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SELECTED FACTORS RELATED TO PERCEIVED LEGITIMACY OF

MANAGEMENT INNOVATIONS AND THE SUBSEQUENT ADOPTION OF

MANAGEMENT INNOVATIONS IN HIGHER EDUCATION

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SELECTED FACTORS RELATED TO PERCEIVED LEGITIMACY OF
MANAGEMENT INNOVATIONS AND THE SUBSEQUENT ADOPTION OF
MANAGEMENT INNOVATIONS IN HIGHER EDUCATION


A DISSERTATION APPROVED FOR THE
DEPARTMENT OF EDUCATIONAL LEADERSHIP AND POLICY STUDIES




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DEDICATION PAGE


To the many high school teachers and university faculty who through their craft have challenged, encouraged, and shaped the lives of so many and who have impacted indelibly my life and this work.

To the teacher of all teachers, Jesus Christ, who is the source of all knowledge and understanding and who provided the strength, clarity, and perseverance needed to complete this work. In some way, it is my hope that this work brings glory to Him.

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ABSTRACT

In 2001, Richard Birnbaum observed that management innovations, when introduced to higher education via the business sector, followed a lifecycle that led to rejection of the management innovation. The purpose of this study was to broaden our understanding of how characteristics that distinguish higher education from business organizations (power that is more dispersed; subsystems that are more loosely coupled; and organizational goals that are ambiguous) influenced perceived legitimacy and adoption of a management innovation within an institution of higher education.

Results of this sequential, explanatory mixed method study supported findings in five areas. First, the study substantiated Rogers' (1995) innovation adoption process. Second, the study substantiated that as perceived legitimacy of a management innovation increased individuals changed behaviors to align with that management innovation. Third, the study confirmed legitimacy increased when (1) outputs were defined, measurable, and linked to specific job descriptions; (2) the purpose of the management innovation was tightly coupled to the innovation's goal, the university's mission, the university's existing processes, individual goals, and individual motivation; and (3) administrators used referent or expert power. Fourth, the study indicated that the use of normative processes in developing and implementing innovations increased perceived coupling and decreased perceived ambiguity related to the management innovation and encouraged the use of referent and expert power. Finally, the study yielded results that were consistent with Birnbaum's (1998) suggestions for effective leadership within a cybernetic organization. Perhaps most important, the results of the study were incorporated into a practical model for policy makers and administrators.

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CHAPTER I

*Introduction*

According to the American Heritage Dictionary (1982), a fad "is a fashion that
is taken up with great enthusiasm for a brief period of time" (p. 485). Miniskirts, shag
carpet, harvest gold appliances, bouffants, baggy pants, super-sized value meals, and
low-carbohydrate diets are images associated with fads. There are clothing fads, hair
fads, accessory fads, electronic fads, food fads, health fads, religious fads, social fads,
business fads, and management fads. Indeed, fads seem to surface in just about every
aspect of our western culture.

Fads, in most cases, appear to be unpredictable. It is difficult to identify the new
gadget or the new style that will become a fad. Yet, the cyclical rise and fall is as
predictable as the ebb and flow of the ocean. As the wave of one fad collapses, another
fad soon rises and feeds on the remnant energy of the previous.

Just as fads exist at a societal level, fads also exist at an organizational level.
Organizational fads appear in the form of management innovations (Birnbaum, 2001).
Since the early quests of Frederick Taylor and his concept of scientific management,
experts have sought models to help organizations reach optimal efficiency – that is, the
maximization and standardization of organizational outputs through "specialization,
span of control, authority and delegation of responsibility" (Bolman & Deal, 1997, p.
38). In the last half of the twentieth century, a new round of management innovations
sought to achieve not only optimal efficiency, but to also achieve optimal effectiveness.

Organizational effectiveness moved beyond the single focus of efficiency to include

multiple dimensions indicating the progress of an organization toward achieving its

overall purpose, including variables like financial systems, management strategies,

employee satisfaction, customer satisfaction, organizational culture, and decision

making strategies. Basically, the exemplary organizational system "would have

mechanisms to ensure that institutions are operating legally, efficiently, and effectively"

while satisfying "the interest of managers, those to whom the managers are responsible,

and those who are subject to the system itself" (Birnbaum, 2001, p. 29). Because of

these effectiveness and efficiency movements, over sixty management innovations exist

in today's business world (Rigby, 1998).

Like the corporate world, higher education encountered a number of

management innovations in the last part of the twentieth century. With a few

exceptions, management innovations came typically to higher education via business or

government sectors (Birnbaum, 2001). Birnbaum used a case study approach to

examine the pathways taken by these seven management innovations and to understand

their lifecycles once adopted in higher education. The seven academic management

innovations studied by Birnbaum included: Planning Program Budgeting System,

Management By Objectives, Zero-Based Budgeting, Strategic Planning, Benchmarking,

Total Quality Management/Continuous Quality Improvement, and Business Process

Reengineering.

Each of the seven management innovations was examined individually as a

separate case study. In this examination, Birnbaum sought to understand the origin of

each management innovation, the pathway of the innovation into higher education, and

the lifecycle of the innovation once introduced to higher education. After examining each management innovation as a single case study, Birnbaum (2001) then "reviewed the cases iteratively using a process of explanation building to see if there were patterns that integrate and explain" (p. 125) the pathways and lifecycles of these seven management innovations. Essentially, Birnbaum reviewed the case studies individually and then collectively for the purpose of identifying commonalities linked to the adoption of the seven management innovations. Birnbaum searched for patterns that could provide possible insights to common beginnings of each management innovation within the business or government sectors, common introductions of these management innovations to higher education, and common adoption and implementation patterns of the management innovation once introduced to higher education.

In short, Birnbaum (2001) observed that management innovations, when introduced to higher education via the business or government sectors, followed a lifecycle that led to rejection of the management innovation. The predictable rejection of these innovations, as observed by Birnbaum (2001), raised several questions. Why would an innovation that led to increased effectiveness and efficiency in the business world be accompanied by cyclical rejection in academia? Was it because the innovations just did not work, or did other factors influence rejection of the innovation? Why did presidents and senior level administrators continue to embrace and advocate the implementation of management innovations that originated in the business sector, if the applications of innovations were problematic? Were there characteristics that distinguished higher education organizations from business organizations; and if so,

how did these distinguishing characteristics affect the adoption of management innovations?

*Background to the Problem Statement*

It is important to define innovations and to identify the conditions under which innovations are adopted successfully within higher education organizations in order to broaden our understanding of the underlying factors that led to the rejection of these innovations within higher education. Rogers (1995) defined an innovation as "an idea, practice or object that is perceived as new by an individual or other unit for adoption" (p. 11). Rogers identified five characteristics associated with the successful adoption of innovations: relative advantage (more economical, more prestigious, more satisfying); compatibility (consistent with current values and experiences); complexity (easy to understand and use); trialability (can be experimented with on a limited basis); and observability (the results can be seen). Rogers also established that innovations, when introduced to organizations, take certain paths toward "diffusion" based on these characteristics. Rogers used the term diffusion to define the "process by which an innovation is communicated through certain channels over time among the members of a social system" (p. 35). In effect, diffusion is the process through which innovations spread through an organization and is the process used by members of the organization to develop a mutual understanding of the innovation. Through the diffusion process, an innovation may be mutually accepted by most members of the organization and adopted, or the same innovation within another organization may be tried by the members of the system and rejected. Hence, the acceptance or rejection of innovation is contextual to the organization in which the innovation is being introduced and, more

specifically, is linked to individuals within the organization who socially construct the ultimate meaning of the innovation, regardless of whether the innovation is effective or not.

Therefore, , it is important to highlight organizational characteristics that differentiate higher education institutions from business organizations in order to broaden our understanding of the factors that may contribute to the adoption or rejection of management innovations in higher education These differences tie primarily to five areas: (1) characteristics associated with the production model; (2) characteristics associated with the competitive market model; (3) governance and power; (4) organizational ambiguity; and (5) coupling of subsystems. These differences and their associated impact on the adoption of management innovations will be introduced in the following paragraphs and then discussed in greater detail in Chapter II.

*The Production Model*

First, the seven management innovations studied by Birnbaum (2001) sought to increase organizational effectiveness and efficiency by reengineering the production function. The success of the production function is contingent upon the ability of an organization to standardize outputs; to identify and standardize inputs used to produce outputs; to assign quantitative measures to both inputs and outputs; and to standardize processes that convert inputs to outputs (Jones & Taylor, 1990). Basically, defining and standardizing inputs, processes, and outputs are paramount to increasing organizational effectiveness and efficiency. Higher education organizations have greater difficulty defining and standardizing inputs, processes, and outputs than perhaps most business organizations (Baldridge et al., 1977; Birnbaum 1988, 2001; Brock & Harvey, 1993;

Chaffee, 1985; Cohen & March, 1986; Gross & Grambsch, 1974; Jones & Taylor, 1990; Thuckman & Chang, 1988). Inputs and outputs, even when defined, are often difficult to measure quantitatively and, in the case of outputs, are often intangible (Baldridge et al., 1977; Chafee, 1985; Jones & Taylor, 1990). As will be discussed in greater detail in Chapter II, many other issues are associated with ambiguity: ambiguity of institutional mission; ambiguity in the optimal level of resources needed to produce one unit level of output; and ill-defined and messy processes such as the educational and learning process. In short, higher education institutions have inputs, processes, and outputs that are less defined and are less standardized than most business organizations. Each of the innovations studied by Birnbaum (2001) to some degree required standardized inputs, processes, and/or outputs. In effect, it may be difficult to implement an innovation that requires the tight coupling of the production function (input, process, and outputs) in higher education where the coupling of these variables is not so tight, if understood at all. Therefore, it appeared ambiguity tied to the production model possibility contributed to the rejection of the management innovations studied by Birnbaum.

*The Competitive Market Model*

Second, the seven management innovations studied by Birnbaum (2001) were implemented in the business sector where belief, values, and motivations are linked primarily to the competitive market model. The competitive market model is a tool used by economists to predict the behavior of markets that meet certain conditions (Baumol, 1970). The competitive market model has three fundamental conditions: (1) consumers and producers within a market must be of the same relative size; (2) the commodity

provided by all producers within a given market must be identical; and (3) consumers

and producers must be able to enter and exit the market freely (Baumol, 1970; Leslie &

Johnson, 1974). Collectively, these conditions support a free and competitive market

that is governed by supply and demand (Baumol, 1970). As will be further highlighted

in Chapter II, higher education markets do not typically meet these three characteristics

(Cheit, 1971; Leslie & Johnson, 1974).  Market differences lead to organizations where

beliefs, values, and motivations are considerably different between higher education and

business organizations. It is possible that these differences contributed to the rejection

of management innovations studied by Birnbaum.

*Organizational Governance and Power*

Governance and power are two additional characteristics that distinguish higher

education institutions from business organizations and potentially impact the adoption

of management innovations. Birnbaum (1988) noted "the concept that best reflects the

ways in which institutions of higher education differ from other organizations is

governance" and then defined governance as "the structures and processes through

which institutional participants interact with and influence each other and communicate

with the larger environment" (p. 4). Power is most often defined as the capacity to

influence (Birnbaum, 1988; Kanter, 1979; Mintzberg, 1983; Pfeffer, 1981). Most

modern academic institutions are organized based on a dual governance system that

includes two subsystems: a faculty subsystem and an administrative subsystem

(Birnbaum, 1988; Besse, 1973; Corson, 1960; Etzioni, 1964; Mintzberg, 1979). Each

subsystem has a set of values and expectations related to governance and processes to

facilitate decision making and resource allocation (Birnbaum, 1988; Corson, 1960;

Etzioni, 1964; Mintzberg, 1979). This dual system of governance is mirrored by a dual system of power structures (Etzioni, 1964; Mintzberg, 1979). As a result, governance and power in higher education organizations appear to be more pluralistic, decentralized, and dispersed than in business (Baldridge et al., 1977; Birnbaum, 1988; Cohen & March, 1986). To summarize, it appeared that governance and power within higher education organizations differed from most business organizations and might possibly be a factor that explained the rejection of the seven management innovations studied by Birnbaum.

*Organizational Ambiguity*

An additional characteristic that distinguishes higher education from the business sector is organizational ambiguity. Ambiguity is tied to two main areas: goal ambiguity and ambiguity linked to the production model. The remainder of this section will focus on goal ambiguity since ambiguity tied to the production model was addressed in a previous section and will be covered in additional detail in Chapter II.

Higher education institutions often have goals that are more ambiguous than most business organizations (Birnbaum 1988, 2001; Cohen & March, 1986) and those goals are often conflicting (Birnbaum 1988, 2001; Brock & Harvey, 1993; Cohen & March, 1986; Gross & Grambsch, 1974). Goals typically are not measurable and are not accepted by all individuals within a given institution (Birnbaum 1988, 2001; Brock & Harvey, 1993; Cohen & March, 1986; Gross & Grambsch, 1974). Goal ambiguity becomes an issue when management innovations flow from an organizational sector that can establish clear and measurable goals, inputs, process, and outputs to another organizational sector where these elements are more ambiguous (Brock & Harvey,

1993; Cohen & March, 1986). The seven innovations studied by Birnbaum (2001) required clearly articulated goals. Clear and measurable goals were foundational for determining success and for establishing accountability systems for the seven management innovations (Birnbaum, 2001). Therefore, it appeared that goal ambiguity may have contributed to the innovation shortcomings in higher education as studied by Birnbaum.

*Coupling of Subsystems*

The relationship that exists among various subsystems within an organization is a final organizational characteristic that potentially impacted the successful adoption of management innovations within higher education (Birnbaum, 2001). Weick (1976) referred to this relationship in terms of connectedness or coupling. Weick noted that subsystems are connected along a continuum that ranges from tightly coupled to loosely coupled. If two subsystems are tightly coupled, changes in one subsystem have a direct, corresponding result in the second subsystem. Conversely, if changes in one subsystem do not result in changes in a second subsystem, the relationship is considered loosely coupled.

The coupling of subsystems in higher education organizations appears to be linked to the dual governance structure: a faculty subsystem and an administrative subsystem (Birnbaum, 1988; Besse, 1973; Corson, 1960; Etzioni, 1964; Mintzberg, 1979). The values and motivations of each subsystem are more different than they are alike (Mintzberg, 1979). This difference in values and motivations contributes to subsystems within higher education organizations that are more loosely coupled than tightly coupled. Even across higher education organizations the coupling between

subsystems may vary. As an example, coupling between the two subsystems within a community college where administrative functions are more centralized may be more tightly coupled than perhaps in a research institution where administrative functions are more decentralized; hence diversity of institutions further contributes to issues surrounding coupling of faculty and administrative subsystems. The seven management innovations studied by Birnbaum (2001) were introduced via the administrative subsystem. As innovations moved from the administrative to the faculty subsystem, it is possible that a direct and corresponding change did not occur in the faculty subsystem due to loose coupling between the two subsystems, thus adversely impacting the adoption of the management innovation.

To summarize, higher education organizations differ from business organizations in five areas: characteristics associated with the production model; characteristics associated with the competitive market model; governance and power structures; organizational ambiguity; and coupling of subsystems. While all five areas are likely to impact the adoption of management innovations in higher education, it appeared from this researcher's perspective that dispersion and plurality of power, organizational ambiguity, and loosely coupled subsystems were likely to have the greatest influence on the adoption of innovations; and therefore, those areas warranted closer examination in light of commonly referenced organizational models.

*Organizational Models in Higher Education*

Through the years, four dominant models have served as frameworks to help researchers and practitioners analyze organizational characteristics and functions within higher education: the bureaucratic model, the collegial model, the political model, and

the cybernetic model (Baldridge et al., 1977; Birnbaum, 1988). While each model will be discussed in significant detail in Chapter II, it is important to examine initially how each model accommodates the three organizational characteristics that distinguish higher education organizations from businesses.

*Bureaucratic model.* First, the bureaucratic model emerged out of structural theory associated with the factory system and scientific management of the early 1900s (Shafritz & Ott, 1996), with Frederick Taylor as the father of that movement. The primary purpose of structural theory is to achieve maximum efficiency and effectiveness through standardization of the production function (Fayol, 1916; McCallum, 1856; Metcalfe, 1885; Smith, 1776; Taylor, 1916; Towne, 1886). Standardization results from reducing organizations to smaller parts, analyzing those parts for effectiveness and efficiency, and establishing controls necessary to standardize inputs, processes, and output measures associated with that part of the organization (Fayol, 1916; McCallum, 1856; Metcalfe, 1885; Smith, 1776; Taylor, 1916; Towne, 1886). Control of organizational functions and decision making within the bureaucratic model are linked to the hierarchical structure (Baldridge, et al., 1977, Birnbaum, 1988; Bolman & Deal, 1997; Shafritz & Ott, 1996). Hence, the adoption of a management innovation in the bureaucratic model appeared to be contingent primarily upon a leader of the institution or the leader of a subsystem deciding to implement the innovation. Once it is decided by the leader to adopt the innovation, subordinates will follow.

Structural models do not appear to accommodate plurality of power, organizational ambiguity, and loosely coupled subsystems. Centralized power is required in order to standardize the production function of the organization and to

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achieve a desired level of efficiency and effectiveness (Baldridge, et al., 1977,

Birnbaum, 1988; Bolman & Deal, 1997; Shafritz & Ott, 1996). Clearly defined goals,

identified inputs, standardized processes, and measurable outputs are foundational

organizational requirements within structural models (Baldridge, et al., 1977, Birnbaum,

1988; Bolman & Deal, 1997; Gulick, 1937; Mintzberg, 1979; Shafritz & Ott, 1996;

Weber, 1922); hence, goal ambiguity and ambiguity tied to the production function are

not accommodated by structural models. With regard to the coupling of subsystems, the

structural models focus primarily on two subsystems: management and laborers (Fayol,

1916; Gulick, 1937; McCallum, 1856; Metcalfe, 1885; Shafritz & Ott, 1996; Smith,

1776; Taylor, 1916; Towne, 1886; Weber 1922). It appeared that the bureaucratic

model required these subsystems be more tightly coupled than loosely coupled in order

to achieve maximum effectiveness and efficiency. In short, structural models provided a

potential framework to understand the operations of some types of higher education

organizations, such as smaller community colleges; however, structural models did not

appear to accommodate the three distinctive characteristics associated with most higher

education organizations, and structural models appeared to be less likely to provide a

framework from which to understand the adoption of management innovations in higher

education.

    *Collegial model.* Second, the collegial model grew out of human resource

theory that emerged near the end of World War II as the result of organizational

theorists challenging foundational assumptions of structural theory (Barnard, 1938;

Shafritz & Ott, 1996; Simon, 1946). While structural theorists sought to increase

effectiveness and efficiency through reductionist approaches leading to the one-best-

way, human resource theorists linked increased effectiveness and efficiency to the alignment of human and organizational needs (Barnard, 1938; Bolman & Deal, 1997; Maslow, 1943; Mayo, 1933; McGregor, 1957; Selznick, 1948; Simon, 1946). Essentially, people and organizations need each other. When the needs of the individuals working in an organization align with the needs of that organization, effectiveness and efficiency increase. In higher education, human resource theory gave birth to the collegial model. The collegial model views a higher education organization as a community of scholars where democratic decision making emphasizing thoroughness, deliberation, and consensus is paramount (Baldridge et al., 1977). Therefore, the successful adoption of a management innovation within a collegial organization would most likely be contingent upon the care given to develop consensus among various constituencies prior to adoption and the congruence of the innovation with existing values of the organization (Baldridge et al., 1977; Birnbaum, 1988; Downey, 1996; Millet, 1962; Sanders, 1973).

How did the collegial model accommodate the three characteristics that distinguish business organizations from higher education organizations? With regard to plurality of power, it appeared effectiveness and efficiency shifted from standardization of the production function to effectiveness and efficiency linked to social and behavioral networks. Essentially, power shifted from being linked solely to a centralized hierarchical structure to being more dispersed across the social and behavioral structures of the organization (Barnard, 1938; McGregor, 1957; Selznick 1948; Shafritz & Ott, 1996; Simon 1946). While human resource theory appeared to accommodate plurality of power, ambiguity tied to the production function was not

accommodated. Organizational success continued to be defined by measurements tied to the standardization of the production function (Barnard, 1938; McGregor, 1957; Selznick 1948; Shafritz & Ott, 1996; Simon 1946). On the other hand, the literature indicated that human resource theory allows for subsystems that are both loosely and tightly coupled (McGregor, 1957; Selznick, 1948). To summarize, human resource theory, in general, supported two of the three characteristics that distinguish higher education organizations from business and provided a potential framework from which to analyze the adoption of management innovations in higher education.

*Political model.* Political theory in higher education emerged in the 1960s. During this period, many institutions grew in size. As growth occurred, institutional missions became less clear, plurality of power increased, and goals became increasingly divergent (Birnbaum, 1988). The bureaucratic and collegial models did not adequately accommodate these new organizational characteristics (Birnbaum, 1988). Political theory provided a potential new framework from which to study these phenomena and to understand organizational processes within higher education organizations.

Political organizations are viewed as dynamic and complex systems of political coalitions that include individuals who engage in politics (Bacharach & Lawler, 1980; Birnbaum, 1988; Bolman & Deal, 1997; Cyert & March, 1963; March, 1962; Mintzberg, 1983; Pfeffer, 1981). Politics is defined as an activity in which one engages in order to acquire or exert power necessary to promote the self-interest of an individual or group and to influence organizational decisions (Allen et al., 1979; Pfeffer, 1981). The political model is driven by the needs of individuals or groups to obtain desired resources and the use of power by those individuals or groups to obtain those resources

(Pfeffer, 1981). Therefore, the adoption of an innovation would be most contingent upon the political power, timing, persuasion, and diplomacy of individuals within the organization and the political power of the various political coalitions at the time of adoption.

