using a set of guidelines for qualitative interviews and observation. They asked each state contributor to use a qualitative methodology incorporating (a) SIG activity over the last twenty years, (b) the types of SIG's operating currently, (c) the tactics SIG's used to achieve their goals, and (d) the makeup of

the lobbying community. In addition, Thomas and Hrebear developed a common definition for many elements of interest group description and activity.

The result of their methodology was an ordinal, categorical scale describing interest group strength on state policy formation. The levels and number of states in each category were (a) dominant ($N = 5$), meaning that SIGs in those states were consistently the strongest influence on policy making; (b) dominant/complementary ($N = 25$), meaning that SIG influence on policy alternated between the two levels; (c) complementary ($N = 16$), meaning that SIGs tended to work in conjunction with or were moderated by other aspects of the political system; (d) complementary/subordinate ($N = 4$), meaning that the SIGs alternated between those two levels; and (e) subordinate ($N = 0$), meaning that SIGs were consistently subordinate to other aspects of the political system.

Hill (1997) addressed the reliability and validity of the Thomas and Hrebear index. She indicated that the replication of the study among all 50 states, the collaboration of multiple authorities, and the consistency of periodic updates increased both the stability of the measure and the surface plausibility.

Sabloff (1997) utilized the Thomas and Hrebenar (1992) classification in her study of state politics and higher education. Her correlation study required her to convert the Thomas and Hrebenar ordinal classification into a continuous variable with four levels, representing increasing amounts of influence (1 = *complementary/subordinate*; 2 = *complementary*; 3 = *dominant/complementary*; and 4 = *dominant*). Sabloff did not use the subordinate category, because no states qualified for that classification. This present study followed the Sabloff (1997) precedent by using the Thomas and Hrebenar (1992) classification converted to a continuous scale with four levels (see Appendix A).

Legislative Professionalism

Political scientists often categorize state legislatures based on the length of sessions, the size of legislative operations, and the amount of legislator salaries (Hamm & Moncrief, 1999). These characteristics define the professionalization of the state legislature.

Squire (1992) developed a state legislative professionalization index. He compiled 1986-88 data on member pay, staff members per legislator, and total days in session and compared these scores against the same measures for Congress. He converted each of the three state scores

to percentages of the congressional figure, totaled the three percentages, and divided by three to have a composite score ranging from 0 to 1. The three components were equally weighted.

In a critical examination of state legislative professionalization indices, Mooney (1994) addressed the reliability of the Squire (1992) index. He noted that the Squire index was the best measurement for replication, because it only involved three, nationally documented variables. Mooney also observed that the Squire index was valid as a measure based on high correlations with other, more comprehensive indices ($r = .82$ to $.87$).

King (2000) updated the Squire study. He calculated legislative professionalization for a two-year period in four decades. His most recent calculation was for 1993-94.

King (2000) modified the Squire (1992) index by substituting expenditures for services and operations per legislator as a measure of staff size. King modified the Squire items, because Squire had used a one-time study for number of staff members, and accurate data were not available for other years. The substitution of expenditures by King correlated highly with staff size ($r = .922$). The King index provided the legislative

professionalization measure for this study (see Appendix B).

Gubernatorial strength

Beyle (1999) calculated a scale for the institutional strength of governors. The scale is a composite score of six indicators of gubernatorial power: (a) separately elected executive branch officials, (b) tenure potential of governors, (c) governor's appointment powers in six major functional areas, (d) governor's budgetary power, (e) governor's veto power, and (f) gubernatorial party control.

The measurement for the first individual item, separately elected officials, was an ordinal scale representing decreasing numbers of officials elected by the citizenry (1 = governor with seven or more process and several major policy officials elected; 1.5 = governor with six or fewer officials elected, but two are major policy officials; 2 = governor with six or fewer officials elected, including one major policy official; 2.5 = governor with six or fewer officials elected, but none are major policy officials; 3 = governor/lieutenant governor team with process officials, and some major and minor policy officials elected; 4 = governor/lieutenant governor team with some process officials elected; 4.5 = governor or governor/lieutenant governor team, with one other elected

official; 5 = only governor or governor/lieutenant governor team elected). The second individual item in the Beyle scale, tenure potential measurement, was an ordinal scale representing increasing years allowed in office (1 = two-year term, only two terms permitted; 2 = two-year term, no restraint on reelection; 3 = four-year term, no consecutive reelection permitted; 4 = four-year term, only two terms permitted; 4.5 = four-year term, only three terms permitted; 5 = four-year term, no restraint on reelection).

The third individual item, measurement of the governor's appointment power, measured appointment power in six major functional areas: corrections, K-12 education, health, highways/transportation, public utilities regulation, and welfare. Beyle totaled, then averaged the six individual office scores, and rounded to the nearest .5 for the state score. The result was an ordinal scale representing increasing responsibility/privilege for appointment in major state functions (1 = someone else appoints, no approval or confirmation needed; 2 = someone else appoints, governor and others approve; 3 = someone else appoints, governor approves or shares appointment; 4 = governor appoints, a board, council, or legislature approves; 5 = governor appoints, no other approval needed). The fourth individual item, measurement for the governor's

budgetary power, was an ordinal scale representing increasing responsibility (1 = governor shares responsibility with other elected official, and legislature has unlimited power to change executive budget; 2 = governor shares responsibility, and legislature has unlimited power to change executive budget; 3 = governor has full responsibility, and legislature has unlimited power to change executive budget; 4 = governor has full responsibility, and legislature can increase special majority vote or subject to item veto; 5 = governor has full responsibility; legislature may not increase executive budget).