The political perspective generally supported the three characteristics that distinguish higher education organizations from businesses. Power within the political model is more dispersed than centralized given that power is more contingent upon an individual, the political skill of that individual, and the willingness of that individual to engage in the political process (Birnbaum, 1988; Bolman & Deal, 1997; Brown, 1986; Kipnis, 1974; Mazzoni, 1991; Mintzberg, 1983; Pfeffer, 1981; Scheff, 1970). Additionally, ambiguity tied to the production function is a characteristic supported by the political model (Baldridge et al., 1977; Birnbaum, 1988; Bolman & Deal, 1997; Michealsen, 1981; Mintzberg, 1983; Pfeffer, 1981; Weatherly & Lipsky; 1977). Goals and attempts to define the production function are the result of political bargaining, negotiating and jockeying that promotes the self-interest of individuals and coalitions involved in the process (Baldridge, 1997; Bolman & Deal, 1997; Michealsen, 1981; Mintzberg, 1983; Pfeffer, 1981; Weatherly & Lipsky, 1977). As a result, ambiguous and conflicting goals as well as conflicting production processes often emerge from the political process. Finally, it appeared the political model allows for subsystems that are more loosely coupled than tightly coupled even in higher education institutions where there is no agreement on organizational mission (Baldridge et al., 1977; Birnbaum, 1988; Steinbruner, 1974). Dynamic political processes that are motivated by self interest seem to require subsystems that are more flexible and fluid (Birnbaum, 1988).

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However, it is possible that subsystems linked to stable political coalitions might become more tightly coupled than loosely coupled over time (Birnbaum, 1988; Bolman & Deal, 1997; Brown, 1983; Pfeffer, 1981). In summary, the political model appeared to accommodate adequately the three organizational characteristics that distinguish higher education from business and provided a potential framework to broaden our understanding of the adoption of management innovations in higher education.

Up to this point, three organizational models have been highlighted: the bureaucratic model, the collegial model and the political model. These models were unlikely to provide a guiding framework because of two overarching issues. First, these models provided a single paradigm through which to interpret events and understand relationships within an organization. Basically, while each model might in and of itself provide a good snapshot of an organization, no single model captured accurately the complex nature of a higher education organization. Second, these models reduced organizational understanding to a single perspective as a means to facilitate increased organizational effectiveness and efficiency. This myopic perspective is rooted in deterministic values rather than normative values. These single perspective models limit the understanding of complex organizations like colleges and universities, which have come to be viewed as more dynamic, normative systems (Wheatley, 1999). Dynamic systems require organizational models that provide increased understanding and analysis tied to unpredictability, self-creation, and autonomy (Birnbaum, 1988; Fleener, 2002). In effect, complex organizations require a complex paradigm from which to understand organizational functions and decision-making processes. The bureaucratic, collegial, and political models as individual models did not support this complex

paradigm and thus did not provide a framework from which to broaden our understanding of the adoption of management innovations in higher education (Birnbaum, 1988).

*Cybernetic model.* In 1988, Birnbaum proposed a more complex organizational model for higher education: the cybernetic model. Birnbaum theorized that increased environmental complexity within and external to an organization is met with increased organizational complexity. Birnbaum suggested that decision making in a complex organization is better facilitated through smaller, stable subsystems. In a cybernetic organization, linkages within each subsystem are more tightly coupled while linkages across subsystems are more loosely coupled. Therefore, loosely coupled subsystems may strategically focus on a small set of specific inputs, processes, and outputs (Birnbaum, 1988). Through these loosely coupled subsystems, the cybernetic institution may then respond to a large number of ill-defined and conflicting goals and accommodate dispersion of power (Birnbaum, 1988). In essence, a leader of one subsystem within a cybernetic organization may have increased flexibility to base decisions on the goals, values, and beliefs of the subsystem without impacting other subsystems. As noted by Birnbaum (1988), "focusing attention only on the limited interest of subunits enormously simplifies rationality and makes organizational life manageable" (p. 196).

In such a decentralized model, what is the role of centralized processes and leadership? Centralized processes and leadership in a cybernetic model focus largely on three areas: designing data collection and communication systems; responding to organizational crises; and making subtle interventions (Birnbaum, 1988). A balance

between centralized and decentralized functions within the cybernetic system is achieved through subsystems that are more loosely coupled.

Initially, it appeared Birnbaum's cybernetic model accommodates the three factors that distinguish higher education organizations from business organizations. Additionally, the cybernetic model is more complex than the bureaucratic, collegial, and political models in that the cybernetic model provides multiple perspectives from which to analyze and understand organizational process. The cybernetic model contains elements of the bureaucratic, collegial, and political models as well as normative and deterministic elements. In essence, the cybernetic perspective sees higher education institutions as "learning" organizations that have the capacity to evolve; capacity to learn from past experiences; capacity to solve problems; capacity to develop a shared vision; and capacity to learn together (Johnson, 1998; Senge, 1990, 2000). Therefore, the cybernetic model appeared to accommodate the complexity of higher education organizations and served as the guiding organizational framework for this proposed study.

The question now becomes, what factors might contribute to the adoption of a management innovation in higher education in light of the cybernetic model? It appeared that the adoption of a management innovation in a cybernetic organization was contingent upon decentralized and centralized elements of the organization. From a decentralized perspective, successful adoption appeared contingent upon the leadership of various subsystems and the congruency of the innovation with the values, beliefs, and goals of the subsystem. From a centralized perspective, adoption was contingent upon the capacity of the leadership to introduce the innovation as a response: as a

response to a crisis; as a response to a problem that has been identified through data collection procedures; as a response to an innovation that has been successfully adopted in one subsystem that can be shared with another subsystem encountering similar issues with similar values, beliefs, and goals; or as a subtle response to improve selected activities within a specific subsystem.

*Summary of organizational theory.* Increased organizational complexity during the twentieth century was accompanied by organizational models that attempted to explain that complexity. Each model provided differing and increasingly complex views of power, coupling, and goal ambiguity. It was evident that organizational perspectives outgrew the early structuralists' interpretations that viewed higher education organizations as similar to deterministic business models. Instead the literature supported a view where academic institutions are seen as complex organizations that are perhaps more normative than deterministic with subsystems that are more loosely coupled, thus allowing them to handle ambiguity of power and ambiguity tied to the production function.

If academic organizations are more normative than deterministic, why then do these normative organizations continue to look to the rational paradigm for management innovations? The seven rejected management innovations studied by Birnbaum (2001) were rooted in the rational paradigm – that is, the innovations sought to maximize effectiveness and efficiency through standardization of the production function. Even in light of complex organizational models and understanding that better account for the unique organizational characteristics and dynamics of higher education, management innovations rooted in the rational paradigm continue to circulate through higher

education (Best, 2006; Birnbaum, 2001). Why? Was it possible that rejected

management innovations served some other purpose than increased effectiveness and

efficiency?

*Benefits of Management Innovations*

Indeed, Birnbaum (2001) cited a number of benefits linked to rejected

management innovations and those benefits are noted below, but will be discussed more

fully in Chapter II. First, Birnbaum concluded management innovations provided a

catalyst to examine, to reexamine, and to consider the potentiality of change. Second,

the adopted management innovations elevated the importance of data at a time when

higher education was accountable increasingly to external agencies. A third benefit, as

noted by Birnbaum, was that the adoptions often elevated goals and values that perhaps

had been neglected, thus reinventing the identity of higher education. Fourth,

management innovations appeared to diversify interactions and communication within

organizations thus increasing organizational and individual knowledge. Finally,

Birnbaum (2001) concluded that the adoption of management innovations reinforced

the myth of management within higher education.

If indeed this last benefit was true, it would mean that management innovations

reinforced myths tied to organizational management and to an organization's leaders.

Specifically, the adoption appeared to support the myth that managers, and thus

management, can influence the behavior of the organization. Therefore, if managers and

management are perceived as influencing change through the adoption of management

innovations, they are fulfilling the myth and thus are perceived as being legitimate.

This conclusion led to several questions. Is it possible that, while organizational models have evolved to accompany the increasing complexity of higher education organization, there remains in place structures, processes, and expectations tied to structural theory and that these remnants manifest in the term "legitimacy"? If so, how then does the adoption of innovations impact the legitimacy of an organization and its leaders, or conversely, how does the legitimacy of a leader, the legitimacy of an organization, or the legitimacy of innovation impact the adoption of the innovation? Additionally, what factors influence the legitimacy of an innovation and the subsequent adoption of the innovation? While Birnbaum (2001) hinted that legitimacy played a role in the adoption and rejection of management innovations, the literature did not yield any studies that empirically tested this hypothesis.

*Statement of the Problem*

In short, there does not exist a clear understanding of what factors influence the adoption of a management innovation within higher education. Additionally, there does not exist a clear understanding of how the perceived legitimacy of a management innovation influences the adoption of that innovation nor does there exist a clear understanding of the factors that contribute to the development of perceived legitimacy within the context of higher education.

*Purpose of the Study*

The purpose of this study was to broaden our understanding of how power, coupling, ambiguity, and subsystems influenced the perceived legitimacy and subsequent adoption or rejection of a management innovation within the context of a higher education organization.

*Research Questions*

Research questions explored by this study included the following:

1.     Did perceived legitimacy of a management innovation influence individuals (administrators, faculty, and staff) to adopt or reject a management innovation within higher education?

2.     Did perceived legitimacy of a management innovation vary based on the organizational subsystem (technical and administrative) in which individuals worked?

3.     Did perceived use of power by administrators to facilitate the adoption of a management innovation influence how individuals perceived legitimacy of a management innovation?

4.     Did the perceived degree of coupling of a subsystem to a proposed management innovation influence how individuals perceived the legitimacy of a management innovation?

5.     Did the perceived ambiguity of inputs, processes, and outputs influence how individuals perceived the legitimacy of a management innovation?

6.     Did the factors of power, coupling, and ambiguity interact to influence how individuals perceived the legitimacy of a management innovation?

A mixed method design was used to answer these six questions. More specifically, a two-phase, sequential explanatory design was used (Creswell, 1999, 2003). A quantitative methodology was used in Phase I. Phase II used a qualitative methodology to confirm, elaborate, and explain Phase I findings (Creswell, 1999, 2003; Morse, 2003). The mixed method design was more quantitative driven, and qualitative

features provided confirmation and elaboration. Essentially, the study was more theoretically driven by the quantitative method than by the qualitative method.

*Definitions*

Legitimacy – A label assigned by individuals to identify the validity of the merit pay system. Legitimacy emerges as the result of an evaluative process used by individuals to determine the alignment of the merit pay system with the internalized norms and values of individuals (French & Raven, 1959). The results of this evaluation process are reflected as a positive-neutral-negative perception of the merit pay system.

Management Innovation – For the purpose of this study, a management innovation was defined as an institution's efforts to implement a merit pay system.

Organizational Subsystem – Based on Birnbaum's (1988) work, two organizational subsystems were included as part of this study: technical subsystem and the administrative subsystem.

Technical subsystem – The technical subsystem was defined as the part of the higher education organization that was primarily responsible for implementing processes that converted inputs into outputs and included all full-time faculty (Birnbaum, 1988).

Administrative subsystem – The administrative subsystem within a cybernetic organization was defined as that part of the organization that coordinates and directs the organization (Birnbaum, 1988). For this study, the administrative subsystem included full-time support staff, professional staff, mid-level administrators, and senior-level administrators within the organization.

Power – Power was defined as the capacity of an administrator to influence the behavior or activities of other individuals (administrators, faculty, and staff) related to the adoption of the merit pay system. For this study three types of position power were of interest: legitimate, reward and coercive; and two types of personal power were of interest: expert and referent (French & Raven, 1959; Thambain & Gemmill, 1974; Warren, 1968; Yukl & Falbe, 1991).

Legitimate power – Legitimate power was defined as the capacity of a leader to influence the behavior or activities of a follower based on the leader's formal authority over the follower.

Reward power – Legitimate power was defined as the capacity of a leader to influence the behavior or activities of a follower based on the leader's capacity and willingness to provide resources and/or awards to the follower.

Coercive power – Coercive power was defined as the capacity of a leader to influence the behavior or activities of a follower based on the leader's authority and willingness to impose sanctions or punishments on the follower.

Referent power – Referent power was defined as the capacity of a leader to influence the behavior or activities of a follower based on the desire of the follower to identify personally with the leader.

Expert power – Expert power was defined as the capacity of a leader to influence the behavior or activities of a follower based on the knowledge and/or skills of the leader as perceived by the follower.

Ambiguity – Ambiguity was defined as the degree to which individuals within a subsystem could clearly identify the inputs, processes, and outputs of the subsystem.

Individuals perceive inputs, processes, and outputs along a continuum. On one end of the continuum, individuals can clearly define inputs, processes, and outputs associated with their work as it occurs within the context of their associated subsystem. Also, inputs and outputs can be measured clearly. On the other end of the continuum, individuals perceive inputs, processes, and outputs as ambiguous, or perhaps indefinable, and inputs and outputs cannot be measured clearly.

Coupling – Coupling was defined as the degree to which individuals within a subsystem perceived that changes in their behaviors or activities directly influenced the merit pay system and thereby achieved the purposes of the merit pay system. Coupling exists along a continuum between tightly coupled on the one end to loosely coupled on the other end.

Tightly coupled – A perception held by an individual that changes in behavior or activities would be accompanied by a direct and corresponding change to the subsystem and would move the subsystem toward achieving the goals of a proposed management innovation.

Loosely coupled – A perception held by an individual that changes in behavior or activities would not be accompanied by a direct and corresponding change to the overall subsystem and would not move the organization toward achieving the goals of a proposed management innovation.

Innovation Adoption – Innovation adoption was defined as the degree to which individuals within an organization changed behaviors and activities in order to make full use of the innovation (Rogers, 1995).

Innovation Rejection – Innovation rejection was defined as a decision made by individuals to not adopt an innovation (Rogers, 1995).

## *Significance and Implications of the Study*

This study specifically explored the relationship between perceived legitimacy of a management innovation and the willingness of individuals to adopt the innovation. Furthermore, the perceived legitimacy of a management innovation was examined to broaden our understanding of how perceptions of a management innovation varied within a higher education organization. Finally, this study examined influence of power, coupling, and ambiguity on the perceived legitimacy of a management innovation. In short, the study was significant in that it (1) built on the work of Birnbaum (2001) in this area and further examined the role of legitimacy in the adoption of management innovations within a higher education organization; (2) provided additional insights into those factors that influenced the perceived legitimacy of a management innovation; and (3) provided a more refined perspective for leaders within higher education to use when considering the adoption of management innovations.

## *Assumptions*

Assumptions associated with this study included:

1. Perceived legitimacy of a management innovation is a multi-dimensional construct that influences the adoption of an innovation.

2. Perceptions, like realities, influence an individual's behavior and activities.

3. There is a positive relationship between reality and perception.

4. Perceptions can be documented.

5. Participants will respond accurately and honestly about their perceptions and intentions.

*Conclusion*

The size and complexity of American higher education organizations have increased dramatically since the mid-1800s. Increased complexity during this time was accompanied by increased governance complexity. Throughout the twentieth century there was a growth in research related to understanding organizational structure and function. Organizational theory emerged in concert with the prevailing organizational paradigm – Frederick Taylor's scientific management theory. Organizational theory grew from the simple, mechanistic view to today's perspective where higher education institutions are viewed as dynamic organizations made up of complex networks of formal and informal subsystems.

In the last part of the twentieth century, several management innovations were introduced into higher education that appeared to be incongruent with this dynamic and complex organizational perspective. These management innovations sought to increase effectiveness and efficiency through standardization of the production function (Birnbaum 2001; Mintzberg, 1979). Standardization of the production function appeared incompatible with at least three characteristics that distinguish higher education organizations from businesses: power that is more dispersed than centralized; subsystems that are more loosely coupled than tightly coupled; and multiple organizational goals that tend to be ambiguous and at times conflicting.

In 2001, Birnbaum examined seven of these management innovations. Using a case study methodology, Birnbaum identified a cycle of adoption and rejection

associated with these innovations. Birnbaum noted that leaders continue to introduce management innovations into higher education for a number of reasons in spite of these documented cycles of rejection. Birnbaum concluded that the adoption of management innovations provides a number of benefits to organizations and theorized that increased legitimacy tied to the innovation, the organization, and its leaders plays an important role in the adoption of management innovations. Therefore, this study further explored the role of legitimacy in the adoption of management innovations within higher education and explored variables that potentially influenced the perceived legitimacy of a management innovation.

CHAPTER II

*Organization*

Chapter II will develop a conceptual framework for the proposed study. The chapter contains six sections. Each section will discuss related theories and relevant studies and will support the variables of interest to be examined within this study. The six sections of this chapter include (1) the lifecycle of management innovations within higher education; (2) governance and power within higher education; (3) ambiguity tied to the production function within higher education; (4) coupling of subsystems within higher education; (5) the evolution of organizational theory in higher education; and (6) the role of legitimacy in the adoption of management innovations.

*The Lifecycle of Management Innovations in Higher Education*

As noted in Chapter I, Birnbaum (2001) examined lifecycles of seven management innovations within higher education organizations. The seven management innovations studied by Birnbaum included Planning Program Budgeting System, Management By Objectives, Zero-Based Budgeting, Strategic Planning, Benchmarking, Total Quality Management/Continuous Quality Improvement, and Business Process Reengineering. Initially, Birnbaum examined each management innovation as an individual case study. Birnbaum's examination focused on understanding the lifecycle of the management innovation within the business sector, the migration of the management innovation from the business sector to higher education, and the lifecycle of the management innovation within higher education. Birnbaum examined each management innovation as a single case study and then used explanation building processes (Yin, 2003) to identify patterns across the seven case studies. These iterative

processes allowed Birnbaum to develop two primary observations about the pathways and lifecycles of the seven management innovations. First, Birnbaum observed that the seven management innovations followed a similar pathway from the nonacademic to the academic sector. Second, Birnbaum observed that once adopted by the academic sector, the seven management innovations experienced a similar lifecycle.

Based on these two observations, Birnbaum (2001) developed a five-stage lifecycle model of management innovations in higher education. Each of these stages is discussed in the following paragraphs. The adoption of Total Quality Management (TQM) will be used to further illustrate Birnbaum's model. The purpose of using TQM is not to provide a complete understanding of its philosophy and tenets, but instead the adoption of TQM is used to assist the reader in understanding better the pathway and lifecycle of management innovations in higher education.

The first stage of Birnbaum's (2001) model is the *creation* stage, which includes three main aspects: the creation of a crisis, the identification of a management strategy to address the crisis, and isolated implementations of a management strategy. Birnbaum found that the creation of the crisis was usually linked to a change in the larger social system. For example, the early 1980s were marked by economic unrest: the gross national product was falling; unemployment exceeded ten percent; nearly one-third of America's industrial plants lay idle; there was a significant oil crisis; and countries like Germany and Japan were gaining a greater share of world trade (United States Department of State, 1999). Total Quality Management became the solution for American companies to respond to the economic crisis (Melissaratos & Arendt, 1995). TQM was seen as "a revolution in the way Americans manage and work in

organizations" (Schmidt & Finnigan, 1992, p. 94). TQM was seen as a simplistic philosophy of continuous organizational and individual improvement (Chafee & Sheer, 1992) that should be implemented across every sector of society (Schmidt & Finnigan, 1992). Because of its simplicity and demonstrated success in Japan, it was argued that TQM could not be dismissed as just another management fad (Seymour, 1992). TQM emphasized the establishment of control processes to ensure conformance to requirements (Birnbaum, 2001). "In this context, 'conformance' means reduction in variation, while 'requirements' of course are shaped by customers" (Ewell in Birnbaum, 2001, p. 93). Through this system of processes designed to reduce variation in outputs, TQM was viewed as a management innovation that would further improve organizational effectiveness and efficiency (Birnbaum, 2001).

The economic crisis of the early 1980s grew quickly to a social and educational crisis. In 1983, the U. S. Department of Education published *A Nation at Risk*, which linked the economic crisis in part to a failure of the educational system. By 1987, Congress passed Public Law 100-107: The Malcolm Baldridge National Quality Improvement Act of 1987. The Act created the Baldridge National Quality Award to recognize organizations that "substantially benefited the economic or social well-being of the United States through improvements in the quality of their goods or services resulting from the effective practice of quality management" (Section 16, Paragraph B). In 1988, the first round of Baldridge Awards received nearly 12,000 requests for applications (Schmidt & Finnigan, 1992). The number of requests increased to 200,000 in 1990.

In 1991, a *Wall Street Journal* article reported that TQM received the highest satisfaction levels out of more than a dozen management innovations in a survey of over 300 large companies (Bleakley, 1993). Also in 1991, Ted Marchese's article in the American Association for Higher Education declared "TQM Reaches the Academy."

Total Quality Management…an American set of ideas, engine behind the Japanese economic miracle, agent for the dramatic turnabouts at Ford and Motorola…suddenly it's at work in more than half the Fortune 1000 firm. . . . It's the "preferred management style" of the federal government. . . .You'll find it in hotels, city government, your local hospital. . . . It's in the air. . . .Can the academy be far behind? (In Birnbaum, 2001, p. 97)

Marchese's question was rhetorical. The obvious answer helped set the stage for the adoption of TQM throughout higher education and signaled that the creation stage was well underway.

In the second stage, the *narrative evolution* stage, Birnbaum (2001) found that narratives about the successes of the seven management innovations became embellished and were more widely disseminated through consultants, early adopters, and professional meetings. The rhetoric of the narrative evolution stage for TQM was simplistic and intense. Business and government advocated the transference of TQM to higher education (Brigham, 1995), and higher education soon recognized that the adoption of TQM was necessary to appease business and governing boards (Jelinek, Forster & Sauser, 1995). Isolated success stories within higher education indicated positive adoptions and early successes associated with TQM (Bemowski, 1991; Entin,

1993; Seymour, 1991). Articles promoted TQM as a means of "restoring the pillars of higher education" (Bemowski, 1991, p. 37). Small groups of "academic zealots, true believers, and leaders at dozens of institutions" were heralded for carrying the torch of TQM (Keller, 1992, p. 48). By 1992, the *Chronicle of Higher Education* reported that colleges and universities throughout America were reporting successes tied to the adoption of TQM (Mangan, 1992). Also in 1992, the American Association for Higher Education used TQM as a thematic banner at its 1992 national conference. To summarize, the advocacy of TQM by professional organizations and individual institutions, when coupled with increased and intense rhetoric tied to the successes of TQM, signaled that the adoption of TQM had entered the narrative evolution stage.

Thirdly, Birnbaum (2001) observed a *time lag* between initial implementation of an innovation and objective validation of the innovation's successes. Because of this time lag, it is in the third stage that the number of organizations implementing the innovation peaked. Indeed, it was not until the middle part of the 1990s that articles began to discount the success claims of TQM, nearly a decade after the first success claims of TQM surfaced in the business world (Birnbaum, 2001). With TQM success stories abounding and absent of opposing evidence, TQM became the management fad of the early 1990s. In 1993, Marchese, referring to TQM, noted that "By now it's hard to find a campus without a knot of people trying to implement the thing" (p. 10). That same year, seventy percent of universities and colleges claimed to be using TQM (El-Khawas, 1993). Newt Gingrich referred to TQM as one of the "Five Pillars of American Civilization" in his speeches for reelection to the U. S. House of Representative in 1993 (Ferguson, 1998). Also in 1993, an entire issue of *Change* focused on TQM, and TQM

workshops were available throughout the country (Birnbaum, 2001). In short, the

adoption of TQM by higher education organizations grew rapidly in the early 1990s.

This growth occurred prior to the publication of objective articles that examined

critically the successes of the innovation.

After the adoption of management innovations reach their peak, Birnbaum

(2001) identified a fourth stage in which skepticism associated with the innovation

outweighed optimism. Birnbaum labeled this stage the *narrative deevolution* stage.

Keller (1992 in Birnbaum, p. 96) noted that "American corporations, which have spent

hundreds of millions of dollars in the past decade [on TQM programs]…have divergent

feelings about their expenditures….[TQM is seen as] a mania from management hell, at

best a waste of time and at worst harmful to organizations." By 1993 in the business

sector, there were a number of publications that highlighted organizations whose quality

programs were abandoned due to the lack of producing any meaningful results

(Birnbaum, 2001; Brigham, 1993; Mathews, 1993). The TQM failure rate in the

business sector was as high as 80 percent (Schmidt & Finnigan, 1992) and only about

one-fifth of TQM programs yielded tangible results (Harari, 1993). Marchese, who

advocated TQM in 1991, concluded that the end of TQM was near in 1996. Marchese

(1996) noted that "dozens of institutions that began a quality journey ended it; others

persisted but have little to show for it…In sum, the most important management

development of the past two decades has so far had only modest impacts on American

higher education" (p. 4).  Marchese (1996) concluded TQM's "emphasis on customer

focus, data, teamwork, and systems thinking runs counter to the internally focused,

opinionated, problem-chasing world of campus life" (p. 4). Similarly in 1997, a

*Business Week* article declared TQM was dead (Byrne, 1997). In essence, innovations

in the fourth stage are often declared failures and are abandoned.

Finally and in reaction to the claims of failure, Birnbaum (2001) observed that

early innovators sought a *resolution of dissonance* – early innovators often engaged in a

dialogue to account for the failings of the innovation. As noted by Birnbaum (2001),

those individuals and organizations who were early advocates of the seven academic

management innovations often cited poor leadership, stubborn followers, improper

implementation, lack of resources, incorrect processes, or even implementation of a bad

version of the innovation as reasons for the innovation's failure. In other words, the

innovation could have been successful if the conditions surrounding the implementation

of the innovation were different. Birnbaum observed that such reasons provided an

opportunity to modify the innovation and to reintroduce the innovation under the guises

of a new and improved version. In response to the failings of TQM, a number of

strategies and services in the business sector were developed by consultants and

management firms specializing in turning around failed TQM initiatives via a better

version of TQM (Jacob, 1993; Mathews, 1993 Schmidt & Finnigan, 1992). These new

and improved versions were often designed to address shortcomings of the previous

version. For example, one shortcoming of TQM within higher education was the name:

Total Quality Management. While most institutions could relate to and understand the

importance of quality, the words *total* and *management* presented difficulties

(Birnbaum, 2001). Very few issues are total within higher education because of its

loosely coupled subsystems and faculty autonomy (Birnbaum, 2001). Faculty are not

managed in higher education; instead they are administered or served (Birnbaum,

2001).  In essence, the shortcomings of the name lead to a new management innovation titled "Continuous Quality Improvement": an evolutionary iteration of Total Quality Management. Once the new version was adopted, the management innovation entered a second phase and the five stages (creation, narrative evolution, time lag, narrative devolution, and resolution of dissonance) were replayed.

To summarize, Birnbaum (2001) used a case study methodology to examine the lifecycles of seven management innovations within higher education. Birnbaum observed that the seven management innovations entered higher education organizations via the business sector. These management innovations were adopted in higher education with a hopeful intent to resolve emerging institutional and governance issues. A few claims of success linked to the innovation were then circulated throughout academia via early adopters of the innovation, consultants, publications, and professional conferences, which led to widespread adoption of the innovation. Widespread adoption occurred before independent research substantiating the success of the innovation could be conducted and published. As the independent research was published and as stories about adoption difficulties circulated, there arose increased skepticism tied to the management innovation. Eventually, new adoptions of the management innovation stopped and, in most cases, organizations ceased activities related to the adoption of the innovation. Finally, Birnbaum observed that champions of the management innovation (i.e., early adopters and consultants) often cited a number of contextual variables (i.e.,  poor leadership, stubborn followers, improper processes, lack of resources, or even implementation of a bad version of the innovation) that contributed to the failures of the innovation. The identification of these contextual

shortcomings then provided the basis for an evolutionary iteration of the same innovation.

Through Birnbaum's work it is evident that management innovations when introduced via the business world tend to follow a lifecycle that leads to rejection of the management innovation in academia. This lifecycle raises several questions. Why would an innovation that leads to increased effectiveness and efficiency in the business world be accompanied by cyclical rejection in academia? Why do presidents and senior level administrators continue to embrace and advocate the implementation of management innovations that originate in the business sector, if the applications of innovations are problematic? Are there characteristics that distinguish higher education organizations from business organizations; and if so, how do these distinguishing characteristics impact the adoption of management innovations?

Rogers (1995) is often cited for his distinguishing work related to the adoption of innovations. In his book, *Diffusion of Innovations,* Rogers identifies characteristics associated with the adoption of innovations. First, innovations are evaluated by individuals based on their relative advantage. Individuals ask if the innovation is more economical, more prestigious or more satisfying. Second, individuals examine compatibility of the innovation to ensure alignment of the innovation with current values and experiences. Third, complexity is considered. If the innovation is easy to understand and use, the likelihood of adoption increases. If the innovation is complex, the likelihood of adoption decreases. Fourth, the adoption of an innovation is increased if individuals can experiment with the innovation on a limited basis. Rogers labeled this characteristic as trialability. Finally, individuals want to make sure the results of

adopting the innovation are observable. If these five factors are positively associated with an innovation, the adoption of the innovation is increased.

Rogers (1995) observed that innovations follow certain paths based on these characteristics. Diffusion can be described as the process through which an innovation spreads through an organization and is the process used by members of the organization to develop a mutual understanding of the innovation (Rogers, 1995). Individuals in one organization through the diffusion process may choose to adopt the innovation while individuals in another organization may choose to reject the innovation. In essence, the acceptance or rejection of innovation is contextual to the organization in which the innovation is being introduced.

Therefore, an examination of those factors that distinguish higher education institutions from business organizations is an important first step toward understanding the potential factors that influenced the acceptance or rejection of a management innovation in higher education. As noted in Chapter I, there are several characteristics that differentiate higher education institutions from business organization including elements tied to the production model, the competitive market model, governance and power, organizational ambiguity, and the coupling of subsystems. For the purpose of this study, it appeared that three of these characteristics (governance and power, organizational ambiguity tied to the production function, and the coupling of subsystems) had the greatest potential impact on the adoption of management innovations. Therefore, these variables were addressed in this study and are discussed in more detail in the following sections.

*Governance and Power within Higher Education*

Governance and power are considerably different when comparing higher education institutions to business organizations. Birnbaum (1988) defined governance as "the structures and processes through which institutional participants interact with and influence each other and communicate with the larger environment" (p. 4). Birnbaum also noted that "the concept that best reflects the ways in which institutions of higher education differ from other organizations is governance" (p. 4). From a legal perspective, governance of a higher education institution rests with the governing board (Kaplin & Lee, 1995). In the infancy of higher education, governing boards consisted of small groups of clergy, administrators, and faculty, and these boards were often the primary source of decision making (Birnbaum, 1988).  During this period of shared responsibilities among clergy, administrators, and faculty, the collegial model perhaps best represents the governance approach.

As institutions grew in size and as enrollment increased by more than 500 percent in the late nineteenth and early twentieth century, institutions became more complex (Golden & Katz, 1999). The mission of higher education moved beyond just teaching. In the late eighteenth century, a research component was added to the university mission with the establishment of research centers like Johns Hopkins University and the creation of universities with only a graduate program like Clark University (Boyer, 1990; Golden & Katz, 1999). Additionally, the mission of the higher education grew to include a service component with the passage of the Morrill Acts of 1862 and 1890 (Boyer, 1990; Golden & Katz, 1999). The Morrill Acts also signaled a shift in enrollments from private to public institutions (Boyer, 1990; Golden & Katz,

1999). As the mission of higher education expanded, new disciplines were created (Birnbaum, 1988; Boyer, 1990; Golden & Katz, 1999). The new disciplines required more specialized faculties who expected and needed greater control over their own work than perhaps the traditional teaching faculty (Mintzberg, 1979). With increased division of labor required by specialization and the growing organization, the bureaucratic model became the dominant perspective from which to view organizations during this period (Birnbaum, 1988).

As universities grew in complexity, governance became more decentralized (Birnbaum, 1988). Decentralization provided a means for institutions to be flexible administratively and responsive to the varying needs of specialized faculty whose teaching, research, and service often required innovation and creativity (Mintzberg, 1979). With decentralization, faculty had more power and control over their own affairs and administrators began to play more of a supporting role (Mintzberg, 1979). Ultimately, what emerged was a dual system of governance and power divided among the academic and nonacademic aspects of the institution (Besse, 1973; Corson, 1960; Etzioni, 1964; Mintzberg, 1979).

As will be discussed in much greater detail later in this chapter, the perspective from which researchers and others viewed organizations evolved concurrently with governance and power perspectives. The evolution of organizational theory grew from a collegial perspective to the bureaucratic, to the political, to the cybernetic. Each turn of the evolutionary clock seemed to be an attempt by organizational theorists to account for the increasing complexity and growth of higher education institutions (Birnbaum, 1988; Bolman & Deal, 1997).

However, for the remainder of this subsection, we will return to a discussion on governance by a more thorough examination of the dual system of governance and power.

*Governance*

In general, most modern academic institutions are organized based on a dual governance system (Besse, 1973; Birnbaum, 1988; Corson, 1960; Etzioni, 1964; Mintzberg, 1979). This dual governance system includes two subsystems: a faculty subsystem and an administrative subsystem (Birnbaum, 1988; Mintzberg, 1979). Each subsystem has a set of values and expectations related to governance (Birnbaum, 1988; Corson, 1960; Etzioni, 1964; Mintzberg, 1979). Each subsystem also has a set of processes to facilitate decision making and resource allocation (Mintzberg, 1979). As a result, it appears that governance within a higher education institution is often more pluralistic than in business organizations in terms of the number of individuals and processes that must be accommodated in decision making and resource allocation (Baldridge et al., 1977; Birnbaum, 1988; Cohen & March, 1986). Logically, governance variations exist due to the diversity of higher education institutions, but on the whole, the literature does support a governance perspective that is more pluralistic in higher education than in business. Governance is also more dispersed in higher education than in business with the expectation that individuals at all levels in both the faculty and administration be involved in decision making and resource allocation decisions (Baldridge et al., 1977; Birnbaum, 1988; Cohen & March, 1986). Decentralized governance provides a means for higher education institutions to be flexible administratively and responsive to the varying needs of the organization (Birnbaum,

1988; Mintzberg, 1979). Flexibility allows the institution to respond to multiple and at times conflicting institutional goals (Birnbaum, 1988; Mintzberg, 1979). Flexibility also enables the institution to meet varying needs of faculty whose teaching, research, and service often require innovation and creativity (Birnbaum, 1988; Boyer, 1990, Mintzberg, 1979). To summarize, organizational governance is a characteristic that distinguishes most higher education institutions from business organizations. Governance in most institutions can be characterized as having two fully developed structures. The dualistic structures provide the basis for decision making, including decisions related to the adoption of management innovations. Perhaps most notably, it is within this dualistic structure that the role of power has evolved, and as will be discussed in the following paragraphs, most certainly influences the adoption of management innovations within higher education.

*Power*

Power is most often defined as the capacity to influence (Birnbaum, 1988; Kanter, 1979; Mintzberg, 1983; Pfeffer, 1981). Kelman (1958) identified three processes that govern power: instrumental compliance, internalization, and personal identification. Instrumental compliance exists when an individual complies with a request out of anticipation of a reward or to avoid punishment. Internalization occurs when an individual is intrinsically supportive of the requested action or when the requested action is congruent with the individual's values. Personal identification occurs when an individual responds favorably to an action because the individual has adopted the same attitude as the person making the request or desires to be like the person making the request. Through Kelman, influence is viewed as a social interaction

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process. Indeed, several works (Blau, 1974; Hollander, 1958; Jacobs, 1970) have examined this social interaction under the umbrella of social exchange theory. At its most basic level, influence and power within the context of social exchange theory are based on an exchange of benefits between individuals within an organization (Yukl, 2002). Influence and power of a given individual is "directly propitiate to the group's evaluation of the person's potential contribution relative to that of other members" (Yukl, 2002, p. 154). In essence, the role of individuals with power and how they choose to use that power became a potential component in understanding why individuals adopt or reject management innovations.

What is the connection between influence and power in the adoption of management innovations? In light of Kelman (1958), individuals comply with requests based on the influence of those making the request and to the degree that the request meets some need of both the influencer and those being influenced. Therefore, it is possible that influencers are more likely to exert power when the request is mutually beneficial to both the influencer and those being influenced. With regard to management innovations in higher education, individuals are more likely to exert power to encourage adoption of innovations when the innovation is mutually beneficial to both influencer and the individual being influenced. Conversely, the use of influence, or power, will be minimized when innovations are not mutually beneficial.

So who are the influencers in organizations? Influence can be based on an individual's proximity to an organization (Mintzberg, 1983), an individual's position within the organization (Bass, 1960; Etzioni, 1961; French & Raven, 1959; Kanter, 1979; Mintzberg, 1983; Yukl & Falbe, 1991), and an individual's personal

characteristics (French & Raven, 1959; Hickson, Hinnings, Lee, Schneck & Pennings, 1971; Kelman, 1958; Patchen, 1974; Yukl, 2002). With regard to an individual's proximity to the organization, Mintzberg (1983) identified two proximities: those who located within an organization and those who are external to an organization. Internal influencers are those full-time employees who are responsible for making as well as executing the daily decisions and practices of the organization (Mintzberg, 1983). External influencers are not employees of the organization but, nonetheless, seek to affect the behavior of individuals within the organization by influencing organizational behavior (Mintzberg, 1983). Therefore, the adoption of management innovations may be influenced by individuals from within an organization and by individuals that are external to the organization.

The adoption of management innovations may also be influenced by power that is linked to an individual's position within the organization (Bass, 1960; Etzioni, 1961; French & Raven, 1959; Kanter, 1979; Mintzberg, 1983; Yukl & Falbe, 1991). Yukl (2002) identified five types of power associated with an individual's position: legitimate, reward, coercive, information and ecological. <u>Legitimate power</u> is based on an individual's formal authority over other individuals or activities (French & Raven, 1959; Mintzberg, 1983; Yukl, 2002). While an individual's legitimate power may exist simply due to formal position within the organizational hierarchy, legitimate power has been found to be contingent upon the consent of subordinates (French & Raven, 1959; Mintzberg, 1983; Yukl, 2002). Individuals have <u>reward power</u> when others perceive them as having access and control to important resources and awards and when others perceive the willingness of the individual as having the capacity and willingness to

make such rewards (French & Raven, 1959; Yukl, 2002). Coercive power is linked to an individual's authority to impose physical or emotional sanctions or punishments on others (French & Raven, 1959; Yukl, 2002). Information power, much like reward power, is linked to an individual's control over a specific type of resource, information (French & Raven, 1959; and Yukl, 2002). Unlike reward power, information power can be used to influence behavior upward, downward, and laterally within an organization (Yukl, 2002). Ecological power is more indirect and is linked to control over the physical environment, technology, and the organization of work (Yukl, 2002). By reengineering items like the work environment, work flow, work activities, reporting relationships, and information systems, it has been demonstrated that individual's can influence the motivation and behavior of others (Cartwright, 1965; Lawler, 1986, Oldham, 1976; Hackman & Oldham, 1980; Mintzberg, 1983). To summarize, Yukl identified five types of power associated with an individual's position that can influence individual behavior and motivation within organizations. Because the adoption of management innovations often requires changes in behavior, power associated with an individual's position may have the potential to influence the adoption or rejection of management innovations.

In addition to power associated with an individual's position, power may also be associated with an individual's personal characteristics (Yukl, 2002). Yukl identified two types of power associated with an individual's personal characteristics: referent power and expert power (Yukl, 2002). Referent power is linked to the desire of one individual (follower) to identify with another individual (leader). In this leader-follower relationship, the power of the leader is contingent upon the desire of the follower to

identify with the leader. Basically, the power of the leader to influence a follower's behavior, attitudes, and/or beliefs increases when the desire of the follower to identify with the leader is greater (French & Raven, 1959). Therefore, it appeared that referent power of leaders was a variable that should be examined as related to the adoption of management innovations.

Expert power is a second form of power associated with an individual's characteristics. French and Raven (1959) noted expert power is linked to knowledge or perception of knowledge held by an individual. Yukl also included individual skills as a source of expert power and noted both knowledge and skills must be task oriented. Others have also noted that expert power is relevant to the perceived availability and accessibility of other sources of knowledge and/or skill (Hickson et al., 1971; Patchen, 1974). In effect, a leader's expert power increases when sources of knowledge and/or skill are less available and accessible. Because the adoption of management innovations often requires increased knowledge and skills tied to the innovation, the perceived expert power of a leader might influence the adoption of a given innovation and was a variable of interest in this study.

To summarize, Yukl (2002) identified five types of power associated with position and two types of power linked to an individual's personal characteristics that can be used to influence behavior. One must therefore question, how does the use of power influence the adoption of innovations? Does the impact vary between the two categories? Does the impact vary based on the various types of power within each category? As will be discussed in the next paragraph, it does appear that the impact of

power on the adoption of innovations varies based on the type of power used by leaders to influence followers.

Several studies indicate that legitimate, reward, and coercive power are correlated with changing behavior of individuals (French & Raven, 1959; Thambain & Gemmill, 1974; Warren, 1968; Yukl & Falbe, 1991). However, the literature also reveals that the change in behavior linked to the use of legitimate, reward, and coercive power is highly dependent upon individuals influencing the adoption (French & Raven, 1959; Thambain & Gemmill, 1974). Additionally, the resulting change in behavior is not accompanied by commitment, especially when leaders only use legitimate power (Thambain & Gemmill, 1974). Essentially, the use of reward, coercive, and legitimate power may lead to adoption; however, that adoption might be short lived. This short-lived adoption may be linked to the power and influence of individual leaders. As individuals leave the organization and/or as the locus of power changes, it is likely that the innovation will be dismissed and behavior will revert to the previous standard. On the other hand, expert and referent power have been positively correlated with subordinate satisfaction, performance change, and attitudinal commitment to the innovation (Warren, 1968). The use of expert and referent power to influence the adoption of management innovations is likely to increase the diffusion and sustainability of innovation in an organization.

Additionally, power is dynamic and is contextual (Etzioni, 1961; Mintzberg, 1983; Patchen, 1974; Pfeffer, 1981). Higher education organizations are often characterized as normative organizations. Normative organizations tend to value and support the use of referent and expert power (Etzioni, 1961). As a contrast, coercive

organizations, like prisons, predominately use coercive power (Etzioni, 1961).

Historically, utilitarian organizations, such as businesses, tend to emphasize the use of

reward and legitimate power (Etzioni, 1961). The use of referent and expert power

within normative organizations is shaped by social relationships of individuals within

the organization as well as the social norms that "sanction the power distribution and

which define it as normal and acceptable" (Pfeffer, 1981, p. 361).  Individuals within

normative organizations tend to choose selectively to become involved in a given issue

(Pfeffer, 1981). Those issues that have the most direct impact, either positively or

negatively, are the issues with which individuals within an organization chose to

become involved (Mintzberg, 1983; Patchen, 1974; Pfeffer, 1981). Coupled with the

autonomy afforded the faculty within the dualistic higher education organization,

faculty can very easily ignore management innovations that focus on the needs of the

organization and, in fact, may choose to use professional influence to weaken support

for innovations that threaten the social norms, accepted practices, and reasoning of the

faculty subsystem (Mintzberg, 1979). In short, the literature indicates that the use of

referent and expert power may have greater potential to influence the adoption of

management innovations within normative organizations, like higher education.

As a conclusion to this section, governance and power within higher education

appear to be substantially linked to its dualistic structure. The dualistic structure

includes two fully developed subsystems: one linked to professional faculty and largely

normative; and a second linked to the administrative support system and largely

utilitarian (Besse, 1973; Corson, 1960; Etzioni, 1964; Mintzberg, 1979). At the heart of

the faculty subsystem is the faculty member who demands autonomy (Mintzberg,

1979). This demand for autonomy is likely to influence the adoption of a management innovation introduced by the administrative subsystem, especially if the innovation restricts autonomous behavior of faculty.

It appears this dual system of governance and power impacts the diffusion of management innovations within higher education. Management innovations studied by Birnbaum (2001) had their genesis in the business sector. Given that business organizations tend to be more utilitarian, their social norms tend to value the use of reward and legitimate power perhaps more greatly than referent and expert power valued by higher education (Etzioni, 1961). Management innovations were introduced to higher education by common players that served as leaders in the business world and as leaders in higher education, most often as members of governing boards (Birnbaum, 2001; Rogers, 1995). These external influencers see "problems with coordination, discretion, and innovation…resulting from a lack of external control of the professional and his profession" (Mintzberg, 1979, p. 67). In essence, external influencers link organizational problems to the inability of the academy to govern itself. To solve these problems, external influencers (business leaders serving on governing boards) proposed innovations related to more direct supervision, standardization of processes, or standardization of outputs (Mintzberg, 1979).