The fifth individual item in the Beyle scale, measurement for governor's veto power, was an ordinal scale representing increasing veto privilege (1 = no item veto, only a simple legislative majority needed to override; 2 = no item veto, with a special legislative majority needed to override it; 3 = has item veto with only a majority of the legislators present needed to override; 4 = has item veto with a majority of the legislators elected needed to override; 5 = has the item veto and a special majority vote of the legislature is needed to override a veto). The sixth individual item, gubernatorial party control, was an ordinal scale representing increasing personnel from the

governor's party in the state legislature (1 = governor's party is 25% or less in both houses; 2 = simple majority in both houses, or a simple minority of 25% or less in one and a substantial minority of more than 25 % in the other; 3 = split party control in the legislature or a nonpartisan legislature; 4 = a simple majority in both houses of less than 75%, or a substantial majority in one house and a simple majority in the other; 5 = governor's party is 75% or more in both houses).

The composite score for the Beyle scale of governor's institutional powers was the sum of the scores for each individual characteristic, divided by six, and rounded to the nearest tenth of a point. The independent variable measurement in this current study for gubernatorial strength is the Beyle (1999) composite score (see Appendix B).

State higher education governance structure

Measurement for the governance structure (see Appendix C) utilized a taxonomy developed by McGuinness (1997). Higher education research literature, discussed in Chapter II, outlined the McGuinness classification and numerous studies that used his classification as a variable.

The stability of the McGuinness index over time and across comparative state studies is evidence to its

reliability. The support throughout higher education literature speaks to the construct and the surface plausibility of the classification.

In correlation studies, researchers converted the original nominal scaled description to continuous scales representing increasing centralization of coordination. This current study used the four-point continuous scaled levels of structure that Sabloff (1997) used in her study (1 = *least centralized planning agencies*; 2 = *weak coordinating boards with no program approval*; 3 = *strong coordinating boards with program approval*; 4 = *most centralized consolidated boards*).

Dependent Variable

The National Report Card for Higher Education (NCPHE, 2000) affordability grade provided the measurement for the dependent variable: state performance in higher education affordability (see Appendix D). The state grade for affordability addressed family ability to pay for higher education based on the economy of the state. The final grade was a composite score for financial characteristics: (a) the family ability to pay at community colleges and public and private 4-year institutions; (b) the amount of state aid focused toward low-income families as a percent of federal Pell Grant aid to low-income families; (c) the

share of income needed by poorest families to pay for tuition at lowest-priced institutions; and (d) the average loan amount students borrow each year.

The committee computed the composite score in several steps. First, they chose the individual indicator items with consideration for their collection by reliable, public sources practicing approved data collection techniques. They also chose indicators that were comparable across all 50 states. Second, the committee assigned mathematical weights for each indicator based on research and policy experience. Family ability to pay figured 50%; the amount of need-based state aid figured 20%; the low-priced colleges figured 20%; and the average student debt figured 10 percent. Third, the committee indexed results for each individual item to a scale of 0 to 100. The top five states were benchmarks. The median score for the top five states (i.e., the third best state) was 100. The NCPPE committee chose this indexing method to set a standard for performance in each category. Fourth, the committee multiplied the indexed scores for each item by the assigned weight and added the scores to achieve the affordability category score. Fifth, the committee indexed the raw affordability composite score to a scale of 0 to 100, using the top performing state as the benchmark.

Prior to the completion of the national report card, The National Center for Higher Education Management Systems (NCHEMS) conducted extensive review of the data and methodology for the grades. The purpose of the NCHEMS statistical analyses was to gain an understanding in the relationships among indicators and between indicators and overall performance grades (NCPPE, 2001). NCPPE credited these statistical tests with contributing to the fair and accurate comparison of state performance.

The NCHEMS review maintained that formal scaling analyses were inappropriate for the affordability grade, because the composite score contained both additive and discounted measures. The NCHEMS analysts addressed reliability by indicating that correlational analyses guided the selection of the final indicators. They also reported robust correlations (between 0.8 and 0.9) for stability over time by comparing data from earlier years with data in the report card (NCPPE, 2001).

The NCHEMS reviewers also assessed the validity of the affordability measure, especially in light of the weighted scores. They emphasized that experts reviewed the methodology and that the scores accurately reflected current research (NCPPE, 2001).

Data Analysis

The data analysis for the present study included (a) descriptive information for all variables, (b) Pearson Product Moment correlations to represent simple relationships among all variables, and (c) multiple regression analysis results of statistics explaining the variability in the dependent variable as predicted by the independent variables. *SPSS* was the statistical software used for all procedures.

As a population study, this research is not concerned with inferential statistics to generalize about the population from random sampling (Huck, 2000). Data for the complete population are available. As a result, statistical significance and the testing of null hypotheses are not relevant to this study. Instead, the emphasis will be on measures of effect size, proportion of variance accounted for by statistical models, and the analysis of outlier cases.

Multiple Regression

Multiple regression is a data analysis procedure that provides information concerning the relationship of two or more independent variables to a dependent variable (Cohen & Cohen, 1975). Standard entry multiple regression is a simultaneous analysis of the combined effects of all

independent variables on the dependent variable (Keppel & Zedeck, 1989). While hierarchical analysis is helpful for understanding the incremental variance explained by each independent variable, simultaneous analysis is useful in exploratory situations where substantive knowledge has not informed entry order of predictor variables. Simultaneous, or standard entry, analysis was appropriate in addressing the research purpose and questions of the explanatory effect of political environment on affordability.

The results of interest for the multiple regression equation are R^2 , sr and sr^2 . The R^2 value computed by *SPSS* is the proportion of variance in the dependent variable, affordability, by the linear combination of the independent variables. This result addresses the research question regarding the combined effect of political environment and governance structure on affordability.

The semipartial correlation, sr , explains unique variance in the dependent variable accounted for by each independent variable. This result addresses the research questions related to the unique variance of political culture variables after the correlation or variance accounted for by other independent variables is removed. The squared semipartial correlation, sr^2 , is the percentage

of unique variance in the dependent variable that the independent variable represents.

The exploratory nature of this study may present reasons to test additional post hoc regression models to illuminate maximum effect of the research variables. Table 1 summarizes the variables, their measurements and sources used in this study.

Table 1*Description of Variables, Measurements, and Sources*

Variable	Code/ Measure	Source
<u>Predictors</u>		
SIG impact		Thomas and Hrebenar (1992)
complementary/subordinate	1	
complementary	2	
dominant/complementary	3	
dominant	4	
Higher Ed Governance		McGuinness (1997)
Planning	1	
Weak Coordinating	2	
Strong Coordinating	3	
Consolidated	4	
Gubernatorial Strength	Composite	Beyle (1999)
SEP	0-5	
TP		
AP		
BP		
VP		
PC		

Table 1 (continued)

Description of Variables, Measurements, and Sources

Variable	Code/ Measure	Source
Legislative Pro.	Composite	King
Salary/living expenses	0-100	(2000)
Session length		
Staff expenses		
<u>Dependent</u>		
Affordability	Composite	NCPPE
Family ability to pay	0-100	(2000)
Low student debt		
Financial aid		
Low-priced colleges		

Note. SEP = separately elected powers, TP = tenure

potential, AP = appointment power, BP = budgetary power, VP

= veto power; PC = party control (Beyle, 1999).

CHAPTER IV

RESULTS

The purpose of this study was to examine higher education affordability using variables defining the state political environment and the higher education governance structure. One research question addressed the combined effect of the impact of special interest groups, the professionalization of the state legislature, the institutional strength of the governor, and the state higher education governance structure on state higher education affordability performance. The four other research questions explored the unique contributions of the four independent variables on affordability. This chapter reports the results of statistical analysis examining the research questions in five sections: (a) reliability analyses, (b) descriptive statistics, (c) omnibus results of the multiple regression analysis, (d) results of the analysis of semi-partial regression coefficients, and (e) additional information from residual scores.

Reliability Analyses

Two measurement scores of independent variables consisted of composite scores. Legislative professionalization, measured by the King (2000) scale, was a three-item composite score. The Beyle (1999) scale, measuring the institutional strength of the governor, was a six-item composite score.

A reliability analysis of the Beyle (1999) scale yielded a six-item coefficient alpha of .33. This coefficient was well below the Nunnally and Bernstein (1994) suggested minimum criterion of .70.

Dilger, Krause, and Moffett (1995) corroborated the low reliability of the Beyle scale. They noted that researchers frequently used and often cited the Beyle scale; but the inconsistency in the composite score evoked debate among political researchers.

The alpha-if-removed figures did not indicate potential improvement in the total alpha level. Analysis of the reliability results for the six items indicated that all six items ostensibly measured different constructs. Use of the composite score could affect the measurement error and could reduce the actual effect size of governor strength on affordability.

The use of all six individual items of the Beyle (1999) scale was a problematic solution to the low reliability, because the regression analysis contained only 50 observations. Stevens (1996) recommended one predictor variable per 15 observations to prevent overfitting of regression models. Choosing one of the individual Beyle items to represent institutional strength was a solution.

A Pearson product moment correlation of the six individual Beyle (1999) items to the dependent variable of this study resulted in the variable, tenure potential of the governor, having the highest relationship to affordability ($r = .40$). Results of this correlation analysis are in Table 2. In light of the reliability and correlation analyses of the Beyle (1999) scale, this study included results for two multiple regressions, one using the composite Beyle score, and the other using the governor tenure potential measure.

The reliability analysis for the individual items in the King (2000) legislative professionalization scale resulted in a three-item standardized coefficient alpha of .72. This figure exceeded the Nunnally and Bernstein (1994) suggested minimum criterion of .70 and provided confidence in the reliability of the King composite score as a measurement of legislative professionalization.

Table 2

*Intercorrelations for Affordability and the Individual
Items of Beyle (1999) Scale for Institutional Strength of
the Governor*

Variables	1	2	3	4	5	6
1. Affordability	--					
2. SEP	-.166	--				
3. AP	-.030	.328	--			
4. BP	-.185	.222	.145	--		
5. VP	.186	-.007	-.255	.077	--	
6. PC	.205	.063	.031	.006	.194	--
7. TP	.404	-.006	-.155	-.025	.479	.116

Note. SEP = separately elected powers, AP = appointment power, BP = budgetary power, VP = veto power; PC = party control, TP = tenure potential (Beyle, 1999).

Descriptive Statistics

Data collection for this study proceeded as outlined in Chapter III. Political science and higher education literature provided theoretical support and data measurement for the dependent variable and all independent variables for all 50 states.

Table 3 shows the descriptive statistics for the participants. Number (*n*) and percentage (%) describe the categorical variables. The range, mean, and standard deviation (SD) describe interval-level variables.

Descriptive statistics showed that the governor tenure potential in most states (74%) was a four-year term with the possibility of two additional terms. Fifty percent of the states had dominant/complementary special interest group (SIG) structures, while 32% of the states had complementary SIG structures. Ninety percent of the states had the two most centralized higher education governance structures: (a) strong coordinating boards or (b) consolidated governing boards. Legislative professionalization scores ranged from .06 to .90 with the average being .26. The average affordability score for the states was 74.44 with a range of 49 to 100.

Table 3*Descriptive Statistics (N = 50)*

Variable	n	%	Range	Mean	SD
<u>Predictor Variables</u>					
Tenure Potential					
1 = two-year (x2) ^a					
2 = two-year (+) ^b	2	4			
3 = four-year	1	2			
Impact of SIGs					
1 = Complementary/ subordinate	4	8			
2 = Complementary	16	32			
3 = Dominant/ complementary	25	50			
4 = Dominant	5	10			

Table 3 (continued)

Descriptive Statistics

Variable	n	%	Range	Mean	SD
Higher Ed Governance					
1 = Planning	2	4			
2 = Weak coordinating	3	6			
3 = Strong coordinating	21	42			
4 = Consolidated governing	24	48			
Legislative					
professionalization			.06 - .90	.26	.15
Institutional strength					
of the governor			2.70 - 4.10	3.41	.45
<u>Dependent Variable</u>					
Affordability			49.00 - 100.00	74.44	11.72

^a(x2) = up to two reelections.