Management innovations of this type flow through the organization via the administrative support system (Birnbaum, 2001). As these innovations trickle down through the system, they eventually impact the faculty subsystem through controls that lead to increased centralization and formalization of structures (Birnbaum, 2001; Mintzberg, 1979). At the intersection of the faculty and administrative subsystems, the

academic administrator must balance the tensions between the needs of the faculty and the needs of administration (Mintzberg, 1979). Unless the innovation is perceived as necessary to the faculty subsystem, or even worse, if the innovation is perceived as a threat to faculty autonomy, the innovation will likely not be adopted and may even be resisted (French & Raven, 1959; Mintzberg, 1979). If the academic administrator chooses to use power to move forward with the innovation, the risk is alienation of the professional operating core (Mintzberg, 1979). It is logical to conclude that the dual power structures of higher education impact the diffusion of management innovations within institutions of higher education. Power within higher education organizations differs from most business organizations and could possibly be a factor that explains the rejection of the seven management innovations studied by Birnbaum. Therefore, power was a variable of interest in this study. Because the literature indicated that the use of different types of power by leaders and the proximity of power impacts the adoption of management innovations, the study examined five types of power: legitimate, reward, coercive, expert, and referent.

*Organizational Ambiguity Tied to the Production Function within Higher Education*

Organizational ambiguity is a second characteristic that distinguishes higher education institutions from business organizations (Birnbaum, 2001) and was a variable of interest in this study. Organizational ambiguity in higher education is tied to the production function of the organization. The production function of an organization focuses on maximizing outputs through the standardization of inputs and technical processes (Birnbaum, 2001; Shafritz & Ott, 1996). At the heart of production function are four key elements: the ability to clearly articulate organizational goals; the ability to

standardize inputs and outputs; the ability to establish quantitative measures for both

inputs and outputs; and the ability to identify and standardize processes that convert

inputs to outputs (Birnbaum, 2001; Jones & Taylor, 1990; Shafritz & Ott, 1996). As

will be discussed in the remainder of this section, the ability of higher education

organizations to address these four elements of the production function is often more

difficult than in most business organizations.

First, organizational goals in higher education can be more ambiguous and more

conflicting than in business organizations (Birnbaum 1988, 2001; Brock & Harvey,

1993; Cohen & March, 1986; Gross & Grambsch, 1974). Goal ambiguity might be

attributed to academic leaders who do not recognize or see the need for clarity;

however, Cohen and March (1986) concluded that various organizational processes

(e.g., processes used to develop normative mission statements and processes that

establish and legitimize objectives) actually contribute to goal ambiguity. Cohen and

March identified effective goals as having three elements: (1) goals must be clear and

must articulate clear procedures and processes to measure progress toward their

achievement; (2) goals must be problematic; that is goals must provide opportunity for

success as well as failure; and (3) goals must be accepted by all significant groups

within the institution. It is the third criterion that appears to cause the greatest difficulty.

Cohen and March observed that goals generally emerge from normative processes as

broad general statements that erode the first and second criteria in order to gain

consensus. These normative processes generate goals that are broad, consensus-building

statements (Cohen & March, 1986). If specific goals do emerge from these processes,

such goals are often not supported by the organization's major constituencies (Cohen &

March, 1986).

Additionally, academic institutions often have conflicting goals. Conflicting

goals, in part, grow out of the traditional tri-fold mission of higher education: teaching,

research, and service. In 1966, Clark Kerr was among the first to note the divergent

missions and the complex communities of the university when he referred to the higher

education as a multiversity. Each mission and community of the multiversity has a

different purpose that requires corresponding goals, management structures, decision-

making processes, and institutional resources (Birnbaum 1988, 2001; Brock & Harvey,

1993; Cohen & March, 1986; Gross & Grambsch, 1974; Kerr, 2001). The multifaceted

mission when coupled with growth, diversification, and specialization of higher

education further contributed to conflicting goals (Birnbaum, 1988; Boyer, 1990).

Birnbaum (1988) noted "As colleges and universities become more diverse,

fragmented, specialized and connected with other social systems, institutional missions

do not become clearer; rather, they multiply and become sources of stress and conflict

rather than integration" (p. 11). In essence, Birnbaum recognized that conflicting goals

were naturally linked to the evolutionary growth of higher education's mission. Because

of the normative goal development processes discussed in the previous paragraphs,

many academic institutions have embraced goals that often conflict with other

established goals or purposes (Birnbaum, 1988; Boyer, 1990). These conflicting goals

typically are not measurable, are not problematic, and are not accepted by all

individuals within the institution (Birnbaum 1988, 2001; Brock & Harvey, 1993; Cohen

& March, 1986; Gross & Grambsch, 1974). To note that academic institutions have

poor and conflicting goals is not an attempt to reveal an inconsistency that is in need of fixing. Instead, it is to highlight that this inconsistency is a valued and important characteristic of academic institutions (Cohen & March, 1986). While goals might not be as clearly stated nor as measurable as perhaps in business organizations, nonetheless, institutional goals are reflective of the diverse mission of academic institutions. In short, the absence of clearly articulated goals and the presence of conflicting goals are organizational characteristics that distinguish higher education institutions from business organizations as tied to the production function and potentially influence the adoption of management innovations in higher education.

While the primary purpose of this section of the literature review is to examine difference between higher education and business, it appears that some of the same differences might exist between government and business. As an example, the federal government has difficulty defining goals and this difficulty is possibly due to the plurality of its constituents. Both higher education and government organizations seem to muddle toward some undefined goal and serve their constituents to the best they can even in the midst of ambiguity tied to the production function.

The ability to standardize inputs and outputs is a second area within the production function that distinguishes higher education institutions from business organizations. Defining and standardizing inputs within higher education has become increasingly difficult (Baldridge et al., 1977). A major confounding aspect of the production model is that the primary input in higher education, the student, is non-standardized (Baldridge et al., 1977). Institutions of higher education have little control over the quality of this input, and as a result, students come with varying abilities,

interests, and backgrounds. Additionally, higher education has difficulty defining and standardizing outputs. Outputs in higher education "differ substantially in kind and quality" (Jones & Taylor, 1990, p. 51). Inputs and outputs in higher education are ill-defined and nonstandardized – a characteristic of the production function that is more evident in higher education than in most business organizations.

The ability of higher education to quantify both inputs and outputs is a third characteristic that distinguishes higher education institutions from business organizations (Jones & Taylor, 1990). Many of the inputs and outputs within higher education are difficult to measure quantitatively (Jones & Taylor, 1990). For example, how does one validly quantify and control for the quality of students applying for admission? What factors should contribute to the quantification? How should academic intensity and quality of the high school curriculum impact that overall quality rating? Even if a quality characteristic like academic intensity and the quality of the high school curriculum could be quantified and even if standards could be set related to this characteristic, should a student be rejected from admission if the standard is not met? Perhaps more difficult than quantifying inputs is quantifying outputs. Many of the desired outputs of higher education are not easily quantifiable and are often intangible (Chaffee, 1985; Jones & Taylor, 1990). For example, Astin (1985) noted that "true excellence lies in the institution's ability to affect the students…to make a positive difference in their lives. The most excellent instructions are…those that have the greatest impact…on the student's knowledge and personal development" (pp. 60-61). Accordingly, a measurement of an institution output should include elements that quantify the institution's ability to make a positive difference in a student's life, to

impact the student's knowledge and to impact the student's personal development. The question then becomes how to quantify each of these elements? Which elements should be of greater importance? Additionally should these be the only factors considered in measuring an institutions output? What about outputs related to research, community outreach, economic development, and cultural enlightenment? In short, it appears that the ability to quantify inputs and outputs within higher education organizations is perhaps more difficult than in the business sector; and thus may be a factor that contributes to the rejection or management innovations studied by Birnbaum (2001).

The ability of higher education to identify the technical relationship between inputs and outputs is the final element of the production function that distinguishes higher education institutions from business organizations (Jones & Taylor, 1990). Essentially, the production model is reliant upon the ability of the organization to identify processes that convert inputs to outputs. In higher education there are several complicating factors that impact the organization's ability in the identification of these processes. First, inputs are often used to produce multiple outputs (Jones & Taylor, 1990). For example, students when viewed as inputs are linked to the production of graduates, the development of faithful alumni that will contribute back to the organization, and the production of community cultural events, just to identify a few. The production model is based on the principle that when a "homogeneous product is being produced, the assumption of the link [between inputs and outputs] is reasonable" (Jones & Taylor, 1990, p. 51). This assumption is false when variations in outputs tie to a single input, thus making it difficult to understand the linkage between inputs and outputs. The standardization of processes necessary to increase efficiency and

effectiveness is difficult absent of this understanding. Secondly, when there is a clear understanding of the linkage between outputs and inputs, processes can be standardized (Jones & Taylor, 1990). Unfortunately, within higher education there are many variations in process – there does not appear to be any one best technical process to convert inputs to outputs (Baldridge et al., 1977; Jones & Taylor, 1990). For example, there exist tremendous variations in university curricula and pedagogy, which are often identified as the primary process used to convert students (inputs) into graduates (outputs). Variations in these technical processes is further complicated by the difficulty in determining their effectiveness (i.e., how effective did the process change inputs to outputs?). Thirdly, a university's inputs (students) can also become the university's technical process (staff or instructors) and eventually the university's output (graduates and alumni) (Jones & Taylor, 1990). In short, there are at least three factors that influence the standardization of processes within higher education: a single input can produce multiple outputs; multiple processes to convert inputs to outputs; and inputs that can be both the technical process and the output. It appears these three factors adversely impact higher education's capacity to determine efficiency and effectiveness within the context of the production model, and thereby adversely impact the adoption of management innovations.

To summarize, academic institutions exhibit four ambiguities tied to the production function that differ from business organizations: goal ambiguity; ambiguity of inputs and outputs; ambiguity of measuring inputs and outputs; and ambiguity tied to the technical process that convert inputs to outputs. So what is the issue related to ambiguity? An issue arises when management innovations flow from an organizational

sector that can easily establish clear and measurable goals, inputs, processes, and outputs to another organizational sector where these elements are more ambiguous (Brock & Harvey, 1993; Cohen & March, 1986). The seven innovations studied by Birnbaum (2001) flowed from business organizations to higher education institutions. These innovations were linked to rational models that required clearly articulated goals, inputs, processes, and outputs. These elements of the production model were foundational for determining success and for establishing accountability systems for the seven management innovations (Besse, 1973; Birnbaum, 1988). As previously highlighted, academic institutions tend to value ambiguity of goals, inputs, processes, and outputs – a value that is culturally and organizationally linked to the diverse mission of the university. Essentially, ambiguity tied to the production function of the university may have made it difficult for academic organizations to determine the success of the seven management innovations studied by Birnbaum (2001). Perhaps more profoundly, the absence of clear and measurable organizational goals, inputs, processes, and outputs may have made it difficult to determine if the management innovation was appropriate for the institution or even if the innovations had the desired impact.

It is logical to hypothesize that ambiguity tied to production function of the university contributed to the shortcomings of the seven management innovations studied by Birnbaum (2001). Therefore, ambiguity was a variable of interest in this study. Because the literature indicated that ambiguity was tied primarily to the production function, the study examined perceived ambiguity of inputs, processes, and outputs within subsystems of the higher education organization.

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*Coupling of Subsystems within Higher Education*

As highlighted in Chapter I, the relationship between various subsystems within a higher education organization may influence the adoption of management innovations (Birnbaum, 2001). Therefore, coupling of subsystems will be a variable of interest in this study. Weick (1976) described the relationship between two subsystems along a continuum that ranges from tightly coupled to loosely coupled. Tightly-coupled relationships exist when changes in one subsystem have a direct, corresponding result in the second subsystem (Weick, 1976). Loosely coupled relationships are evident when changes in one subsystem do not have a direct and corresponding result in a second subsystem (Weick, 1976). As an example, suppose the university assessment committee meets and decides that it is important for all degree programs to administer capstone exams to determine the level of student learning within each academic program. If this decision leads to the implementation of capstone exams across the campus, the connection between the university assessment committee and the university's academic programs would be considered tightly coupled. Conversely, it is important to consider another situation where the president, through executive memorandum, decrees that capstone exams must be put in place across campus as part of the university's new accountability program. If the decree is met with resistance and results in limited or no change, the relationship between the administrative subsystem and the academic subsystem would be considered loosely coupled.

While these two examples are simplistic and present tight and loose coupling as dichotomous variables, in reality, operational relationships function along a continuum between tightly and loosely coupled. The degree of tightness or looseness is most likely

contributable to two conditions: "the extent to which subsystems have common

variables between them and the extent to which the shared variables are important to the

subsystem" (Birnbaum, 1988, p. 39). Basically, if subsystems have common elements

and if those common elements are important to each subsystem, the relationship will

tend to be more tightly coupled. Thus, change in one subsystem would cause

corresponding change in the other subsystem. On the other hand, if subsystems share

only a few, unimportant elements, the relationship will be more loosely coupled, and

corresponding change in each subsystem would be minimal.

Coupling in higher education organizations is further complicated by structural

components (Birnbaum, 1988). As previously discussed, most higher education

organizations typically include two, fully developed subsystems: the faculty subsystem

and the administrative subsystem (Mintzberg, 1979). The values of each subsystem are

more different than they are alike (Mintzberg, 1979). Autonomy valued by the faculty

subsystem is perhaps seen as a barrier to organizational effectiveness and efficiency

valued by the administrative subsystem (Birnbaum, 2001, Mintzberg, 1979). The

relationship between the two subsystems in most cases can be characterized as being

loosely coupled (Birnbaum, 1988, 2001). Therefore, one may infer that management

innovations introduced by the administrative subsystem are less likely to influence

direct change in the faculty subsystem.

Additionally, coupling in higher education is contextual. Organizations are not

only impacted by the way in which subsystems are connected, but are also impacted by

the "intentions, preconceptions and wills" of individuals within the subsystem

(Birnbaum, 1988, p. 38). Basically, the coupling of one subsystem to another subsystem

is dynamically linked to the individuals within each subsystem. As individuals within each subsystem change and/or as the perceived needs of individuals change, coupling of that subsystem to another subsystem is impacted. This contextual element of coupling led Birnbaum to refer to higher education organizations as being more probabilistic than deterministic. In essence, it is difficult to predict with great certainty the outcome of a management innovation introduced to the system or to predict the future state of the organization linked to the introduction of the management innovation even though the historical and present conditions of an organization might be known and even though the historical and present conditions of the various subsystems within the organization might be known (Birnbaum, 1988). To summarize, it appears as though the acceptance or rejection of a management innovation within higher education could be impacted by the coupling of the administrative and faculty subsystems within the organization, which in turn is impacted by the wants, needs, and desires of individuals within each subsystem.

Just as subsystems within the organization can be tightly or loosely coupled, relationships between various subsystems of an organization can also be tightly or loosely coupled with external subsystems (Birnbaum, 1988; Weick, 1976). Subsystems within the university interact with an external environment that includes many subsystems with a wide range of interests, expectations, and demands (Birnbaum, 1988). For example, a governing board might impose a mandate to improve graduation and retention rates within nursing programs to meet better the demand for more nurses within its service area. Simultaneously, it is quite conceivable that an external credentialing board insists that the nursing program implement a more rigorous

academic curriculum to improve the quality of graduates. How does an organization manage these seemingly conflicting mandates? Birnbaum (1988) and Weick (1976) contend that loosely coupled subsystems within the university make it easier for the university to respond to conflicting demands. One subsystem can respond to a demand and can change without impacting other subsystems so long as the two subsystems are loosely coupled.

To understand further the impact of coupling on the adoptions of management innovations in higher education organizations, the adoption path taken by management innovations should be considered. Management innovations are most often introduced to institutions through external subsystems and in reaction to a perceived crisis (Birnbaum, 2001). Subsystems external to an institution often include professional organizations, state level committees, and state legislatures who share common concerns and reactions to an economic crisis (Birnbaum, 2001). Next, these external subsystems introduce to the internal, administrative subsystem a cure for the crisis. The external subsystem (i.e., the governing board) and the internal, administrative subsystem (i.e., the executive administrative team) share many common components tied to the effective, efficient, and legal operation of the institution, and most of these components are of high importance. Thus, the relationship between the governing board and the administrative team in this instance could be considered tightly coupled, and one would expect that the governing board and the administrative team to move forward with the adoption of the innovation based on external subsystem's request and pressure. As Chief Academic Officers (CAO) prepare to move forward with adoption, they realize that while they share many important components with the president they also

share important components with the academic unit. The issue for CAOs then becomes how to negotiate balance between two subsystems to which they are tightly coupled. As the decree to adopt the management innovation is passed from the CAO to the Academic Dean and then to the Department Chair, the relationships between the administrative subsystem becomes more loosely coupled and the relationship to the faculty subsystem becomes more tightly coupled. At this point of tension, the department chair must decide if and how to proceed with the adoption of the innovation. Is it possible for academic administrators to balance this tension? Is it possible for academic administrators to move forward with adoption of the management innovations in such a way that the values of the administrative subsystem are met and in such a way that the values associated with autonomy are supported by the professional operating core are not infringed? Is so, how is balanced achieved?

To summarize, the literature seems to indicate that the adoption of the management innovation is potentially contingent upon the perceived degree of coupling that exists between the proposed management innovation and the organizational subsystem in which an individual is located. The more tightly coupled a management innovation is to a subsystem, the greater the likelihood of adoption. Conversely, the more loosely coupled a management innovation is to a subsystem, the less likelihood of adoption. Therefore, the study examined how individuals in a given subsystem within a higher education organization perceived the degree of coupling of their subsystem to a proposed management innovation.

*The Evolution of Organizational Theory in Higher Education*

*Overview of the Section*

The literature reveals at least three characteristics that distinguish higher education institutions from business organizations: power that is more dispersed than centralized; organizational ambiguity associated with the production function; and subsystems that are more loosely coupled than tightly coupled. The use of multiple organizational theories is important in understanding the contextual functions of these characteristics and their impact on the adoption of management innovations (Birnbaum, 1988). Organizational theories are important because they provide an abstraction of the reality in which organizations function (Baldridge, et al., 1977; Birnbaum, 1988; Bolman & Deal, 1997). A single organizational theory will often highlight organizational functions from a single reality while diminishing other realities (Baldridge, et al., 1977; Birnbaum, 1988; Bolman & Deal, 1997). Logically, the use of multiple theories facilitates an examination from multiple perspectives, thus providing a more comprehensive understanding of these characteristics and their function (Birnbaum, 1988; Bolman & Deal, 1997). As a result, the fifth section of this chapter will focus on examining these characteristics and their functions from the perspectives of four organizational theories: structural theory, human resource theory, political theory, and systems theory.

This section is divided into four subsections. Each subsection will focus on a single organizational theory and will (1) highlight the evolutionary development of the theory; (2) overview the theory's major aspects and assumptions; and (3) provide a

discussion of how each model accounts for power, ambiguity tied to the production

model, and the loose coupling of subsystems within the model.

*Structural Theory and the Bureaucratic Model*

   *Evolution of structural theory and the bureaucratic model.* Structural theory

emerged in concert with the industrial revolution (Shafritz & Ott, 1996). The industrial

revolution was fueled by the advancement of technology and the development of

industrial machines. Industrial machines were expensive and were justified by increased

production to offset their purchase and maintenance. The emphasis on increased

production presented managers with new challenges. "Managers had to arrange for

heavy infusions of capital, plan and organize for reliable large-scale production,

coordinate and control activities of large numbers of people and function, contain

costs,…and maintain a trained and motivated workforce" (Shafritz & Ott, p. 31).

Basically, the success of managers was linked to optimizing the production function of

the organization.

   To optimize the production function, managers came to view the factory as an

extension of its large machines (Wheatley, 1999). Within the factory machine existed

production machines, and within the production machines existed smaller, specialized

machines. Correspondingly, factory laborers performed mechanized functions as

extensions of these machines. Because of the machine metaphor, managerial success

was linked to finding the one best way to maximize efficiency of the production

function (Shafritz & Ott, 1996).

   It was the quest for the one best way that gave birth to structural theory. More

specifically, it was the work of Adam Smith that gave rise to the discipline of

organizational theory and the structural perspective of organizations (Shafritz & Ott, 1996; Toynbee, 1956). In the late eighteenth century at the dawn of the industrial revolution, Smith (1776) examined organizational efficiency within the context of a pin factory. Smith's 1776 work, *An Inquiry Into the Nature and Causes of the Wealth of Nations,* explored organizational structure as a means of increasing production through specialization and division of labor. Smith observed that the production function within a factory can be divided into smaller tasks (specialization), and these smaller tasks may, in turn, be assigned to individual laborers (division of labor). Through these specific assignments, laborers can specialize and better master the assigned task. Correspondingly, increased mastery contributes to increased effectiveness and efficiency of the overall production function.

Citing a pin manufacturing example, Smith (1776) noted that the making of a pin could be divided into eighteen different operations. Each operation could then be assigned to a laborer, and in some cases, two or three operations could be assigned to the same laborer. Smith observed that ten laborers, each assigned to specific operations, could produce 48,000 pens daily. Absent of this division of labor, Smith noted that the same ten men would be fortunate to produce 200 pens. In short, Smith's work was among the first to cite specialization and division of labor as a structural solution to increase effectiveness and efficiency of the production function.

In the 1800s, the literature identifies at least three key individuals responsible for further advancing organizational theory from a structural perspective: Daniel McCallum, Henry Metcalfe, and Henry Towne (Shafritz & Ott, 1996). Daniel McCallum, as superintendent of the New York and Erie Railroad, was the first to

systemize one of America's largest industries. McCallum (1856) identified six principles key to the formation of organizations. The following principles were noted in a written report made by McCallum in the *Annual Report of the New York and Erie Railroad Company for 1855* (p. 47).

- A proper division of responsibilities

- Sufficient power conferred to enable the same to be fully carried out, that such responsibilities may be real in their character.

- The means of knowing whether such responsibilities are faithfully executed.

- Great promptness in the report of all derelictions of duty, that evils may at once be corrected.

- Such information, to be obtained through a system of daily reports and checks that will not embarrass principal officers, nor lessen their influence with their subordinates.