^b(+) = unlimited reelections.

^c(x3) = up to three reelections.

Multiple Regression Analysis

Multiple regression analysis provided the predictive potential of the independent variables for the dependent variable. Several analyses provided by *SPSS* indicated that the cases in this study met the assumptions for multiple regression. First, standardized residuals indicated no influential outliers in the data, because no cases in this study were greater than 3.00 or less than -3.00. The Cook's distance analysis also indicated no influential cases; no distance was greater than 1.00.

A normal curve superimposed over the standardized residual histogram and a plot of standardized residuals along a diagonal line indicated that the cases met the normality assumption. Evidence for the assumption of homoscedasticity existed as scatterplot points for the standardized predicted value compared to the studentized residual were scattered randomly above and below the vertical axis line at zero.

Omnibus Results (Research Question One)

The simultaneous entry of independent variables produced an omnibus result for the proportion of effect of the independent variables on the dependent variable. Table 4 shows the result of Pearson product-moment correlations among the criterion variable and the predictor variables

Table 4

*Intercorrelations of Variables for Affordability Regression
with Beyle (1999) Composite Score*

Variable	1	2	3	4
1. Affordability	- -			
2. Institutional strength of the governor	.082	--		
3. Legislative professionalization	.188	.143	--	
4. Impact of SIGs	.081	-.183	-.036	--
5. State HE governance	-.130	-.034	-.387	-.018

using the composite Beyle (1999) score. Table 5 shows the result of Pearson product-moment correlations among the criterion variable and the predictor variables using the score for the tenure potential of the governor.

Tables 6 and 7 display the results of the simultaneous entry regression analyses of the political culture and higher education governance structure to affordability. The tables include the unstandardized regression coefficients (B), the standard errors of regression coefficients (SEB), the standardized regression coefficients (β), and the squared semi-partial correlations (sr^2). The tables also show the sum of the squared semi-partial coefficients and the proportion of variance in the criterion accounted for by the linear combination of the predictor variables (R^2).

Regression with tenure potential. The omnibus R^2 for the regression model was .19, signifying that 19% of the variance in the state affordability grade was explained by the combination of political culture and governance variables (see Table 6). Cohen, Cohen, Aiken, and West (2003) characterized a population R^2 of .13 as a medium effect size and a population R^2 of .26 as a large effect size. The observed R^2 in this study fell between these standard population effect sizes.

Table 5*Intercorrelations for Variables for Affordability**Regression with Beyle (1999) Tenure Potential Score*

Variable	1	2	3	4
1. Affordability	--			
2. Tenure potential of the governor	.404	--		
3. Legislative professionalization	.188	.143	--	
4. Impact SIGs	.081	-.183	-.036	--
5. State HE governance	-.130	-.034	-.387	-.018

Table 6*Summary of Standard Regression Analysis with Affordability*

Variable	B	SEB	β	sr^2
HE governance	-1.366	2.214	-.090	.007
Impact of SIGs	.695	2.031	.046	.002
Tenure potential of the governor	7.479	2.653	.385	.143
Legislative professionalization	7.830	11.699	.099	.008

^a $\Sigma = .160$

Note. $R^2 = .190$

^aThe sum of the squared semi-partial coefficients indicates the amount of variance accounted for by adding the unique contribution of each independent variable. The difference between the sum of squared semi-partial coefficients and the R^2 is an indication of variance due to overlap in the independent variables.

Table 7*Summary of Standard Regression Analysis with Affordability*

Variable	<i>B</i>	<i>SEB</i>	β	sr^2
HE governance	-.987	2.390	-.065	.004
Impact of SIGs	1.494	2.220	.099	.010
Institutional strength of the governor	1.980	3.922	.075	.005
Legislative professionalization	12.334	12.601	.156	.020
				^a $\Sigma = .039$

Note. $R^2 = .052$

^aThe sum of the squared semi-partial coefficients indicates the amount of variance accounted for by adding the unique contribution of each independent variable. The difference between the sum of squared semi-partial coefficients and the R^2 is an indication of variance due to overlap in the independent variables.

The standardized Beta coefficients in the regression model provided the relative contributions of the independent variables. Tenure potential of the governor had the highest Beta coefficient ($\beta = .385$), followed by legislative professionalization ($\beta = .099$), higher education governance structure ($\beta = -.090$), and impact of special interest groups ($\beta = .046$). The three predictor variables with positive Beta coefficients (i.e., governor tenure potential, legislative professionalization, and impact of SIGs) were associated with increased affordability as their levels increased. Higher education governance structure had a negative coefficient representing an inverse relationship with affordability; therefore, more decentralized governance structures were more affordable.

Regression with Beyle (1999) composite score. The omnibus R^2 for the regression model was .05, signifying that 5% of the variance in the state affordability grade was explained by the combination of political culture and governance variables (see Table 7). Cohen et al. (2003) characterized a population R^2 of .02 as a small effect size and a population R^2 of .13 as a medium effect size. The observed R^2 in this study fell between these standard population effect sizes.

The standardized Beta coefficients in the regression model provided the relative contributions of the independent variables. Legislative professionalization had the highest Beta coefficient ($\beta = .156$), followed by the impact of special interest groups ($\beta = .099$), institutional strength of the governor ($\beta = .075$), and higher education governance structure ($\beta = -.065$). The three predictor variables with positive Beta coefficients (i.e., legislative professionalization, institutional strength of the governor and impact of SIGs) were associated with increased affordability as their levels increased. Higher education governance structure had a negative coefficient representing an inverse relationship with affordability; therefore, more decentralized governance structures were more affordable.

The results of these omnibus multiple regression analyses addressed the first research question and provided evidence to reject the first null hypothesis of this study. The combination of political culture and governance structure variables did explain variance in state affordability for higher education in both regression models.

Squared Semi-partial Coefficient Analysis (Research Questions 2-5)

The second through fifth research questions addressed the unique contribution of each independent variable to the variance in the dependent variable. In addition to the omnibus results, the multiple regression analysis also provided squared semi-partial coefficients (sr^2) for each independent variable. The sr^2 shows the individual variable correlation to the dependent variable with variance from other independents removed. Analysis of these sr^2 coefficients provided information as to their unique contribution.

Regression with tenure potential. The sr^2 for each independent variable, shown in Table 6, was (a) tenure potential of the governor ($sr^2 = .143$), (b) legislative professionalization ($sr^2 = .008$), (c) higher education governance ($sr^2 = .007$), and (d) impact of SIGs ($sr^2 = .002$). Cohen et al. (2003) characterized the sr^2 value of one independent variable as the proportion of the dependent variable that the other independent variables did not explain. Cohen et al. defined small effects of variables as squared semi-partial correlations of 2%, medium effects as 15%, and large effects as 35%. By these standards, three of the variables had very little unique effect on

affordability. Higher education governance, impact of SIGs, and legislative professionalization had sr^2 values less than 1%. The tenure potential of the governor explained 14% of unique variance in affordability. This value is very near the medium effect size.

The results of the squared semi-partial analysis for this regression gave evidence to reject null hypotheses two, three, four, and five. The impact of special interest groups, legislative professionalization, and higher education governance structure contributed to the variance in affordability, but the effect was very small. Tenure potential of the governor explained 14% of the unique variance in affordability.

The sum of the squared semi-partial coefficients was .160. Subtracting this figure from the total proportion of variance (R^2) indicated that overlap among the independent variables accounted for 3% of the total variance in the dependent variable.

Regression with Beyle (1999) composite score. The sr^2 for each independent variable (see Table 7) was (a) institutional strength of the governor ($sr^2 = .005$), (b) legislative professionalization ($sr^2 = .02$), (c) higher education governance ($sr^2 = .004$), and (d) impact of SIGs ($sr^2 = .01$). By the Cohen et al. (2003) standards, three of

the variables had very little unique effect on affordability. Higher education governance, impact of SIGs, and the institutional strength of governors had sr^2 values of 1% or less. Legislative professionalization explained 2% of unique variance in affordability. This represented a small effect by Cohen et al. standards.

The results of the squared semi-partial analysis for this regression gave evidence to reject null hypotheses two, three, four, and five. The impact of special interest groups, institutional strength of the governor, and higher education governance structure provided some unique contribution to the variance in affordability, but the effect was very small. Legislative professionalization explained 2% of the unique variance in affordability.

The sum of the squared semi-partial coefficients was .039. Subtracting this figure from the total proportion of variance (R^2) indicated that overlap among the independent variables accounted for about 1% of the total variance in the dependent variable.

Residual Scores

Residual diagnostic analysis provided information about the difference between predicted affordability scores for states and actual affordability scores. Residual numbers indicated how well each state fit into the

regression prediction model with four variables predicting affordability. Table 8 provides the case summaries of states with residual scores equal to or higher than 1.00 and equal to or lower than -1.00. The table includes the affordability score, the predicted affordability score, and the standardized residual for each state for the first regression with tenure potential. Table 9 provides the same summaries for the second regression with the composite institutional strength of the governor score. States with positive residuals exceeded the affordability prediction of the regression equation. States with negative residuals were lower than the predicted regression affordability. In both regressions, the two states with the highest positive residual were North Carolina and Utah. In both regressions, the two states with the highest negative residual were New York and Rhode Island.

Table 8

*Case Summaries for Regression Model Predicting
Affordability with Impact of SIGs, Higher Education
Governance Structure, Legislative Professionalization, and
Governor Tenure Potential*

Standardized Residual	State	Affordability Score	Predicted Value
-2.21719	New York	60.00	84.40544
-2.01554	Rhode Island	49.00	71.18581
-1.60306	Maine	54.00	71.64550
-1.25555	Ohio	62.00	75.82030
-1.09425	Oregon	61.00	73.04478
-1.03047	Massachusetts	63.00	74.34273
-1.02311	Montana	61.00	72.26179
1.09857	Illinois	95.00	82.90768
1.22675	Kansas	86.00	72.49669
1.35051	Minnesota	94.00	79.13447
1.73825	California	100.00	80.86648
2.09722	Utah	98.00	74.91515
2.12721	North Carolina	96.00	72.58508

Table 9

*Case Summaries for Regression Model Predicting
Affordability with Impact of SIGs, HE Governance
Structure, Legislative Professionalization,
and Beyle (1999) Composite Score*

Standardized Residual	State	Affordability Score	Predicted Value
-1.70401	Rhode Island	49.00	69.28802
-1.69151	New York	60.00	80.13920
-1.61082	New Hampshire	50.00	69.17855
-1.47822	Maine	54.00	71.59981
-1.41074	Ohio	62.00	78.79633
-1.05912	Oregon	61.00	73.60992
-1.03978	West Virginia	63.00	75.37965
-1.03866	Montana	61.00	73.36639
-1.03622	Florida	64.00	76.33730
1.01340	Kansas	86.00	73.93439
1.06748	Wisconsin	87.00	74.29054
1.39407	California	100.00	83.40214
1.54578	Illinois	95.00	76.59582
1.88040	Minnesota	94.00	71.61186
2.04147	North Carolina	96.00	71.69408
2.17976	Utah	98.00	72.04762

CHAPTER V

DISCUSSION

This study examined the combined predictive potential of political culture and higher education governance variables in higher education affordability. Multiple regression and Pearson Product Moment correlations provided statistical information about the influence of the predictor variables on the dependent variable.