- The adoption of a system, as a whole which will not only enable the General Superintendent to detect errors immediately, but will also point out the delinquent.

In effect, McCallum moved beyond specialization and division of labor (Smith, 1776) to include responsibilities for managers, power to execute those responsibilities, and a system of reporting deficiencies in the execution or responsibilities. Using these principles, McCallum developed perhaps the first organizational chart as a tool to achieve structural efficiency (Shafritz & Ott, 1996).

In the 1880s, the works of Metcalfe (1885) and Towne (1886) were perhaps the first to link organizational management to science. Metcalfe, a captain in the United States Army, advocated the systematic collection of data to increase production efficiency. Through the systematic collection and analysis of data, Metcalfe applied the principles of scientific inquiry to improve production efficiency. At about the same time, Towne, in a presentation to the American Society of Mechanical Engineers (ASME), encouraged the establishment of a forum to facilitate the "publication of papers and reports; and …meetings for the discussion of papers and interchanges of opinion" (p. 49) related to the "management of works" (p. 48). ASME adopted Towne's proposal and took a leadership role in the scientific study of the "management of works." In short, the works of Metcalfe and Towne further paved the way to studying organizations using the principles of scientific inquiry, thus elevating the study of organizations and management to a recognized discipline.

The elevation of management to a science was a catalyst to more comprehensive structural theories. In 1916, Henri Fayol, a French engineer, published *General and Industrial Management*. Though not translated to English until 1949, the work is perhaps the earliest example of a comprehensive structural theory (Shafritz & Ott, 1996). Fayol proposed the universal application of his comprehensive structural theory. Fayol's theory identified six organizational structures: "technical (production of goods); commercial (buying, selling, and exchange activities); financial (raising and using capital); security (protection of property and people); accounting; and managerial (coordination, control, organization, planning, and command of people)" (Shafritz &

Ott, p. 34). It appears that Fayol's six-structures signaled a departure from the simple, mechanistic perspective of organizations that prevailed in the 1800s.

Though Fayol's theory presented a comprehensive structural perspective of organizations, it appears that he recognized the elevated importance of the managerial structure. Fayol noted that "whilst the other functions bring into play material and machines, the managerial function operates only on the personnel" (p. 53), and went on to observe that the managerial function is contingent upon a "certain number of conditions termed indiscriminately principles, laws, and rules" (p. 53). Fayol identified a number of managerial principles to be used to maintain "soundness and good working order" of the organization. However, Fayol cautioned against rigid applications of these principles.

> …a suggestion of rigidity, for there is nothing rigid or absolute in management affairs, it is all a question of proportion. Seldom do we have to apply the same principle twice in identical conditions; allowance must be made for different changing circumstance, for men just as different and changing and for many other variable elements. (p. 52)

Essentially, while Fayol's major contribution was the presentation of one of the earliest comprehensive structural theories, it also appears Fayol was perhaps among the first to note managerial approaches were contingent upon organizational conditions.

Across the Atlantic in the United States, Frederick Winslow Taylor was promoting a more rigid managerial approach – scientific management. Taylor (1916), building on the work of Metcalfe (1885) and Towne (1886), encouraged managers to use scientific inquiry as a means to study production functions and to maximize

efficiency within organizations. As an example, Taylor (1916) in an address titled *The Principles of Scientific Management* discussed the study of coal shoveling. At Bethlehem Steel Works, Taylor observed men shoveling rice coal. Each shovel load of rice coal weighed 3 ¾ pounds; however, these same men when working with iron ore shoveled 38 pounds in each load. As an observer, Taylor questioned why the difference in weight and wondered what weight could be used to achieve optimum efficiency. Through a series of experimental activities, Taylor identified an optimum weight of 21 pounds. At 21 pounds, the ore piles reached a maximum height in the shortest amount of time. As a result of the experiment, 21-pound shovels where made to correspond to the materials being shoveled, and work flows in the steel yard were reorganized to ensure that each man had the appropriate shovel for the work being performed. Because of this experiment and the resulting changes, production at Bethlehem Steel increased.

In essence, Taylor (1916) concluded efficiency could be achieved when managers engaged in the scientific examination and modification of production functions. Correspondingly, the responsibilities of the scientific manager was to (1) identify production functions, (2) identify the one best way to perform those functions, and (3) train workers and organize work flow necessary to standardize the one best way within that production function. Over time, the scientifically managed organization would emerge as the one best manufacturer for a given product. Indeed, scientific management sought to optimize organizational efficiency by increasing output through standardization of best way processes.

Scientific management was pushed to center stage in the early 1900s due to a series of railroad rate hearings (Shafritz & Ott, 1996). The eastern railroad companies

were appearing before the Interstate Commerce Commission because of requested rate increases. There was significant opposition to the rate increases. During the hearings, a consultant who had applied the principles of scientific management at the Santa Fe Railroad indicated that the eastern railroads could save a million dollars a day by simply applying the principles of scientific management (Urwick, 1956). Because of the hearings, scientific management became one of the first management innovations to become a national movement (Shafritz & Ott, 1996).

Structural organizational theory was introduced to higher education in 1910 at the dawn of scientific management, when Morris Cooke, a mechanical engineer, was commissioned by the Carnegie Foundation for the Advancement of Teaching to examine efficiencies within higher education (Birnbaum, 2001). Cooke traveled to several universities and examined organizational structures and functions at each university. After these visits, Cooke (in Birnbaum, 2001) wrote,

> There are very few, if any, of the broader principles of management which obtain generally in the commercial world which are not, more or less, applicable in the college field, and as far as was discovered, no one of them is now generally observed. (p. 16)

In other words, Cooke noted the absence of contemporary business management strategies in higher education and noted no barriers to prevent the usage of such strategies. More specifically, Cooke proposed that institutions establish standards to measure efficiencies and then establish processes to reach those standards.

Cooke specifically suggested the establishment of the credit hour to measure institutional efficiency. Within a short time, the credit hour recommendation was

adopted by most institutions (Birnbaum, 2001), and most institutions started collecting data on many operational aspects and most institutions added businesspersons as trustees (Allen, 1917; Birnbaum, 2001). In addition, Cooke was among the first to question academic autonomy, and noted, "The college professor must take the position that he is not an individual set apart, and that in the long run he must be governed and measured by the same general standards that generally obtain in other occupations" (Cooke in Birnbaum, 2001, p. 16). In essence, Cooke's work was perhaps one of the earliest management innovations to track from business to higher education and signaled the start of the race toward increased effectiveness and efficiency within higher education (Birnbaum, 2001).

From the work of Adam Smith, Daniel McCallum, Henry Metcalfe, Henry Towne, Henri Fayol and Frederick Taylor, it is evident that structural theory emerged in concert with the prevailing paradigm of the time – a rational paradigm focused on a quest for optimal organizational effectiveness and efficiency through the standardization of the production function (Shafritz & Ott, 1996). With the industrial revolution of the nineteenth century came a new array of production and managerial problems to be solved. According to Shafritz and Ott (1996), "The beliefs of early management theorists about how organizations worked or should work were a direct reflection of the societal values of their times" (p. 31), and the prevailing value of the time was scientific inquiry. In essence, scientific inquiry became the means by which mechanical engineers, industrial engineers, and economists of the late 1800s examined the inner workings of the factory in light of production-related goals. In a discussion about the factory system and the pressures of the time, Shafritz and Ott (1996) wrote,

Under the factory system, organizational success resulted from well-organized production systems that kept machines busy and costs under control. Industrial and mechanical engineers – and their machines – were the keys to production. Organizational structures and production systems were needed to take best advantage of the machines. Organizations, it was thought, should work like machines, using people, capital and machines as their parts. Just as industrial engineers sought to design "the best" machines to keep factories productive, industrial and mechanical engineering-type thinking dominated theories about "the best" way to organize production. (p. 31)

By the 1930s and 1940s, structural theory evolved to accommodate growing organizations (Shafritz & Ott, 1996). The work of Luther Gulick and Max Weber signaled a departure from a mechanistic view where organizations were viewed as simple machines to a view where organizations were viewed as a composite of subdivisions (Shafritz & Ott, 1996).

In 1937, Luther Gulick proposed to increase organizational efficiencies through division of work and managerial responsibility. In his *Notes on the Theory of Organization*, Gulick (1937) noted that "work division is the foundation of organization" (p. 86). Gulick recognized that an organization built around subdivisions required an "effective network of communication and control …[linked by the] executive at the center and the subdivisions of work" (p. 89). Basically, Gulick realized that a large organization with multiple subdivisions must have communication and

authority structures that link subdivisions with the chief executive controlling the organization. Glick (p. 89) proposed four steps to achieve this type of organization:

1. Define the job to be done.

2. Provide a director to see the objective is realized

3. Determine the nature and number of individualized and specialized work units into which the job will have to be divided…subdivision depends partly upon the size of the job...and upon the status of technological and social development at a given time.

4. Establish and perfect the structure of authority between the director and the ultimate work subdivisions.

In essence, Gulick recognized that larger organizations required subdivision, that subdivision should be based on the job to be performed, and that a subdivided organization required a system of authority and communication to ensure standardization of processes and outputs.

Max Weber, on the other hand, viewed organizations as "networks of social groups dedicated to limited goals and organized for maximum efficiency" (Baldridge, et al., 1977, p. 132). Weber (1922) was among the first to recognize the difference between formal work organizations, like factories, and less formal work organizations, like hospitals and universities. Weber introduced the term "monocratic bureaucracy" to describe these less formal organizations. Weber (1922, pp 80-81) identified the following six characteristics of a bureaucracy:

1. There is the principle of fixed and official jurisdictional areas, which are generally ordered by rules, that is by laws or administrative regulations *(division of labor)*.

2. The principles of office hierarchy and of levels of graded authority mean a firmly ordered system of super- and subordination in which there is a supervision of the lower offices by the higher ones *(hierarchy)*.

3. The management of the modern office is based upon documents, which are preserved in their original or draught form *(policies and procedures)*.

4. Office management, at least all specialized office management – and such management is distinctly modern – usually presupposes thorough and expert training *(specialization)*.

5. When the office is fully developed, official activity demands the full capacity of the official, irrespective of the fact that the obligatory time in the bureau may be firmly delimited.

6. The management of the office follows general rules, which are more or less stable, more or less exhaustive and which can be learned.

In essence, Weber saw the need for subdivision of growing bureaucratic organizations as a means of increasing organizational efficiency. Subdivision occurred around social systems prescribed by administrative regulations. These subdivisions required a management hierarchy that used established policies and procedures to standardize practices.

To summarize, both Gulick (1937) and Weber (1922) explored the use of subdivision as a means of establishing rationality within growing organizations.

Through structured lines of authority, communication and written procedures, organizations could better ensure standardization of processes and ensure standardization of outputs or services.

Henry Mintzberg is the final structural theorist that will be examined. It appears that Mintzberg (1979), like Weber and Gulick, theorized that increased organizational complexity required increased subdivision and standardization. Mintzberg noted that in a simple organization standardization and efficiency can be achieved by *operators* who are "largely self sufficient" (p. 232). As organizations grow in complexity and as division of labor occurs there is need for a *manager* to "coordinate the work of the operators" (p. 232). Again as the organization grows with additional subdivisions and additional managers, there becomes a need for not only managers of operators, but managers of managers or in other words, an *administrative hierarchy*. As the organization grows yet again, a second administrative structure emerges in the form of *analysts* who become responsible for standardization of work processes, management, outputs and skills. In his 1979 book, *The Structuring of Organizations*, Mintzberg identified five interdependent social networks that emerge from a complex organization like the one described above:

1. Operating core: operators who carry out the basic work of the organization – the input, processing, output, and direct support task associated with producing the products or services.

2. Strategic apex: Those managers who are at the very top of the administrative hierarch, together with their personal staff.

3. Middle line: Those managers that join the strategic apex to the operating core.

4. Technostructure: Analysts who carry out their work of standardizing the work of others, in addition to applying their analytical techniques to help the organization adapt to its environment.

5. Support staff: Staff that support the functioning of the operating core indirectly.

Mintzberg (1979) noted the structure of an organization is contingent on two factors: complexity and stability. Depending on the complexity and stability of its environment, an organization may take on one of four organizational types (see Figure 1): machine bureaucracy (low complexity, high stability); professional bureaucracy (high complexity, high stability); simple structure (low complexity, low stability); and adhocracy (high complexity, low stability).

*Figure 1*. Mintzberg's organizational structures

| | | Complexity | |
|---|---|---|---|
| | | Low | High |
| Stability | High | Machine Bureaucracy | Professional Bureaucracy |
| | Low | Simple Structure | Adhocracy |

Mintzberg (1979) labeled higher education as a professional bureaucracy given that it functions within a highly stable and highly complex environment. The operating core of the professional bureaucracy requires operators that are highly knowledgeable and skilled. As noted by Mintzberg,

The Professional Bureaucracy relies for coordination on the standardization of

skills and its associate design parameter, training and indoctrination. It hires

duly trained and indoctrinated specialists – professionals – for the operating

core, and then gives them considerable control over their own work. In effect,

the work is highly specialized. (p. 50)

In effect, at the heart of the professional bureaucracy is the operating core where

power and authority are rooted in professional expertise (Mintzberg, 1979). The

professional bureaucracy is highly democratic because of the power of the professional

(Mintzberg, 1979). Professionals seek to control their own specialized work and to

control "administrative decisions that affect them" (Mintzberg, 1979, p. 56). Mintzberg

even noted that professional bureaucracies often have "parallel administrative

hierarchies, one democratic and bottom up for the professionals, and a second machine

bureaucratic and top down for support staff" (p. 57), thus establishing that professional

bureaucracies often have a plurality of power. Structurally, the only other fully

developed aspect of the professional bureaucracy is the strategic apex. Basically, the

strategic apex in the professional bureaucracy is the administrative support structure

whose primary role is to serve the operating core (Mintzberg, 1979). Within the

professional bureaucracy, middle line managers provide the link between the

professional operating core and the strategic apex (Mintzberg, 1979; Birnbaum, 1988).

In higher education organizations, middle line managers are often staffed by

professionals associated with the professional operating core such as academic

department chairs and deans. The technostructure is defined as that part of the

organization that plans, coordinates, and formalizes the work of the professional

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operating core (Mintzberg, 1979). Technocrats in higher education include those individuals who assist faculty with instructional development, curriculum development or course modification. The role of support staff within the professional bureaucracy is to provide direct and indirect support to the operating core (Mintzberg, 1979). Essentially, the purpose of middle management, technocrats, and support staff is to serve the specialized professionals within the operating core who require very little direct supervision.

In essence, Mintzberg (1979) theorized that organizations include five basic structures. The organization and coordination among these structures is contingent upon the complexity and stability of the environment in which an organization functions. Mintzberg noted that organizations like hospitals and higher education institution function in an environment that is highly complex and highly stable and labeled such organizations professional bureaucracies. The largest and most developed structure within the professional bureaucracy is the operating core. The operating core is made up of highly skilled and knowledgeable professionals. These professionals have standardized professional skills and norms and require little supervision. Therefore, standardization of processes and outputs rests largely in the hands of the professional operating core.

To summarize, structural theorists provide organizational views that emerged contemporaneous with the factory system and scientific inquiry. Structuralists viewed standardization of the production function as a means of achieving organizational efficiency and effectiveness. As organizations grew in size and complexity, terms like division of labor, job descriptions, span of control, organizational hierarchy,

specialization, policies, and procedures became the tools by which structuralists sought to standardize management, communication, and authority in an effort to control organizational processes and outputs. Structuralists like Weber and Mintzberg eventually realized that the internal and external environment in which an organization functions impacts its structure and tried to design organizational models that account for environmental issues like stability and complexity. But even the purpose of these models was to identify and to design structures that reinforce standardization at the appropriate level within the appropriate structures. In short, structural theorists focused on dissecting an organization into appropriate parts as a means to establish controls necessary to achieve standardization of technical processes and outputs. To further understand the structural theory and its potential impact on the adoption of management innovations, it is important to examine the assumptions associated with structural theory.

In essence, this section of Chapter II has provided an overview of structural theory. This overview highlighted the evolution of structural theory from the initial works of Adam Smith in 1776 through the works of Taylor. This section also explored the linkage of structural theory with the bureaucratic organization model. Finally, the section ended with a discussion about the contributions of Gulick, Weber, and Mintzberg to structural theory. The next section will move into a more detailed discussion concerning the underlying assumptions of the structural theory and will be followed by a section that examines how the theory accommodates the three organizational characteristics of higher education.

*Assumptions of structural theory and the bureaucratic model.*

Structural theory appears to be built on a set of core assumptions associated with the production function of organizations. In 1997, Bolman and Deal articulated the following six assumptions associated with structural theory:

1. Organizations exist to achieve established goals and objectives

2. Organizations work best when rationality prevails over personal preferences and external pressures.

3. Structures must be designed to fit an organization's circumstances (including its goals, technology, and environment).

4. Appropriate forms of coordination and control are essential to ensuring that individuals and units work together in the service of organizational goals.

5. Appropriate forms of coordination and control are essential to ensuring that individuals and units work together in the service of organizational goals.

6. Problems and performance gaps arise from structural deficiencies and can be remedied through restructuring.

Primarily, structural theory assumes that effectiveness and efficiency can be achieved through the manipulation of organizational structure necessary to reinforce the standardization of inputs, processes, and outputs. As will be discussed in the next few paragraphs, the literature seems to indicate that structural theory is built on assumptions that conflict with at least two of the three characteristics that distinguish higher education from business organizations.

*Power, ambiguity, and coupling within structural theory.* The literature potentially indicates power within the examined structural theories is more centralized than decentralized and is more contingent upon position than the individual. Based on the previously noted assumptions, centralized power linked to position within the organizational hierarchy is required in order to standardize the production function of the organization and to achieve a desired level of efficiency and effectiveness. The exception would be Mintzberg's professional bureaucracy where power is decentralized and is linked to knowledge and expertise of individual within the professional operating core (Birnbaum, 1988; Bolman & Deal, 1997, Mintzberg, 1979). In general, while the literature indicates that the majority of structural theories require power structures that are more centralized than decentralized and more based on position than individuals, Mintzberg's professional bureaucracy does appear to address adequately the decentralized power structures and powers tied to expertise that exist within most higher education organizations.

The literature indicates that structural theory requires goals, inputs, processes, and outputs that are more defined than ambiguous. Clearly defined goals, identified inputs, standardized processes, and measurable outputs are foundational organizational requirements within the examined structural theories (Baldridge, et al., 1977; Birnbaum, 1988; Bolman & Deal, 1997; Gulick, 1937; Mintzberg, 1979; Shafritz & Ott, 1996; Weber, 1922). Articulation of the production function is linked to achieving organizational effectiveness and efficiency (Baldridge, et al., 1977, Birnbaum, 1988; Bolman & Deal, 1997; Shafritz & Ott, 1996). In essence, increased standardization of the production function leads to increased effectiveness and efficiency. Conversely,

ambiguity of the production function results in decreased effectiveness and efficiency. Ultimately, it appears structural theory is less likely to accommodate ambiguity tied to the production function that is more evident in higher education organizations than in business, and thus structural theory might be of little interest in understanding the rejection of management innovations studied by Birnbaum (2001).

With regard to the coupling of subsystems, the literature indicates structural theory requires subsystems that are more tightly coupled than loosely coupled. Structural theory primarily focuses on two subsystems: management and laborers. Gulick (1937) did recognize that growing organizations required further subdivision of labor; however, even within these subdivisions there was still a primary focus on structures that tightly linked these subdivisions with management. Weber's (1922) monocratic bureaucracy and Mintzberg's (1979) professional bureaucracy looked at organizational structures based more on a social network perspective than a purely production function perspective. Because of this, Weber and Mintzberg incorporated subsystems that included specialized laborers that perhaps required less direct supervision than historically nonskilled workforces. Mintzberg went even further in explaining how organizations are structured by identifying two additional subsystems: technostructure and support staff. Mintzberg even contended that highly specialized laborers (professional operating core) were perhaps more reliant upon the technostructure and support staff to complete job functions than middle management or senior level executives (strategic apex). Because of these relationships, it appears that the professional operating core might be more tightly coupled to the technostructure and support staff than to middle managers and the strategic apex. Birnbaum (1988) noted

that "tight coupling in one part of an organization leads to loose coupling in another" (p. 121).

*Conclusion of structural theory and the professional bureaucracy.* As a conclusion to this discussion on structural theories and the professional bureaucracy, the literature indicates that early structural theorists focused on the standardization of the production function to achieve organizational effectiveness and efficiency. These early structures required centralized power and the tight coupling of the organization's two subsystems: management and laborers.  Essentially, early structural theories do not adequately account for the three distinguishing characteristics of higher education organizations: power that is more decentralized than centralized; ambiguity tied to the production function and subsystems that are more loosely coupled than tightly coupled. However, it does appear that later structural theories, like Weber and Mintzberg, evolved to account for the growing complexity of organizations, and more specifically, the increased specialization and expertise of laborers. Most promising in addressing the complexity of higher education organizations was Mintzberg's professional bureaucracy. While the professional bureaucracy did continue to some degree to require standardization tied to the production function of organization, the profession bureaucracy did move toward providing a structural model that recognized the reality of decentralized power and power tied to expertise; additional subsystems beyond management and laborers; and the coexistence of loosely coupled and tightly coupled subsystems within a single organization. Therefore, for the purpose of the study, the literature indicated that some elements of Mintzberg's professional bureaucracy might serve as a model to understand how decentralized power and loosely coupled

subsystems influenced the adoption of management innovations within higher education.

*Human Resource Theory and the Collegial Model*

*Evolution of human resource theory and the collegial model.* Some have noted that the rise of human resource theory began near the end of the World War II (Shafritz & Ott, 1996). It was during this period some organizational theorists began to challenge the foundational assumptions of structural theory (Barnard, 1938; Shafritz & Ott, 1996; Simon, 1946). The literature indicates that at least three organizational theorists contributed to this initial questioning and paved the way for eventual emergence of behavioral theory: Chester Barnard, Herbert Simon and Peter Selznick.