The significance of this study lay in public outcries for more affordable higher education combined with little previous research helpful in understanding state variance in affordability. This chapter presents discussion of the research findings in four sections: (a) Discussion of the results for each research question, (b) Implications for policy, restructuring, and leadership, (c) Future research, and (d) Conclusions.

Discussion of the Results

Research Question 1

Research question one explored the degree that combined political culture and governance structure characteristics contributed to explaining differences in

higher education affordability among states. The results of the multiple regressions on affordability gave evidence to reject the first null hypothesis. The combination of political culture and governance structure variables did explain variance in the affordability performance of states.

In the regression using the Beyle (1999) composite score for the institutional powers of the governor along with legislative professionalization, impact of SIGs, and higher education governance structure, the effect size on affordability was small. In the regression using the Beyle tenure potential item in place of the composite score, the effect size of the variables was medium. These results confirm previous research that state political culture and governance structure variables are important in predicting matters of performance and affordability in higher education (Hearn & Griswold, 1993; Bracco, Richardson, Callan, & Finney (1999); Griswold, 1999; McGuinness, 2002).

Research Question Two

Research question two addressed the degree that the impact of special interest groups uniquely explained differences in higher education affordability among states. The analysis of semi-partial coefficients showed that the impact of SIGs had either a very small unique effect (1%)

or almost no unique effect (.2%). The Beta coefficients for the impact of SIGs were positive in both regressions showing that the dominance of SIG influence in a state did not hurt, but even helped, affordability. Higher education literature hypothesized that SIG influence was negative toward state higher education interests (Benjamin & Carroll, 1998; Gittell & Kleiman, 2000; Pusser, 2001), but in the area of affordability, this research did not support those claims.

Research Question Three

Research question three explored the degree that the professionalization of the state legislature uniquely explained differences in higher education affordability among states. The analysis of semi-partial coefficients showed that the professionalization of the legislature had very small (.8%) or small (2%) unique effects. The Beta coefficients for legislative professionalization were positive in both regressions showing that more professionalized legislatures were associated with increased affordability.

In previous research, Peterson (1976) found significant negative correlations between legislative professionalization and state appropriations to higher education. Sabloff (1997) found significant correlations

between legislative professionalization and legislation increasing regulation of higher education institutions.

The results of this present study in light of the negative correlation in the Peterson study prompted two observations. First, the role of the legislature may have changed in the 24 years between the Peterson study and the present study so that more professionalized legislatures are associated with higher appropriations. Second, more professionalized legislatures may be associated with broader affordability policies to counteract lower appropriations. Future research could explore these disparities. In either case, even though professionalized legislatures were associated with better affordability, the effect was small.

Research Question Four

Research question four explored the degree that the institutional strength of the governor uniquely explained differences in higher education affordability among states. The analysis of semi-partial coefficients showed that the institutional strength of the governor in the second regression had a very small (.5%) unique effect. The tenure potential of the governor in the first regression had a moderately large (14%) unique effect. The Beta coefficients for this variable were positive in both

regressions showing that institutionally stronger governors and longer governor tenures were associated with increased affordability.

The reliability of the Beyle (1999) composite score for the institutional power of the governor is very important in interpreting the results of this variable. Both higher education and political science literature reported in previous chapters are in overwhelming agreement about the substantial role of the governor in higher education policy. There was a low effect of the institutional power of the governor in the second regression analysis. It seems unlikely that this reflects the true relationship between the construct, institutional power of the governor, and affordability. Measurement error from low consistency in the composite score appears to be a more plausible explanation of the low effect size.

Further analysis of the relatively large effect of governor tenure potential is also necessary. Is the effect size actual or spurious in the first regression? Results of a Griswold (1999) study indicated that changes in presidential administration often affected the work of the National Commission on Student Financial Assistance. New leadership altered goals, timeframes, and priorities. Griswold noted that the changes in administration diluted

the work of the commission. Presidential changes at the national level could be analogous to gubernatorial changes on the state level. Beyle (1999) noted that governors in office longer had more time to carry out their programs. In the same vein, Lewis and Maruna (1999) observed that governors were often ineffectual in education matters due to operating in electoral timeframes. In consideration of these studies, tenure potential is a reasonable indicator of governor strength and a plausible predictor of affordability.

Research Question Five

Research question five explored the degree that the state higher education governance structure uniquely explained differences in higher education affordability among states. The analysis of semi-partial coefficients showed that higher education governance structure had very small (.4% or .7%) unique effects in both regressions. The Beta coefficients for this variable were negative in both regressions showing that decreasing centralization was associated with increased affordability, although the effect was very small.

These results parallel the work of Hearn and Griswold (1993) who found that centralized governance structures were not associated with innovative affordability policies.

These results also help confirm studies indicating that state higher education governance systems have not adequately coordinated all aspects of affordability policy, including financial aid, appropriations, and tuition, particularly in light of state economic conditions (Hearn, Griswold, & Marine, 1996; Hossler, 1997; Merisotis, 1997; Marcus, 1997).

Implications

This study contributes to the body of research about the effect of political and structural factors on higher education affordability. Results have implications for policy, higher education structuring, and state leadership.

Policy

In October of 2003, Republicans in the United States House of Representatives introduced a bill to penalize colleges that increase their tuition by suspending some federal student aid for their campuses (Burd, 2003). Breneman (2003) criticized this move, because it ignored the role that states play in the affordability of higher education. Democrats responded to the Republican bill with a proposal to penalize states that decrease their appropriations to higher education (Potter, 2003).

This most recent national debate reiterates an ongoing controversy of the appropriate distribution of

responsibility and authority for state higher education performance. As the literature reviewed in previous chapters illustrated, pundits have debated the proper roles and contributions of the state, the campus, and the market throughout the history of American public higher education.

In the matter of affordability, the results of this study, as well as those in the Martinez (2003) study, indicated that the state had a substantial effect in performance. The linear combination of state political culture and governance structure variables contributed 19% to the variance in state affordability grades.

Higher Education Restructuring

McGuinness (2002) reported that states typically restructured their higher education governance systems as a method of achieving educational reform. He admonished that restructuring often failed to meet objectives, because leaders had not adequately evaluated the effects of structure on educational outcomes.

This study shows that governance structure has very little effect on the affordability of higher education. The small, observed effect indicates increased affordability with decreased centralization structures.

Previous research indicated an association between centralized structures and lower tuition (Hearn, Griswold,

& Marine, 1996; Lowry, 2001) and higher affordability (Richardson et al., 1999). Future research should explore whether decentralization increases the efficiency for local campuses, or if the strength of the governor regulates affordability and creates redundancy in the effect of higher education governance structures.

Leadership

The effect size for the governor tenure potential indicates at least two effects for the role of the governor in affordability. First, longer governor tenure potential states are associated with increased affordability. Second, governors with longer tenure have affected the affordability of higher education in their states. While the tenure variable measured the potential for effect, the positive direction of the relationship indicated that governors have uniquely contributed to better affordability in their states. These results are both an indication of structure and leadership and confirm what Richardson et al. (1999) maintained: that structural factors and leadership character combined to contribute to higher education performance.

Future Research

This research was only the second study evaluating predictor variables for state affordability grades.

Martinez (2003) examined state appropriation and state characteristic variables to predict affordability. This current research used state political culture and governance structure variables to predict affordability. Future research might evaluate further predictors of state affordability, including characteristics of local campuses.

The body of research concerning state affordability would also benefit from more information concerning the role of the governor in higher education affordability. While this study examined institutional powers, future research might examine personal powers of the governor to glean information about specific leadership styles and priorities.

The residual values of this study presented one more possibility for future research. Case studies of states that were more affordable or less affordable than the regression prediction observations would illuminate further information concerning state affordability.

Conclusion

The problem that precipitated this study and illustrated by the most recent national debate was that state leaders could not create effective policy to improve affordability without understanding factors affecting public university performance. This study ascertained that

the combined influence of political culture and the higher education governance structure affected the affordability of higher education.

This research supports the need for state and campus officials to collaborate on issues of affordability and higher education performance. This study reinforces the suggestion by numerous researchers and analysts reviewed in previous chapters that education stakeholders work together in establishing comprehensive policies that coordinate state appropriations, local tuition prices, and financial aid.

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APPENDIX A

State Classification for Thomas and Hrebenar (1999) Impact
of Special Interest Groups

Dominant	Dominant/ complementary	Complementary	Complementary/ subordinate
Alabama	Arizona	Colorado	Minnesota
Florida	Arkansas	Delaware	Rhode Island
Nevada	Alaska	Indiana	South Dakota
S. Carolina	California	Hawaii	Vermont
W. Virginia	Connecticut	Maine	
	Georgia	Massachusetts	
	Idaho	Michigan	
	Illinois	Missouri	
	Iowa	New Hampshire	
	Kansas	New Jersey	
	Kentucky	New York	
	Louisiana	N. Carolina	
	Maryland	N. Dakota	
	Mississippi	Pennsylvania	
	Montana	Utah	

Appendix A (continued)

Dominant	Dominant/ complementary	Complementary	Complementary/ subordinate
	Nebraska	Wisconsin	
	New Mexico		
	Ohio		
	Oklahoma		
	Oregon		
	Tennessee		
	Texas		
	Virginia		
	Washington		
	Wyoming		
N = 5	N = 24	N = 16	N = 4

Appendix B

State Scores for Legislative Professionalization and the Institutional Power of the Governor

State	LPS	GIP	SEP	TP	AP	BP	VP	PC
AL	.14	2.7	1.0	4.0	2.0	3	4	2
AK	.45	3.8	5.0	4.0	3.5	3	5	2
AZ	.28	3.3	1.5	4.0	2.5	3	5	4
AR	.15	2.8	2.5	4.0	2.5	3	4	1
CA	.90	3.0	1.0	4.0	3.0	3	5	2
CO	.27	3.7	3.0	4.0	4.0	3	5	3
CT	.32	3.7	4.0	5.0	3.0	3	5	2
DE	.19	3.3	2.0	4.0	3.0	3	5	3
FL	.35	3.1	3.0	4.0	1.5	3	5	2
GA	.14	2.9	1.0	4.0	.5	3	5	4
HI	.32	4.1	5.0	4.0	2.5	3	5	5
ID	.17	3.7	2.0	5.0	2.0	3	5	5
IL	.38	3.3	4.0	5.0	3.0	3	5	3
IN	.19	3.2	3.0	4.0	4.0	3	2	3
IA	.24	3.8	3.0	5.0	3.0	3	5	4

Appendix B (continued)

State	LPS	GIP	SEP	TP	AP	BP	VP	PC
KS	.18	3.7	3.0	4.0	3.0	3	5	4
KY	.17	3.5	3.0	4.0	3.0	3	4	4
LA	.25	3.1	1.0	4.0	3.5	3	5	2
ME	.16	3.4	5.0	4.0	3.5	3	4	1
MD	.27	4.1	4.0	4.0	2.5	5	5	4
MA	.33	3.0	4.0	4.0	1.0	3	5	1
MI	.50	3.6	3.0	4.0	3.5	3	5	3
MN	.25	3.6	4.0	5.0	2.5	3	5	2
MI	.22	2.8	1.0	4.0	2.0	3	5	2
MO	.30	3.5	2.0	4.0	2.5	3	5	4
MT	.15	3.6	3.0	4.0	2.5	3	5	4
NE	.25	3.7	3.0	4.0	3.0	4	5	3
NV	.20	3.0	2.5	4.0	3.5	3	2	3
NH	.06	2.8	5.0	2.0	3.0	3	2	2
NJ	.37	4.1	5.0	4.0	3.5	3	5	4
NM	.09	3.5	3.0	4.0	4.0	3	5	2
NY	.66	4.1	4.0	5.0	3.5	4	5	3
NC	.28	2.7	1.0	4.0	3.0	3	2	3
ND	.10	3.8	3.0	5.0	2.5	3	5	4
OH	.43	4.1	4.0	4.0	4.5	3	5	4
OK	.28	2.7	1.0	4.0	1.0	3	5	2
OR	.25	3.1	2.0	4.0	2.5	3	5	2