Chester Barnard was perhaps the first to signal a departure from the fundamental assumptions of structural theorists. In 1938, Barnard authored *The Functions of the Executive*. In this work, Barnard "sought to create a comprehensive theory of behavior in formal organizations that was centered on the need for people in organizations to cooperate – to enlist others to help accomplish tasks that individuals could not accomplish alone" (Shafritz & Ott, p. 97). Essentially, Barnard viewed the individual as the foundational element within an organization, a significant departure from viewing the production function as the foundational element. Such a theoretical departure began to link organizational efficiency to the willingness of individuals to cooperate to achieve organizational goals rather than efficiency linked to standardization of inputs, processes, and outputs. Similarly, the role of management in this view of organization moved from standardization of the production function and enforcement of the standardization to a role that supported cooperativeness of individuals within organizations. Indeed, Barnard

argues that failure of leaders to establish a cooperative system allows the "egotistical motives of self-preservation and of self-satisfaction" (p. 101) to become dominant within individuals who will ultimately lead to organizational "dissolution, or changes of organizational purpose" (p. 101). Basically, establishing a system of cooperation is paramount to the success of the organization. Bernard noted that to establish a system of cooperation requires managers to engage in three fundamental activities and as such viewed the role of an organizational leader as three-fold: to create and maintain a sense of organizational purpose; to develop formal and informal communication systems; and to foster cooperation through varied incentives and persuasion.

In 1946, the *Public Administration Review* published an article titled "The Proverbs of Administration" written by Herbert Simon. In this article, Simon questioned structural theory at a very foundational level. Simon noted that good scientific theory should not only explain what is true, but should also provide an explanation of what is false. Simon elaborated,

> If Newton had announced to the world that particles of matter exert either an attraction or repulsion on each other, he would not have added much too scientific knowledge. His contribution consisted in showing that an attraction was exercised and in announcing the precise law governing its operation. (p. 112)

In making this statement, Simon accused contemporary structural theorists of propagating organizational proverb instead of organizational theory. Simon noted that proverbs are used to rationalize "behavior that has already taken place or justifying action that has already been decided upon" (p. 112).

Simon (1946) found structural theories and their administrative principles to be inconsistent, conflicting, and lacking "application to concrete problems of administrative organization" (p. 113), especially when applied to organizations like health departments and city government. Specifically, Simon noted that the principles of specialization, administrative hierarchy, span of control, and organizational structure based on purpose, process, clientele, and place lack contextual understanding and conflict with organizational realities as well as the principles of efficiency. As an example, Simon noted the following about specialization,

> In appears that the simplicity of the principle of specialization is a deceptive simplicity – a simplicity which conceals fundamental ambiguities. For "specialization" is not a condition of efficient administration; it is an inevitable characteristic of all group effort, however efficient or inefficient that effort may be. (p. 113)

Through quotes like the one above, Simon signaled that organizational effectiveness and efficiency might be linked more to social or behavioral structures than to traditional production functions, thus questioning the fundamental, production-based assumptions of structural theorists.

In 1948, the *American Sociological Review* published an article by Philip Selznick titled "The Foundation of the Theory of Organization." Selznick was among the first to formally acknowledge that organization's have irrational aspects by noting that formal organizational structures "never succeed in conquering the nonrational dimensions of organizational behavior" (p. 127). Selznick further elevated the importance of nonrational dimensions by noting that it is "indispensable to the

continued existence of the system of coordination and at the same time the source of friction, dilemma, doubt, and ruin" (p. 127). In short, Selznick offered that organizations should be viewed from two perspectives: (1) the formal organization that should be viewed as economy; and (2) the informal organization that should be viewed as an adaptive social system. The formal, or economy, view is consistent with the structuralists views of organizations in which production functions can be manipulated for the purpose of increased effectiveness and efficiency. The informal, or the adaptive social system, view is linked to the myriad of internal and external relationships that exist within an organization. Selznick noted, while an organization can be analyzed from these two distinct perspectives, both "are empirically united in a context of reciprocal consequences" (p. 128). Selznick argued that organizations are cooperative systems "constituted of individuals interacting as wholes in relation to a formal system of coordination." In effect, the reality of organizations results from reciprocal interactions of two subsystems: the formal and the informal. These two subsystems are more tightly coupled than loosely coupled (i. e., changes in one subsystem will have a direct and corresponding effect in the other). Ultimately, Selznick identified the following three ideas that should be incorporated into organizational theory:

1. The concept of organizations as cooperative systems, adaptive social structures, made up of interacting individuals, subgroups, and informal plus formal relationships;

2. Structural-functional analysis, which relates variable aspects of organizations (such as goals) to stable needs and self-defensive mechanisms;

3. The concept of recalcitrance as a quality of the tools of social, involving a break in the continuum of adjustment and defining an environment of constraint, commitment, and tension.

At the heart of Selznick's (1948) theory of organization was the realization that organizations are made up of individuals who may or may not hold the same goals and desires of the organization and that these individuals function within a context of a social system full of interactions internal and external to the organization. Therefore, Selznick realized that the introduction of innovations elicits socially constructed responses that influence the adoption or rejection of the innovation. Management innovations that threaten the stability or existence of the organizations must work through a process that Selznick titled cooptation, which is "the process of absorbing new elements into the leadership or policy-determining structure of an organization as a means of averting threats to its stability or existence." Essentially, cooptation is reflective of tensions that exist between formal controls, represented by structure and leadership, and social power, represented by the "subjective and objective factors which control the loyalties and potential manipulability of the community" (p. 136). Selznick theorized that when management innovations meet mutual needs of both the formal and informal subsystems those innovations are more likely to be adopted. Conversely, management innovations that threaten the informal systems and social power within that subsystem, the innovation will likely be rejected or will lead to compromises that insure stability of social power or an acceptable sharing of power between the formal and informal subsystems. There are four factors from Selznick's work that are important to this study: (1) organizations contains formal and informal subsystems; (2)

these subsystems may be tightly coupled or loosely coupled; (3) the adoption of management innovations in organizations is influenced by social behaviors; (4) when management innovations align with the needs of both the formal and informal subsystems, the innovation is perceived as legitimate and is likely to be adopted, thus inferring that legitimacy to some degree is socially constructed.

Building on the work of Simon, Barnard, and Selznick organizational theory began to be linked to human and social psychology by the early part of the twentieth century. Hugo Munsterberg, a German-born psychologist, used behavioral psychology as a means to explore the relationship between employee characteristics (abilities, behaviors, and attitudes) and the psychological conditions within organizations and the impact of the two on employee productivity (Shafritz & Ott, 1996). Beginning in the 1960s, the applied behavioral scientists explored the nexus between employee growth and development and organizational growth and development (Shafritz & Ott, 1996). By focusing on the relationship between the individual and the organization, the behaviorist perspective shifted and gave rise to human resource theory.

Primary authors associated with human resource theory include Elton Mayo, Abraham Maslow, and Douglas McGregor. Elton Mayo and his team of researchers are most closely associated with a series of studies that occurred at the Hawthorne plant of the Western Electric Company beginning in 1927. Mayo's primary contribution was a new view from which to explore organizations. From Mayo's perspective, as noted by Shafritz and Ott (1996),

> the organization is not the independent variable to be manipulated in
>
> order to change behavior (as a dependent variable). . . . Instead, the

organization must be seen as the context in which behavior occurs. It is

both an independent and a dependent variable. The organization

influences behavior just as behavior shapes the organization. The

interactions shape conceptualizations of jobs, human communication and

interaction in work groups, the impact of participation in decisions about

one's own work, roles, and the roles of leaders. (p. 151)

Mayo was among the first theorists to detect the important role that relationships

between individuals and subsystems play within organizations.

Another important author that contributed to an understanding of organizations

from a  behaviorist perspective was Abraham Maslow. Maslow was an existential

psychologist who established that an understanding of an individual's needs is a critical

starting point when discussing individual motivation. In his 1943 article "A Theory of

Human Motivation", Maslow identified three premises related to individual needs. First,

Maslow noted that individuals have five basic needs *(italicized* portions taken from

Bolman & Deal, 1997, p. 104):

1.  Physiological *(need for oxygen, water, food, physical health and comfort)*

2.  Safety *(need to be safe from danger, attack, and threat)*

3.  Belongingness and love *(need for positive and loving relationships with other people)*

4.  Esteem *(need to feel valued and to value oneself)*

5.  Self-actualization *(need to develop to one's fullest, to actualize one's potential)*

Maslow noted that these needs are related and are arranged in a hierarchy. In other words, an individual cannot seek to meet the next need until the previous need had been realized. Second, Maslow theorized that the hierarchy is the underlying motivator of human behavior – humans seek opportunities and engage in activities that help the realization of these needs. Thirdly, the removal of any need once it is realized is perceived as a psychological threat, and equally important, the limitation of cognitive activities that help in the realization of the basic needs is perceived as an equal threat.

In the 1960s, a professor from MIT, Douglas McGregor, viewed Maslow's (1943) work from an organizational theorist perspective and hypothesized that employment was a means by which individuals sought fulfillment of needs. Professor McGregor (1957) introduced organizational theorists to the concept that laborers in trying to fulfill these needs wanted to be productive and ultimately demonstrate behaviors that fulfill managerial expectations. To illustrate this principle, McGregor developed Theory X and Theory Y. Each theory is based on a set of dichotomous managerial assumptions related to employee motivation. Theory X is reflective of classical structural theory: employees dislike work, avoid work, prefer to be led, resist change, and generally, are sluggards. Theory X managers emphasize direction, manipulation, and control (McGregor, 1957). Conversely, Theory Y individuals are self-directing, highly-committed individuals who genuinely find work to be satisfying. Theory Y managers seek to "arrange organizational conditions so that people can achieve their own goals best by directing their efforts toward organizational rewards" (McGregor, 1960, p. 61). McGregor warned that managerial assumptions related to these two theories and the outward manifestations of these assumptions by managers

lead employees to respond accordingly. As a summary, "Theory X places exclusive reliance upon external control of human behavior, while Theory Y relies heavily on self-control and self-direction" (McGregor, 1957, p. 180). Either way, follower behavior becomes self-fulfilling prophecies linked to the perspectives of their leaders (Shafritz & Ott, 1996). Because of his work, McGregor was hired as a consultant to design a new plant for Procter & Gamble in Augusta, Georgia. The plan was organized around Theory Y principles of open communication, peer-management, and peer-controlled compensation systems (Bolman & Deal, 1997). Once the new plant was operational, it was "30 percent more productive than any other P & G plant" (Waterman in Bolman & Deal, 1997, p. 101)

To summarize, the organizational behaviorist perspective emerged following the work of Elton Mayo and developed as a major organizational theory due to the notable works of Maslow and McGregor. Organizations were called upon to recognize "people's skills, attitudes, energy, and commitment as vital resources capable of either making or breaking enterprises" (Bolman & Deal, 1997, p. 101). The behaviorist perspective recognized that a symbiotic relationship exists between an organization and individuals within that organization. This perspective calls for organizational creativity where the individuals within an organization arrive at beliefs, attitudes and practices are mutually beneficial and that propel both the individual and the organization to a higher level.

Out of the behaviorist theories grew the collegial organizational model for higher education. The collegial model promotes a culture where the university is viewed as a "community of scholars" (Baldridge et al., 1977). Millet (1962) noted that the

concept of such a community "presupposes an organization in which functions are differentiated and in which specialization must be brought together . . . not through a structure of superordination and subordination of persons and groups but through a dynamic of consensus" (p. 235). In 1973, Sanders further identified a collegial institution as one "marked by a sense of mutual respect for the opinions of others, by agreement about the canons of good scholarship and by a willingness to be judged by one's peers" (in Birnbaum, 1988, p. 87). Downey (1996) further noted that the collegium is a "complex network of assumptions, traditions, protocols, relations, and structures within the university which permit the professoriate to control and conduct the academic affairs of the institution" (p. 6). In short, the collegial model and its community of equals reflect the practical realization of human resource theory within a University setting.

The collegial institution and its community of equals have several key characteristics. Democratic decision making emphasizing thoroughness, deliberation, and consensus is paramount. Thoroughness requires significant interaction facilitated through networks "of continuous personal exchanges" (Birnbaum, 1988, p. 94). The greater the interaction between the members of the community, the more they like each other (Hackman, 1976). Greater interaction also contributes to the emergence of common values and group norms (Birnbaum, 1988; Homans, 1950, 1961; March & Simon, 1958).

Leaders in the collegial model are elected not appointed. Since leaders are elected, they are seen as servants rather than bosses. These servants have special powers

and responsibilities to the institution and to the collegiums, and thus are often seen as the "first among equals" (Baldridge et al., 1977; Birnbaum, 1988).

As the first among equals, leaders are valued for their expertise and their ability to bring additional resources to the group. Leaders gain respect and trust from the collegium by conforming to group norms and by bringing additional resources and prestige to the collegium. Thus, expert and referent power are the means by which leaders exert influence. There is little room for reward, coercive, and legitimate power within the collegial model (Birnbaum, 1988; Baldridge et al., 1977).

Interaction is paramount in the collegial model. Decision making requires "full participation of the academic community" (Baldridge et al., 1977, p. 134). Therefore, the effective leader is a highly dynamic person skilled in the art of interpersonal relationships (Baldridge et al., 1977). The effective leader must coordinate interaction across the collegium and must be willing to engage in such interaction. Birnbaum (1988) concluded that an effective leader in the collegium is one who respects group norms, conforms to group expectations of leadership, respects established channels of communication, does not give an order that will not be obeyed, listens, reduces status differences, and encourages self-control.

To summarize, this section of Chapter II has provided an initial overview of human resource theory. This overview highlighted the evolution of human resource theory from the early works of Chester Barnard in the late 1930 through the works of Maslow and McGregor. Finally, this section ended by linking the emergence of the collegial organization model to human resource theory. The next section will move into a more detailed discussion concerning the underlying assumptions of the human

resource theory and will be followed by a section that examines how the theory accommodates the three organizational characteristics of higher education.

*Assumptions of human resource theory and the collegial model.* Human resource theory appears to be built on a set of core assumptions associated with the production function of organizations. In 1997, Bolman and Deal articulated the following four assumptions associated with human resource theory:

1. Organizations exist to serve human needs rather than the reverse.

2. People and organizations need each other: organizations need ideas, energy, and talent: people need careers, salaries, and opportunities.

3. When the fit between individual and system is poor, one or both suffer: individuals will be exploited or will exploit the organization – or both will become victims.

4. A good fit benefits both: individuals find meaningful and satisfying work, and organizations get the talent and energy they need to succeed. (pp. 102-103)

Primarily, human resource theory assumes that organizational effectiveness and efficiency is linked to the alignment of human needs and organizational needs. As will be discussed in the next few paragraphs, the literature seems to indicate that human resource theory is built on assumptions that conflict with at least two of the three characteristics that distinguish higher education from business organizations.

*Power, ambiguity, and coupling within human resource theory.* First, the literature indicates that power within the examined human resource theories is (1) more dispersed than centralized, and (2) is more contingent upon the individual as opposed to

the position, though elements of both are evident. The emergence of human resource

theory in the nineteenth century represented a shift from effectiveness and efficiency

linked to standardization of the production function to effectiveness and efficiency

linked to social and behavioral structures and the impact of those structures on the

production function (Barnard, 1938; Mayo, 1933; McGregor, 1957; Selznick, 1948;

Shafritz & Ott, 1996; Simon, 1946). The emphasis on social and behavioral structures

within organizations also represented a shift in power within the organization. If the

success of organizations is tied to "people's skills, attitudes, energy, and commitment"

as noted by Bolman and Deal (p. 101), then power is more closely linked to the

individual than to the structure of the organization. Correspondingly, power is more

closely tied to individuals within organizations than to organizational structure, thus

representing a shift from centralized power to power that is more dispersed.

Yukl's (2002) taxonomy of power also provides a framework from which to

examine power within human resource theory. As previously established, Yukl

identified five types of power tied to position (legitimate, reward, coercive, information,

and ecological) and two types of power tied to individuals (referent and expert). Based

on the discussion in the previous paragraph it seems logical that referent and expert

power as defined by French and Raven (1959) might be of greater importance in human

resource theory than perhaps power tied to position. Indeed, power within human

resource theory appears to be linked to the capacity of individuals to construct a work

environment that meets the needs of individuals and the organization. The construction

of such an environment is developed through consensus of individuals. Consensus is

linked to willingness of individuals to identify with the behavior, attitudes, and/or

beliefs of others in the group, thus referent power is important. Additionally, consensus is linked to the personal knowledge of individuals within the group. The greater the knowledge that an individual might have about a given situation, the greater the possibility that person might be able to develop consensus – thus the greater the power. Indeed it does appear the referent and expert power are elevated in human resource theory.

However, what is the role of power? Is power linked to an individual's position minimized in human resource theory? Power linked to position is still evident within human resource theory even though power appears to be more dispersed than centralized and even though power linked to formal authority is minimized. For example, to meet the needs of employees requires that leaders have access to resources in order to meet those needs. Access to resources in organizations is often linked to position. In that regard, it appears reward (the capacity of an individual to have access to resources) and information power (the capacity an individual to information) are equally important in human resource theory. Additionally, ecological power – the capacity to control the physical environment, technology, and organization of work – appears to be elevated. If consensus requires the reorganization of work, power would be linked to those individuals who have authority to control work organization. In short, it appears that power within human resource theory is more dispersed than centralized, and thus accommodates one of the characteristics that distinguishes higher education organizations from business organizations. Also it appears that three types of power linked to position (reward, information, and ecological) and two types of power linked to an individual's characteristics (referent and expert) are perhaps more elevated and

prove useful in understanding the role of power in the adoption of management innovations.

Second, the literature indicates that human resource theory continues to require standardization of the production function to determine effectiveness and efficiency. The primary assumption of human resource theory is that organizational effectiveness and efficiency is linked to the alignment of human needs and organizational needs. The alignment of those needs is obtained through consensus. Consensus is achieved through discussions that lead to the standardization of the production function necessary to meet the needs of the organization and the individual. In essence, efficiency and effectiveness is still achieved through standardization of the production function. However, standardization of the production function in human resource theory is a function that is shared between leader and follower, or in other words standardization to some degree is socially constructed. As a contrast, standardization of the production function in structural theory was strictly a function of leadership.

If the standardization of the production function is a socially constructed process, is it possible for ambiguity tied to the production function to exist? On the surface, it would appear that if the consensus building process leads to the acceptance of ambiguity tied to the production function, then yes, ambiguity tied to the production function would be acceptable. However, as will be illustrated in the following two examples, the capacity of an organization to standardize the production function is paramount to the success of human resource theory.

The first example is often used to illustrate the power of human resource theory (Bolman & Deal, 1997). In 1985, New United Motors Manufacturing, Inc (NUMMI)

opened a automobile manufacturing plant in Fremont, California. The plant was a joint

venture between General Motors and Toyota. Management of the plant was provided by

Toyota and the production model was designed around a human resource philosophy of

"symbolic egalitarianism: workers and executives wore the same uniforms, parked in

the same lots, and ate in the same cafeteria" (Bolman & Deal, p. 135). More

specifically, the plant was organized around the tenets of Deming's Total Quality

Management. The new plant used a workforce of 5,000 former General Motors

employees who had been laid off within the previous year. In the old plant, indicators of

quality were nearly non-existent (Bolman & Deal, 1997; Holusha, 1989; Lawrence &

Weckler, 1990). Within two-years, the Fremont plant was GM's poster plant for quality:

labor costs were down, productivity was up, absenteeism was down, the quality of cars

produced was significantly improved, relationships between the union and the

management were improved, and employee satisfaction was high (Bolman & Deal,

1997; Holusha, 1989; Lawrence & Weckler, 1990). From all indications, it appears that

the plant was a triumph for human resource theory and Total Quality Management,

which lead GM to expand the program to other plants where similar successes were

often replicated (Bolman & Deal, 1997; Hampton & Norman, 1987).

A second example involves the application of human resource theory and TQM

in higher education. For the purpose of the example, I will use a hypothetical small,

liberal arts college with an enrollment of approximately 2,000 undergraduate students

and 85 full-time faculty. Downey College contains an academic unit with two schools

and nine departments. Management in the academic unit includes a vice president for

academics, an assistant vice president, a dean for each school and nine department

chairs. Downey is steeped in the collegial model of governance where decisions are a result of thoroughness, deliberation, and consensus. The community of scholars within the college interact on a formal and informal basis to arrive at common understandings. Downey's mission and functions have evolved over time to include three aspects: to provide high-quality teaching and learning opportunities for its students; to generate research that contributes to the betterment of society; and to engage in service that supports the university and its external community. While discussions within the college have periodically focused on more specifically defining the mission, there has been general consensus that the meaning of the mission should be left to the discretion of the various subunits and individuals within those subunits. Diversity in interpretation of Downey's mission has evolved to be expected and honored.

Overtime, Downey has been pressured by external individuals and groups to adopt indicators of effectiveness and efficiency tied to its mission. With mounting pressure, the college decided to engage in processes that moved toward identifying such indicators. In that process, the faculty within one subunit brought forth a strategy that seemed to honor autonomy of subunits while perhaps addressing external pressures. The subunit noted that this strategy, Total Quality Management, emphasized participation and diversity in the determination of organizational quality. After much review, scrutiny, and discussion, the college decided to move forward with the implementation of TQM. All agreed that TQM would be the process used to define quality measures linked to the universities three fold mission and to eventually identify common processes to help better achieve these indicators. Months into the TQM process, there emerged a number of quality indicators tied to the high-quality teaching that were

ultimately adopted by the college: percent of faculty with a terminal degree, percent of faculty submitting syllabi to a central location, and results from student satisfaction surveys. After several more months, it became evident that consensus related to other indicators would be difficult to achieve and a compromise was reached. The quality indicators in both of the remaining areas were linked to the percentage of departments achieving standards as established within the university's subunits. It also became evident that the identification and standardization of processes would be equally difficult, and ultimately the TQM process was abandoned nearly three years after its adoption.