Appendix B (continued)

State	LPS	GIP	SEP	TP	AP	BP	VP	PC
PA	.40	4.1	4.0	4.0	4.5	3	5	4
RI	.19	2.8	2.5	4.0	4.0	3	2	1
SC	.21	2.8	1.0	4.0	2.0	2	5	3
SD	.11	3.8	3.0	4.0	3.5	3	5	4
TN	.18	3.6	4.5	4.0	4.0	3	4	2
TX	.23	3.3	1.0	5.0	3.5	2	5	3
UT	.10	4.0	4.0	4.5	3.5	3	5	4
VT	.28	2.9	2.5	2.0	4.0	3	2	4
VA	.24	3.3	2.5	3.0	3.5	3	5	3
WA	.30	2.9	1.0	4.0	2.5	3	5	2
WV	.16	3.8	2.5	4.0	4.5	5	5	2
WI	.33	3.7	3.0	5.0	2.0	3	5	4
WY	.07	3.6	2.0	4.0	3.5	3	5	4

Note. LP = legislative professionalization score (King, 2000); GIP = composite gubernatorial institutional power score, SEP = separately elected powers, TP = tenure potential, AP = appointment power, BP = budgetary power, VP = veto power; PC = party control (Beyle, 1999).

Appendix C

State Classifications for McGuinness (1997) Higher Education Governance Structure

Consolidated governing boards	Strong coordinating board	Weak coordinating board	Planning agency
Alaska	Alabama	California	Delaware
Arizona	Arkansas	New Mexico	Michigan
Florida	Colorado	Pennsylvania	
Georgia	Connecticut		
Hawaii	Illinois		
Idaho	Indiana		
Iowa	Kentucky		
Kansas	Louisiana		
Maine	Maryland		
Minnesota	Massachusetts		
Mississippi	Missouri		
Montana	Nebraska		
Nevada	New Jersey		
New Hampshire	New York		

Appendix C (continued)

Consolidated governing boards	Strong coordinating board	Weak coordinating board	Planning agency
North Carolina	Ohio		
North Dakota	Oklahoma		
Oregon	South Carolina		
Rhode Island	Tennessee		
South Dakota	Texas		
Utah	Virginia		
Vermont	Washington		
West Virginia			
Wisconsin			
Wyoming			
N = 24	N = 21	N = 3	N = 2

Appendix D

State Affordability Scores

State	Score ^a	Ability to Pay (50%)			Aid (20%)	LPO (20%)	Debt (10%)
		CC	PU4	PR4			
AL	65	77	77	65	1	47	88
AK	75	82	88	100	0	61	90
AZ	71	72	72	62	2	93	77
AR	77	85	80	67	20	73	92
CA	100	66	62	42	35	215	71
CO	81	81	87	53	45	65	81
CT	73	78	70	44	76	56	72
DE	70	84	69	74	14	71	76
FL	64	72	73	46	9	63	81
GA	68	75	81	54	0	73	80
HI	71	77	70	60	2	87	86
ID	80	89	89	57	2	78	100
IL	95	83	80	58	116	72	74
IN	79	73	75	57	73	47	92
IA	85	87	100	62	57	54	91

Appendix D (continued)

State	Score ^a	Ability to Pay (50%)			Aid (20%)	LPO (20%)	Debt (10%)
		CC	PU4	PR4			
KS	86	102	99	71	16	71	91
KY	83	100	91	70	31	63	93
LA	70	95	82	39	1	68	85
ME	54	51	65	35	27	33	86
MD	66	65	69	50	37	50	75
MA	63	80	71	38	68	44	66
MI	75	73	68	73	47	59	93
MN	94	91	97	59	103	44	98
MI	79	112	78	64	1	69	96
MO	69	75	81	60	14	68	79
MT	61	73	70	62	1	42	97
NE	77	86	91	65	10	69	88
NV	83	73	84	71	31	89	89
NH	50	64	64	50	8	29	
NJ	83	75	67	54	100	50	86
NM	84	91	72	46	26	100	91
NY	60	48	54	36	87	26	71
NC	96	80	94	54	25	149	85
ND	74	79	85	102	8	49	106
OH	62	65	65	52	36	37	86

Appendix D (continued)

State	Score ^a	<u>Ability to Pay (50%)</u>			Aid	LPO	Debt
		CC	PU4	PR4	(20%)	(20%)	(10%)
OK	81	95	94	65	17	65	92
OR	61	64	64	43	22	53	81
PA	74	72	65	47	93	46	79
RI	49	64	52	35	18	44	76
SC	73	77	72	63	22	73	87
SD	67	0	88	60	0	34	99
TN	73	88	84	53	15	66	86
TX	76	83	77	54	12	86	85
UT	98	85	114	151	3	82	91
VT	61	66	49	41	78	35	74
VA	76	85	73	62	39	68	80
WA	81	83	85	50	56	59	84
WV	63	72	67	48	21	44	94
WI	87	75	107	61	54	52	95

Appendix D (continued)

State	Score ^a	Ability to Pay (50%)			Aid	LPO	Debt
		CC	PU4	PR4	(20%)	(20%)	(10%)
WY	79	89	86	0	1	72	104

Note. These scores are the indexed scores provided by the National Report Card (NCPPE, 2000). CC = community college; PU4 = public four-year colleges; PR4 = private four-year colleges; Aid = need-based financial aid; LPO = low-priced college options; Debt = low-student debt.

^ascore = the indexed composite affordability grade.

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