In comparing the two examples, one might question why the management innovation, TQM, could be successfully adopted in some organizations and not in others. For the purpose of this discussion, one should question the role of the production function in the adoption of TQM. More specifically, was the standardization of the production a prerequisite for the successful adoption of TQM? Indeed, the literature on this issue seems to indicate that human resource management must be accompanied by standardization of the production function (Birnbaum, 1988, 2001; Bolman & Deal, 1997). The NUMMI plant was able to use human resource theory (participative decision making) to standardize processes needed to address mutual needs of the organization (production of a standardized, high-quality product) and individuals. Conversely, Downey, with a rich tradition of collaborative decision making, was not able to standardize process in part due to difficulties tied to identifying common needs of the organization and the individuals. In normative organizations, like Downey, it is difficult to impose deterministic elements tied to production function. It might even be possible

to hypothesize that the collegial environment at Downey can only function and govern in areas that are not linked to the standardization of production function. Once the collegium moves toward standardization, the collegium becomes dysfunctional. Essentially, functionality of the collegial organization is contingent upon ambiguity of the production function.

To summarize, the literature indicates that human resource theory continues to require standardization of the production function to determine effectiveness and efficiency. Standardization of the production function is necessary to facilitate the process of collaborative decision making which is tantamount to the success of human resource theory. In general, it appears that human resource theory does not appear to account adequately for ambiguity tied to the production function associated with most higher education organizations. On the other hand, the collegial model and its functionality appears to be contingent upon ambiguity tied to the production function, and is, therefore, a possibly appropriate perspective from which to view higher education and the adoption of management innovations.

Third, the literature indicates human resource theory allows for subsystems that are both loosely coupled and tightly coupled. Selznick (1948) indicated that there existed two subsystems within organizations: the formal and informal. The formal subsystem is linked to organizational structure and the informal subsystem linked to social structure. These two subsystems are more tightly coupled than loosely coupled. Selznick's observation appears to be at the heart of human resource theory which calls upon the alignment of organizational needs (formal subsystem) to individual needs (informal subsystem) as a means of achieving effectiveness and efficiency. In other

words, the increased meeting of individual needs is met by a corresponding increase in the meeting of organizational needs; and conversely, decreased meeting of individual needs leads to decreased meeting of organizational needs.

Additionally, Selznick contended formal and informal subsystems each contained subgroups. Subgroups within the formal subsystem appear to correspond to structural elements linked to areas like division of labor and specialization. Subgroups within the informal system are determined by relationships within the organization as determined by the needs, values, and beliefs of individuals within the organization. Unlike structuralists, human resource theory indicates that the subgroups within the formal and informal subsystems are more loosely coupled than tightly coupled. Naturally, this coupling occurs within the larger context of the formal and informal subsystems. For example, changes in the organization of the wheel assembly line at NUMMI are likely to have a direct and corresponding change on the organization of the finance department, so long as the changes better meet the needs of the individuals in that unit and the needs of the plant. The loose coupling of subgroups within the formal and informal subsystems is foundational to McGregor's Theory X and the organization of the NUMMI plant. So long as subgroups within the organization adopt innovations that are of mutual beneficence to the individuals and the organization, those innovations are less likely to have an adverse impact on other subgroups, and in fact, the potential for positive impact is greatly increased given the tight coupling of the formal and informal subsystem. In essence, if the tire assembly plant implements an innovation that better meets the needs of the individuals within that unit and the needs of the organization, it is unlikely to have a direct and corresponding impact on the finance

department. However, because it will have an impact on the informal subsystem, that is the needs of individuals will be better met, the change is likely to have a direct and corresponding effect upon the formal organization over time. Subsystems within human resource theory appear to be linked to formal and informal subsystems.

To summarize, the literature indicates that human resource theory in general supports two of the three characteristics that distinguish higher education organizations from businesses. Specifically, human resource theory recognizes that (1) power is more dispersed than centralized and (2) subsystems are viewed as both loosely coupled and tightly coupled. However, human resource theory does not accommodate ambiguity tied to the production function.

*Political Theories and the Political Model*

*Evolution of political theory and the political model.* Thus far, two organizational models have been examined: the bureaucratic model and the collegial model. The bureaucratic model is governed by formal policies, formal authority and formal channels of communication that reinforce rational decision making necessary to achieve organizational goals (Baldridge et al., 1977, Pfeffer, 1981). Within the collegial model, communication, resource allocation, authority, and governance is shared among a community of equals where organizational activity and decisions are "achieved not through a structure of superordination and subordination . . . but through a dynamic of consensus" (Millett, 1962 in Baldridge et al., 1977, p. 134). Bureaucratic and collegial models share three underlying assumptions: (1) the primary purpose of an organization is to accomplish established goals; (2) those with formal authority within organizations are responsible for establishing goals; and (3) rational processes and

formal rules provide the basis of decisions, interactions, and behaviors (Pfeffer, 1981; Shafritz & Ott, 1996). In the 1960s, political theorists, like Cyert, March, and Baldridge, began to challenge these organizational assumptions by examining organizations from a political coalition perspective. By 1981, Pfeffer described the old set of assumptions and their corresponding models as being "naïve, unrealistic and therefore of minimal practical value" (p. 352). Before entering further into a discussion on the assumptions of political models, it is important to define politics and to describe the basis of political activity within organizations.

First, the term politics has been defined a number of ways. Pfeffer (1981) noted politics "involves those activities taken within an organization to acquire, develop, and use power and other resources to obtain one's preferred outcomes in a situation in which there is uncertainty or dissensus about choices" (p.362). Allen et al., (1979) proposed that politics involves "intentional acts of influence to enhance or protect the self-interest of individuals or groups" (p. 77). These two definitions share the following commonalities: (1) politics requires action or activity; (2) the object of that activity is linked to either acquiring or exerting power; and (3) self-interest is the motivating force of that activity. Therefore, politics is defined as an activity in which one engages in order to acquire or exert power necessary to promote the self-interest of an individual or group and to influence organizational decisions.

With politics defined, the next question becomes, what is the organizational context in which political activity occurs? From a political theorist perspective, organizations are made up of many individuals who have diverse needs, varied interests, values, preferences, perspectives, experiences, and perceptions of reality (Bacharach &

Lawler, 1980; Birnbaum, 1988; Bolman & Deal, 1997; Hickson et al., 1976; Mintzberg, 1979; Pfeffer, 1981). These individuals, over time, are linked through a dynamic and complex system of coalitions (Bacharach & Lawler, 1980; Birnbaum, 1988; Bolman & Deal, 1997; Cyert & March, 1963; March, 1962; Mintzberg, 1983; Pfeffer, 1981). Coalitions reflect the efforts of individuals to acquire power necessary to influence an organization's response to historical and current conflicts (Baldridge et al., 1977; Birnbaum, 1988; Bolman & Deal, 1997; Mintzberg, 1983; Pfeffer, 1981). To summarize, political activity within an organization occurs within a complex web of coalitions (Cyert & March, 1963; March, 1962).

This observation leads to the next series of questions: (1) "What is a coalition?" and (2) "Why do coalitions form?" A coalition is "a set of people who bargain among themselves to determine a certain distribution of organizational power" (Mintzberg, 1983, p. 414). Coalitions form because of (1) limited organizational resources; (2) enduring differences; (3) conflict; (4) self-interests; and (5) the pursuit of power (Bacharach & Lawler, 1980; Baldridge et al., 1977; Birnbaum, 1988; Bolman & Deal, 1997; Hickson et al., 1976; Michealsen, 1981; Mintzberg, 1983; Pfeffer, 1981; Weatherly & Lipsky, 1977). More specifically, coalitions form, in part, due to limited organizational resources around which most major organizational decisions are made and for which individuals within the organization must compete (Baldridge et al., 1977; Birnbaum, 1988; Bolman & Deal, 1997). Second, enduring differences exist among individuals (Bolman & Deal, 1997). These enduring differences are linked to the diverse interests, values, preferences, perspectives, experiences, and perceptions of reality associated with each individual (Bacharach & Lawler, 1980; Birnbaum, 1988;

Bolman & Deal, 1997; Hickson et al., 1976; Mintzberg, 1983; Pfeffer, 1981). Third, conflict occurs at the intersection of limited resources and enduring differences (Baldridge et al., 1977; Bolman & Deal 1997). Absent of sufficient resources, conflict arises over policy decisions and resource allocation processes (who gets what and how); and thus conflict becomes a necessary tenant of the political model not to be viewed as a problem, but rather as a natural outgrowth of limited resources and enduring differences (Baldridge et al., 1977; Bolman & Deal, 1997). Fourth, self-interest becomes the primary concern of individuals when faced with conflict (Baldridge et al., 1977; Bolman & Deal, 1997; Michealsen, 1981; Mintzberg, 1983; Pfeffer, 1981; Weatherly & Lipsky; 1977). Finally, no single individual or group has the power to directly influence the resolution of the conflict. As noted by Birnbaum (1988), "Some groups are stronger than others and have more power, but no group is strong enough to dominate all the others all the time" (Birnbaum, 1988, p. 135). Therefore, the pursuit of power becomes the means by which individuals and groups seek to protect their self-interest while resolving conflict (Baldridge et al., 1977; Bolman & Deal, 1997; Michealsen, 1981; Mintzberg, 1983; Pfeffer, 1981; Weatherly & Lipsky; 1977). In short, political activity occurs within a complex system of coalitions. These coalitions form because limited resources and enduring difference create conflict tied to resource allocations and policy discussions. Individuals form coalitions in order to acquire the power necessary to influence organizational decisions that are of common interest to members of the coalition and that tie to these conflicts.

With coalition defined and with an understanding of why coalitions form, the discussion now focuses on how coalitions form. First, the literature indicates coalitions

emerge from a bargaining or negotiation process that includes assessment of power – reflective assessment of one's own power and the power of a potential coalition partner (Birnbaum, 1988; Mintzberg, 1983); assessment of interests (Birnbaum, 1988; Bolman & Deal, 1997; Hickson et al., 1976; Mintzberg, 1983); analysis of potential benefits and costs (Birnbaum, 1988); and negotiations or bargaining (Birnbaum, 1988; Bolman & Deal, 1997). Because of this continual process coalition formation is a complex process of assessment, analysis, and negotiation used by individuals and groups to amass power necessary to influence decisions within organizations, to obtain resources, and to protect self-interest. Coalitions within the political model are fluid (Pfeffer, 1981). Fluidity is rooted in the need to constantly reassess the potential contributions of any given individual or group toward helping another individual or group obtains identified resources. Coalitions are formed and negotiations are conducted on the basis of mutual dependency and mutual beneficence. Hence, coalitions are a temporary exchange of dependency for beneficence (Bacharach & Lawler, 1980; Baldridge, 1977; Birnbaum, 1988; and Pfeffer, 1981).

For the purpose of further understanding, a return to Downey College might be helpful. At Downey College there exists a College of Education and Psychology and within the college exist four departments: Education, Psychology, Educational Administration, and Sports Administration. The Education Department is responsible for seventy percent of the college's credit hour production. The other three departments equally share the remaining thirty percent. The dean of the college, pressured by the administration, decides to implement a performance-based budgeting. At the heart of the performance-based approach is recruitment, retention, and graduation of students.

The Education Department quickly embraces the approach, and the chairperson immediately exerts influence to link performance with the number of students recruited, retained, and graduated. The chair of the Psychology Department learns of the Education Department's plan and tries to exert his influence by advocating a plan that links performance to the percentage of growth. The dean dismisses the percentage-based approach by noting the university is interested in overall growth in the number of students, not percentages. In response, the Psychology Department chair visits with the other two department chairs to explain the dean's response to his percentage-based proposal and to explain how the number-based proposal places their small departments at a disadvantage. From the meeting, the chairs of the small departments agree to endorse the percentage-based proposal and to meet with the dean, which leads to a subsequent meeting of the dean and all four department chairs. In the meeting, the dean proposes a formula-based approach that rewards both percentage and numerical growth. The chair of the large department continues to endorse the number-based approach and openly opposes the percentage- and formula-based approaches. After much discussion and comprise, a revised formula-based proposal is endorsed by all departments and adopted by the college.

In this fictional vignette, the College of Education and Psychology consisted of four diverse departments. Each of the departments contained faculty and staff with diverse experiences, knowledge, and perspectives. Yet within each department was a common need to secure resources based upon a proposed performance-based funding system. In essence, each department represented a coalition formed around a resource allocation need. The strongest coalition (i.e., the coalition with the most power and

influence) was the largest department. However, by forming a coalition of small departments, the smaller departments were able to increase power and to influence the outcome of the proposed policy.

 To summarize, individuals and groups engage in political activity as a means to acquire, develop, and exert power. Power is necessary to influence policy discussions, resource allocations, and the resolution of conflict within organizations. Since no single individual or group has sufficient power to influence such decisions and to protect their self-interest, individuals and groups amass power by forming coalitions with other individuals and groups who share common needs and interests. In essence, a political organization can be viewed as consisting of many sub-coalitions.

In light of the previous paragraphs that provide a general overview of the political model, it is now more appropriate to return to a discussion about assumptions tied to the bureaucratic and collegial models. As a reminder, bureaucratic and collegial models share three underlying assumptions: (1) the primary purpose of an organization is to accomplish established goals; (2) those with formal authority within organizations are responsible for establishing goals; and (3) rational processes and formal rules provide the basis of decisions, interactions, and behaviors (Pfeffer, 1981; Shafritz & Ott, 1996). Pfeffer (1981) characterized the assumptions tied to these models as "naïve, unrealistic, and therefore of minimal practical value" (p. 352). In light of Pfeffer's comments, the following paragraphs will examine each assumption within the context of political theory.

First, the primary purpose of bureaucratic and collegial organizations is the accomplishment of goals. However, the literature characterizes organizational goals

within the political model as multiple, confusing, conflicting, transitory, and self-absorbent (Baldridge et al., 1977; Birnbaum, 1988; Bolman & Deal, 1997; Michealsen, 1981; Mintzberg, 1983; Pfeffer, 1981; Weatherly & Lipsky; 1977). These characteristics result from political processes in which coalitions bargain, negotiate, and jockey to influence the process as a means of self-preservation (Baldridge et al., 1977; Bolman & Deal, 1997; Michealsen, 1981; Mintzberg, 1983; Pfeffer, 1981; Weatherly & Lipsky, 1997). In essence, the primary purpose of political organizations is policy formation which leads to the establishment of goals, rather than the pursuit of actual goals (Baldridge et al., 1977; Birnbaum, 1988; Bolman & Deal, 1997). Basically, the process of goal setting supersedes the pursuit of actual goals. A more detailed discussion of this goal setting process is discussed later in this section.

Second, goals within the political model are not established by those in formal authority. Those with formal authority do not necessarily have the prerequisite power to summarily establish organizational goals (Baldridge et al, 1977; Birnbaum, 1988, Bolman & Deal, 1997; Pfeffer, 1981). Power within political theory is more closely linked to individuals than to organizational structures, and correspondingly, power is often more dispersed than centralized (Birnbaum, 1988; Bolman & Deal, 1997; Brown, 1986; Kipnis, 1974; Mintzberg, 1983; Pfeffer, 1981; Scheff, 1970). Absent of power linked to structural hierarchy, goals emerge from dynamic and fluid processes that involve many individuals and groups.

Finally, rational processes and formal rules are not the primary sources that govern decisions, interactions, and behaviors within the political model. Pfeffer (1981) observed that rational processes "focus attention on the development of technologies to

more effectively achieve a goal or set goals such as profit or efficiency" (p. 363). In effect, rational processes seek to improve efficiency and effectiveness through the standardization of the production function. Legitimacy of rules that govern organizational behavior also emerges from these rational processes (Baldridge et al., 1977; Pfeffer, 1981). Early political theorists recognized that rational processes did not accurately accommodate the reality in which many organizations function: conflicting goals, unclear technologies, divergent beliefs, dispersed power, and self-interest of individuals (Baldridge, et al., 1977; Cyert & March, 1963; March, 1966; Pfeffer, 1981). Instead these theorists proposed a model in which decisions, interactions, and beliefs emerge from dynamic political processes. The political decision making process is discussed in greater detail later in this chapter.

To summarize, the political model diverges from the assumptions shared by the bureaucratic and collegial models. At the heart of the political model is the political process which gives rise to organizational goals, decisions, interactions, and behaviors. At the heart of the political process are individuals who seek power necessary to influence decisions, to acquire resources, and to protect their self-interest.

The political model and process raise several concerns relevant to understanding the adoption of management innovations in higher education. First, the political process appears to be inefficient in that the political processes consume significant time, energy, and resources while yielding very little in return. The process is extremely fluid – almost a come-and-go process – where individuals choose to become involved based on the perceived importance placed on a given issue. Fluidity requires a significant expenditure of organizational resources and individual energy, which ultimately

contributes to low levels of participation and indifference (Baldridge et al., 1971; Birnbaum, 1988). Second, the political process potentially contributes to fragmentation (Birnbaum, 1988). Competition over resources and reluctance to share existing resources contributes to fragmentation (Birnbaum, 1988). Fragmentation is also linked to a negotiation process that requires individuals and groups to compromise continually. Even well intended compromise leads to political winners and losers, which over time means that the politically strong get stronger and the weak get weaker. Third, inefficiencies and fragmentation contribute to low levels of accountability, in the political system determining who is responsible for what is extremely difficult. Finally, the political model fails to recognize the potential role of rational decision making and organizational structure (Baldridge et al., 1977). It is highly unlikely that all organizational issues can be most effectively addressed via the political process. In summary, the political model appears to contribute to fragmentation of the organization, inefficiencies and lack of accountability, and fails to recognize the role of rational processes and organizational structure.

However, the political model does seem to have several advantages that may be of relevance to this study. First, the political model accommodates the three characteristics that distinguish higher education organizations from business organizations: dispersed power; ambiguity tied to the production function; and loosely coupled subsystems. Second, the three disadvantages (fragmentation, inefficiencies, and lack of accountability) appear to support a stable system. As noted by Birnbaum (1988), "No one knows the totality of what is happening, and their activities often resemble random movements that cancel each other out and provide stability" (p. 139). Finally,

the political model supports important symbolic elements, confirms valued traditions, and reaffirms historical myths (Edelman, 1967; Birnbaum, 1988).

To summarize, this section of Chapter II has provided an initial overview of political theory. This overview highlighted the major differences between political, bureaucratic, and collegial models. In addition, the section operationally defined politics, examined issues tied to political activity within organizations, and provided additional insights into the function of coalitions within the political model. Finally, the section ended by drawing attention to the potential advantages and disadvantages of the political model as related to the adoption of management innovations. The next section will move into a more detailed discussion concerning the underlying assumptions of the political model and will be followed by a section that examines how the political model accommodates the three organizational characteristics of higher education.

*Assumptions of political theory and the political model.* Political theory is built on a set of core assumptions that primarily focus on the transitory jockeying for power necessary for individuals and groups to influence policy decisions necessary to address their needs and to protect their self-interest. In general the literature identifies the following core assumptions:

1. Organizations are viewed as super-coalitions that contain many sub-coalitions (Baldridge, 1977; Bolman & Deal, 1997; Cyert & March, 1963; March, 1962; Mintzberg, 1983; Pfeffer, 1981).

2. Sub-coalitions are made up of individuals and groups with varied interests, values, preferences, perspectives, experiences, and perceptions of reality

(Bacharach & Lawler, 1980; Birnbaum, 1988; Bolman & Deal, 1997; Hickson et al., 1976; Mintzberg, 1983; Pfeffer, 1981).

3. Policy formation is the single most important function of the organization. Policy decisions are the conduit through which resources are allocated within organizations, and therefore become the primary source of conflict within organizations. Policy decisions also become the primary method through which organizational goals, priorities, and strategies for achieving those goals are established (Baldridge et al., 1977; Birnbaum, 1988; Bolman & Deal, 1997).

4. As conflict increases, political activity increases because individuals and groups seek to acquire and exert power necessary to influence policy decisions in ways that reflect their interests, values, preferences, perspectives, experiences, and perceptions of reality. Therefore, self-interest is seen as the primary motivation for individuals to become involved in the political process of policy formation (Baldridge et al., 1977; Bolman & Deal, 1997; Michealsen, 1981; Mintzberg, 1983; Pfeffer, 1981; Weatherly & Lipsky; 1977).

5. Political activity is also linked to availability of resources and homogeneity of individuals within the organization. Political activity is inversely related to the availability of resources: as resources increase conflict decreases. Political activity is also inversely related to homogeneity of individuals within organizations. When individuals are more homogeneous, political activity decreases (Baldridge et al., 1977; Bolman & Deal, 1997).

6. Individuals and coalitions with the greatest power, who choose to engage in political activity, receive the greatest reward. Conversely, individuals and coalitions with the least amount of power or individuals and coalitions who choose not to engage in political activity receive the least award (March, 1966; Pfeffer, 1981).

Primarily, political theory assumes that organizations can best be examined and understood as political systems – that there exist within organizations the same characteristics as found in local, state, and federal political systems (Baldridge, 1977). In essence, organizations are seen as containing the same dynamics, conflicts, motivations, and structures found in political systems. Political theory assumes that policy formation is the single most important activity of the organization. Policy formation is seen as the primary means of resource allocation, which establishes organizational goals and establishes strategies for achieving those goals. Therefore, policy formation is the greatest source of conflict with an organization. Political theory also assumes that self-interest is the primary motivation for individuals within organizations, and individuals choose to become involved in policy formation only as a means to protect that interest. Finally, politically theory assumes that the acquisition and assertion of power is the most effective way for individuals to influence the policy formation process.

Based on these assumptions, how does political theory account for decentralized power, ambiguity tied to the production function, and loose coupling of organizational subsystems within higher education organizations? Additionally, how do these assumptions impact the adoption of management innovations in higher education? As

will be discussed in the next few paragraphs, the literature seems to indicate that

political theory is built on assumptions that accommodate the three characteristics that

distinguish higher education from business organizations.

*Power, ambiguity, and coupling within political theory.* First, power is the

primary organizational force within the political model (Birnbaum, 1988; Bolman &

Deal, 1997; Pfeffer, 1981). As noted by Bolman and Deal (1997), "Even though

different groups in an organization have conflicting preferences, they also have shared

interests in avoiding continuously destructive conflict. So, they agree on ways to divide

power and resources, and those settlements are reflected in the design of the

organization" (p. 199). Essentially, organizational structure reflects the negotiation of

power and resources through historical political activity. Therefore, power within

political theory has two primary characteristics that are of importance to this study: (1)

power is more dispersed than centralized; and (2) power is more appropriately viewed

as an individual phenomenon than as a structural phenomenon.

Power within the political model tends to be more dispersed than centralized

(Birnbaum, 1988; Mintzberg, 1983, Pfeffer, 1981). First, power is no longer solely

linked to organizational structure and the accompanying legitimate authority provided

to managers (Bolman & Deal, 1997). Instead, power tied to position is viewed as "only

one of many available sources of organizational power, and power is aimed in all

directions – not just down through the hierarchy" (Pfeffer, 1981, p. 353). In fact,

Bolman & Deal (1997) noted that the over usage of power linked to an individual's

position lessons an individual's ability to maneuver politically and even generates

resistance. Second, power is linked to multiple sources (Birnbaum, 1988; Mintzberg,

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1983, Pfeffer, 1981). As noted by Birnbaum (1988), "Power is diffused rather than concentrated and many individuals and groups have power of different kinds and in different situations" (p. 133). In part, Birnbaum links diffused power to three factors: individuals, coalitions, and situations. With regard to individuals, diffused power is contributable to three factors: (1) power requires the expenditure of political energy; (2) political energy within a given individual is finite; and (3) organization structures are built on large bases with smaller upper tiers (Mintzberg, 1983; Scheff, 1970). In essence, power has the potential to be more dispersed because the bottom structure of most organizations has a larger number of individuals with specialized skills or knowledge who collectively have a larger pool of political energy (Mintzberg, 1983; Scheff, 1970). Third, the role of coalitions in the political process further disperses power (Birnbaum, 1988). Coalitions  provide an increased source of energy for political activity. While it is possible for lower-level participants to form coalitions that can potentially become more influential than their higher-ranking superiors (Birnbaum, 1988); it is also possible for higher-ranking superiors to form coalitions with other superiors or lower-level participants to amass the power and political energy required to influence successfully a given issue. Fourth, dispersed power is dynamically linked to the myriad of issues and conflicts that arise within an organization (Birnbaum, 1988). The rise and fall of power follows the ebb and flow of conflict and issues within the organization. While today's conflict with the state legislature might require expertise (power) of the president, tomorrow's conflict with an external accrediting body very well might require the expertise (power) of the academic department being accredited. Hence, power in the political model is more decentralized than centralized due to the

transitory nature of conflicts that require a variety of resources, knowledge, and skills in order to be resolved. Finally, power is more dispersed because of the arena affect. As noted by Mintzberg, 1983, individuals "pick and choose their issues concentrating their effort on the ones more important to them, and of course, those they think they can win" (p. 414). This picking and choosing translates to individuals defining arenas in which they choose to engage in political skirmishes while deferring other arenas and political skirmishes to others. What emerges within an organization are various political arenas that become the fields on which issues and conflicts are resolved (Mazzoni, 1991). Each arena will have different rules, have different players, and focus on different issues (Baldridge et al., 1977; Bolman & Deal, 1997; Mazzoni, 1991). The emergence of these arenas further contributes to the diffusion of power. As highlighted in this paragraph, power within the political model is more dispersed than centralized due to five factors: power is more associated with individuals than with organizational structure; power emanates from multiple sources; coalitions provide an increased supply of political energy; and power linked to the myriad of issues that surface within organizations.

A second characteristic of power within the political model is the linkage of power to individuals rather than to organizational structures (Bolman & Deal, 1997; Brown, 1986; Kipnis, 1974; Mintzberg, 1983; Pfeffer, 1981). Power linked to the individual is contingent upon three factors: (1) individual sources of power; (2) individual willingness to become involved in the political process; and (3) individual political skill. First, the literature identifies several sources of power: control of resources; control of technical skills; control of a specific body of knowledge; control of agendas; control of meaning and symbols; and/or control or access to individuals with

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control of the first five (Bolman & Deal, 1997; Mintzberg, 1983). The greater the need

within the organization for a limited resource, specialized skill or specific knowledge,

the greater the potential power of individuals (Pfeffer, 1981). Hence, an individual's

power is contingent upon the scarcity or importance of a given resource, skill, or body

of knowledge (Bolman & Deal, 1997; Mintzberg, 1983; Pfeffer, 1981). Second, this

type of power is contingent upon the willingness of an individual to exert political

influence. Individuals with power (i.e., control of a valued resource, skill or knowledge)

must first choose when and how to use that power (Mintzberg, 1983). In essence,

"politics involves those activities or behaviors through which power is developed and

pursued in organizational settings. Power is a property of the system at rest: politics is

the study of power in action" (Pfeffer, 1981, p. 362). Therefore, political activity within

organizations at any given time is reflective of individuals with power who have chosen

to exert political energy as a means to influence a given policy discussion or to resolve

conflict (Birnbaum, 1988; Mintzberg, 1983). Those individuals who choose to get

involved have greater potential to influence the framing of a given issue, the decision

making process, and the ultimate decision or compromise that is reached (Brown, 1986;

Bolman & Deal; 1997; Pfeffer, 1981). In essence, political power is the exertion of

power by individuals as a means to shape the organizational reality in which they work

(Bolman & Deal, 1997). Finally, power is contingent upon the political skill of an

individual. Political skill determines the effectiveness to which individuals leverage

their power to influence decisions and policies (Mintzberg, 1983). Political skill is

influenced by such factors as charm, physical strength, attractiveness, and charisma

(Kipnis, 1974; Mintzberg, 1983). To summarize, an individual's power within the

political model is contingent upon three factors: the basis of the individual's power; the

degree to which that individual is willing to expend energy necessary to capitalize on

that power; and the political skill of the individual.

To understand the implication of power linked to an individual's personal

characteristics on the adoption of management innovations within the political

framework requires understanding why and when individuals choose to get involved in

the political process (Pfeffer, 1981). First, Mintzberg (1983) noted that individuals

when confronted with change exercise three options: (1) loyalty – stay and contribute as

expected; (2) exit – leave the system; and (3) voice – stay and try to change the system.

Mintzberg went on to define voice as "any attempt at all to change, rather than to escape

from an objectionable state of affairs" (p. 413). In light of Mintzberg's observation, two

additional questions emerge: when is a situation objectionable and when do individuals

and groups exercise the voice option? Baldridge et al., (1977) hinted that objectionable

situations might include limited access to resources, attacks by outside pressure groups

and attempts by internal groups to assume power. With regard to the second question,

the literature indicates that individuals identify arenas in which they choose to become

involved (Bolman & Deal, 1997; Mazzoni, 1991; Patchen, 1974). As noted by Bolman

& Deal (1997), "Arenas help determine what game will be played, who will be on the

field and what interest will be pursued" (p. 198). Essentially, voice would be exercised

when issues are objectionable and when these issues are within a prescribed political

arena. Next, individuals tend to engage in the political process when issues are of

importance and when the likelihood of their involvement will yield positive results

(Baldridge et al., 1977; Michealsen, 1981; Patchen, 1974; Weatherly & Lipsky, 1977).

In short, individuals tend to become involved in the political process when an issue is objectionable, is within a prescribed political arena, is of personal interest and when success is likely. Therefore, it appears that the political process may only influence the adoption or rejection of management innovations when these four criteria are met. To broaden our understanding of the potential impact of political processes on the adoption of management innovations, it becomes important to examine power using Yukl's (2002) taxonomy.

As previously established, Yukl (2002) identified five types of power tied to position (legitimate, reward, coercive, information, and ecological) and two types of power tied to individuals (referent and expert). Based on the previous two paragraphs, an examination of referent and expert power within the context of political theory is warranted. As the reader might recall, referent power is contingent upon the desire of a follower to identify with the leader (i.e., the greater the desire of the follower to identify with the leader the greater the leader's power to influence the follower's behavior, attitudes, and/or beliefs) (French & Raven, 1959). In part, political power is linked to the capacity of an individual to build political coalitions with other individuals or groups. The process of coalition building involves social interaction (Birnbaum, 1988; Walton & McCredie, 1965). Indeed, coalition building has been identified as a key difference between more and less successful managers (Kotter, 1982; Bolman & Deal 1997). In this social interaction, individuals "try to assess their own power, the power of potential coalition partners, the degree to which the interest of the parties coincide, and the potential costs and benefits" (Birnbaum, 1988, p. 142). The success of these social interactions is linked to how individuals perceive their self-interest will be promoted

(i.e., the greater the likelihood of self-promotion the greater the likelihood of forming a coalition). Effectively, an individual's power increases when other parties identify with the individual, thus increasing the importance of referent power. Similarly, expert power linked to political knowledge and skill is of great value. Specifically, the literature indicates political power increases with increased knowledge of given issues; increased knowledge of external and internal resources; increased awareness of others' interest and needs; and increased political skill (Hickson, et al., 1971; Kipnis, 1974; Mintzberg, 1983; Patchen, 1974). To summarize, a great amount of power within the political model is contingent upon a given issue and the degree to which others can identify with an individual in light of that issue as well as the individual's level of knowledge and skills tied to the specific issue. Most certainly, referent and expert power are important in political theory.

However, does power linked to position play a role in political theory? Power associated with an individual's position continues to play an important role even in light of power that is more decentralized and pluralistic and even though structural power is of less impact. For instance, power within the political model has been linked to control of resources, skills, knowledge, agendas, meaning, symbols, and individuals (Bolman & Deal, 1997; Mintzberg, 1983). Access and control to several of these (resources, knowledge, agendas, and individuals) are linked to position. Therefore, it appears that reward power (access to resources), information power (access to information), and ecological power (control of organizational structure) are of elevated importance in political theory. Of less importance are legitimate power (authority) and coercive power (sanctions or punishments). To summarize, the literature appears to indicate that power

within political theory is more dispersed than centralized, and thus is consistent with one of the distinguishing characteristics of higher education. Also, the literature indicates that three types of power linked to the position category (reward, information, and ecological) and two types of power linked to an individual's characteristics (referent and expert) are of increased importance and perhaps would provide greater understanding tied to the adoption of management innovations in higher education.

Second, ambiguity tied to the production function is a characteristic supported by the political model (Baldridge et al., 1977; Birnbaum, 1988; Bolman & Deal, 1997; Michealsen, 1981; Mintzberg, 1983; Pfeffer, 1981; Weatherly & Lipsky; 1977). Ambiguity is most evident in the identification of organizational goals. Goal setting within the political model is transitory at best. Goals of the organization are seldom set by those with formal authority, but rather are negotiated between individuals and groups of individuals (coalitions). Through the political process, goals emerge from iterative interactions of bargaining, negotiating, and jockeying (Bolman & Deal, 1997; Pfeffer, 1981). The political process involves coalitions whose members bring diverse perspectives, needs, and demands to the process (Bolman & Deal, 1997; Pfeffer, 1978). The underlying motive of participation in the political process is self-interest (Baldridge, 1977; Bolman & Deal, 1997; Michealsen, 1981; Mintzberg, 1983; Pfeffer, 1981; Weatherly & Lipsky; 1977). What evolves from this political process of self-preservation is "a confusing multiplicity of goals, many in conflict" (Bolman & Deal, 1997, p. 167).  Goals are also transitory due to shifting power. As coalitions change and as power shifts from one coalition to another, goals and priorities change and often contribute to conflicting goals (Pfeffer, 1981). Given that conflict is a necessity in

political systems, conflicting goals and technologies are both products of and fuel for the political model (Pfeffer, 1981).

Standardization of other production functions and associated measures of effectiveness and efficiency appear to be linked primarily to the perspectives of those involved in the political process. As noted by Pfeffer (1978),

Since organizations are coalitions, and the different participants have varying interests and preferences, the critical questions becomes not how organizations should be designed to maximize effectiveness, but rather, whose preference and interests are to be served by the organization. . . . What is effective for students may be ineffective for administrators. What is effectiveness as defined by consumers may be ineffectiveness as defined by stockholders. The assessment of organizations is dependent upon one's preferences and one's perspective. (In Bolman & Deal, 1997, pp. 198-199)

According to Pfeffer (1978), determinants of organizational efficiency and effectiveness are linked to individual preferences and perspectives, and these preferences and perspectives influence the standardization of such determinants through political processes. Baldridge (1977) noted that individuals and coalitions are often more focused on political activity involved in goal setting than any associated process concerned with determining organizational efficiency and effectiveness to reach those goals. Organizational efficiency and effectiveness discussions within the political system are also limited due to unclear technologies (Birnbaum, 1988). Due to the complexity and fluidity of the political process, contingency of issues, limited resources, conflicting technologies, and diversity of perspectives, it is possible to infer that any

standardization of the production function is minimal at best and nonexistent at worse. In essence, it appears that political theory does not require the standardization of the production function, and therefore provides a potential framework from which to understand how ambiguity tied to the production function impacts the adoption of management innovations in higher education.

Third, the literature indicates political theory allows for subsystems that are more loosely coupled than tightly coupled. As might be concluded from the previous paragraphs, the political model is perhaps the most loosely coupled of the three models discussed thus far. Birnbaum (1988) referred to the political model as a "shifting kaleidoscope of interest groups and coalitions" (p. 132). As interactions occur in the form of negotiations and compromise, stated goals, outcomes, and purposes are constantly changing. In fact, outcomes are more likely to be by-products of the process then they are to be intended outcomes (Steinbruner, 1974). As noted by Birnbaum (1986),

> The parties to political process have different preferences. As they interact through negotiations, compromises, and coalition formation, their original objectives change. Since the groups with which type interact are also modifying their positions, the social environment in which they are functioning changes more quickly than they can respond to. It is impossible to predict in advance which of many alternative outcomes will in fact take place. The actual outcome is likely to be the resultant by-product of many forces and may be neither intended nor preferred by any of the participants. (p. 144)

Birnbaum notes that it is difficult to predict the outcome of a given issue once that issue is introduced to the political system and its loosely coupled subsystems. For the purpose of this study, one could conclude that the same would hold true for the introduction of a management innovation within a political system; it would be difficult to predict the adoption or rejection of a management innovation introduced into a political system and any resulting impact on that system.

Superficially, it appears that an organization from a political perspective is a large super-coalition that consists of many dynamic, loosely coupled sub-coalitions. However, is such a perspective always evident? Do tightly coupled subsystems exist within the political framework? Indeed, political systems by their very nature could not exist absent of tightly coupled sub-coalitions. These sub-coalitions are tightly coupled, interdependent subsystems (Birnbaum, 1988; Bolman & Deal, 1997). Absent of interdependency, there can be no political activity. Absent of tightly coupled subsystems with common needs coalescing around a common issue, there can be no political activity. Therefore, tight coupling appears to be more closely linked to organizational issues and common needs than to organizational structure.

It is also conceivable that this interdependency – tight coupling – can increase over time due to continuing common needs, reoccurring issues, and enduring differences (Bolman & Deal, 1997). In addition, a number of political theorists have supported the possibility of tight coupling tied to organization structure (Bolman & Deal, 1997; Brown, 1983; Pfeffer, 1981). Baldridge (1977) noted that early political models ignored the importance of tightly-coupled bureaucratic processes, especially those processes associated with day-to-day operations. In addition, the literature also

reveals that political systems are described along a continuum of loosely coupled (underbounded) subsystems to tightly coupled (overbounded) subsystems (Alderfer, 1979; Bolman & Deal, 1997; Brown, 1983). Power within overbounded systems is centralized and processes are tightly regulated. Conversely, power within underbounded systems is decentralized and processes loosely regulated. Pfeffer (1981) noted that power relations within organizations evolve to become permanent features. Because of specialization and division of labor, subsystems responsible for continually executing mission critical functions develop tightly coupled relations with other subsystems. These tightly-coupled relations often become permanent features of the political organization. Ultimately these subsystems become tightly coupled and linked to organizational structure (Pfeffer, 1981).

To summarize, the literature indicates that political theory generally supports the three characteristics that distinguish higher education organizations from businesses. Specifically, political theory recognizes that (1) power is more dispersed than centralized; (2) ambiguity is tied to the projection function; and (3) subsystems are viewed as both loosely coupled and tightly coupled.

Up to this point, three organizational models have been highlighted: the bureaucratic model, the collegial model, and the political model. Each model provides a single framework, or lens, through which individuals can interpret events and understand relationships within an organization (Birnbaum, 1988; Bolman & Deal, 1997). While each model might in and of itself be correct, does a single-lens model accurately capture the complex nature of an organization? Furthermore, what if the models are rooted in paradigms that might not be entirely appropriate for higher

education? It appears these models are unlikely to provide a guiding framework because of two overarching issues.

First, these models provide a single perspective for analysis in order to increase organizational effectiveness and efficiency. The bureaucratic and collegial models reduce purpose and function to align with organizational structures so as to facilitate increased effectiveness and efficiency through rational decision making and deterministic processes. These classical models assume structure and function occur within bounded, closed systems with little interaction or feedback from their external environment (Fleener, 2002; Katz & Kahn, 1966; Scott, 1961; Shafritz & Ott, 1996; Thompson, 1967; Wheatley, 1999). Similarly, the political model reduces purpose and function to align with the self-interest of individuals so as to facilitate increased effectiveness and efficiency through political decision making and power-based processes. The theoretical underpinning of all three models continues to rely heavily on simple stimulus-response analysis within bounded systems and subsystems. These deterministic perspectives limit the understanding of complex organizations like colleges and universities, which have come to be viewed as more dynamic, normative systems (Wheatley, 1999). Dynamic systems require organizational models that provide increased understanding and analysis tied to unpredictability, self-creation, and autonomy (Birnbaum, 1988; Fleener, 2002). Even as early as 1935, individuals like Lawrence Henderson, were advocating complex methods of analyses that include "simultaneous variations of mutually dependent variables" (p. 13) (Kast & Rosenzweig, 1972; Katz & Kahn, 1962; Scott, 1961; Thompson, 1967).

Second, all three models are single-lens models that may limit analysis and understanding tied to complex organizations and complex issues like the adoption of management innovations. Basically, while each model might in and of itself provide a good snapshot of an organization, no single model accurately captures the complex nature of higher education organizations. The literature underscores the importance of using organizational models that provide multiple-lenses from which to analyze and to broaden our understanding of organizational complexity (Birnbaum, 1988; Bolman & Deal, 1997; Pfeffer, 1981). In effect, complex organizations require a complex paradigm form which to understand organizational functions and decision-making processes. Such models emerged in the twentieth century in tandem with the introduction of systems theory. Therefore, the purpose of this section is five-fold: (1) discuss the emergence of the systems theory; (2) identify the major characteristics of systems theory; (3) discuss Richard Birnbaum's cybernetic model; (4) discuss power, ambiguity, and coupling within the cybernetical model; and (5) discuss implications of systems theory and the cybernetical model on the adoption of management innovations.

*The Emergency of Systems Theory*

Systems theory emerged in the early twentieth century as a parallel, yet alternative, discussion to other organizational theories (Doll, 1993; Fleener, 2002). Two early proponents of systems theory included Henri Bergson and Ludwig von Bertalanffy. Henri Bergson was born in 1859, the same year Darwin's *Origin of Species* was published. Bergson, a philosopher, proposed a natural-systems perspective to examine psychosocial relationships within biological and naturalistic processes (Fleener, 2002). Bergson wondered if organic, or natural, systems as opposed to

mechanical systems might provide an alternative perspective from which to analyze and understand phenomena. Bergson (1907/1911) challenged mechanistic pursuits of understanding by proposing a creative and interactive world that was much greater than the sum of its parts (Doll, 1993; Fleener, 2002). As noted by Bergson (1907/1911)

The only question is whether the natural systems which we call living beings must be assimilated to the artificial systems that science cuts out within inert matter, or whether they must not rather be compared to the natural system which is the whole of the universe. That life is a kind of mechanism I cordially agree. But is it the mechanism of the parts artificially isolated within the whole of the universe or is it the mechanism of the real whole? The real whole might well be, we conceive, an indivisible continuity. The systems we cut out within it would, properly speaking, not then be parts at all; they would be partial views of the whole. And, with these partial view put end to end, you will not make even a beginning of the reconstruction of the whole, any more than, by multiplying photographs of an object in a thousand different aspects, you will reproduce the object itself. (p. 31)

In other words, Bergson (1907/1911) contended that the essence of a natural system is always greater than the sum of its isolated parts, thereby inferring that phenomena are better understood through holistic, or systems, perspectives than through the study of the systems' isolated parts. Bergson further provided an illustration to support the importance of this perspective.

A very small element of a curve is very near being a straight line. And the smaller it is, the nearer. In the limit, may be termed a part of the curve or a part

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of a straight line, as you please, for in each of its points a curve coincides with its tangent. . . . In reality, life is no more made of . . . elements than a curve is composed of straight line. (p. 31)

Beyond the holistic understanding tied to systems, Bergson (1907/1911) appears to provide the genesis for at least one other early tenant of systems theory: phenomena occur within creative, rather than deterministic, systems. In general, Bergson proposed a systems vision where phenomena may creatively interact with stimuli from the environment, which is considerably different than mechanical perspective. The former represents creative interaction with the environment while the latter is more deterministic. Basically, Bergson linked survival to creative action rather than deterministic reaction. In terms of application to this study, Bergson's approach is considerably different than the perspective promoted by bureaucratic, collegial, and political models and seems to imply that the primary goal of organizations is survival rather than maximization of the production function.

Nearly four decades after Bergson's initial work, Ludwig von Bertalanffy also expressed his concerns with the reductionists' perspective. As Bertalanffy (1956) noted, this fragmented perspective "led to a breakdown of science as an integrated realm. The physicist, the biologist, the psychologist, and the social scientist are, so to speak, encapsulated in a private universe, and it is difficult to get word from one cocoon to the other" (p. 1). In essence, Bertalanffy feared that isolation prevented sharing of research across disciplines and thus promoted an inaccurate context for their findings.

However, Bertalanffy was most troubled by the lack of interaction required to explore fully the doom imposed on closed systems when applying Newton's second law

of thermodynamics. The second law of thermodynamics states that entropy continually increases toward a maximum resulting in a state of equilibrium (Katz & Kahn, 1966). Two primary principles govern this law: entropy and equilibrium. Entropy is "an inverse measure of a system's capacity to change" (Wheatley, 1999, p. 76). Equilibrium is "A condition in which all acting influencers are canceled by others resulting in a stable, balanced, or unchanging system" (American Heritage Dictionary, p. 461). Based on these definitions and Newton's second law, systems continually move toward an unchangeable state. In essence, "equilibrium is the end state in the evolution of closed systems, the point at which the system has exhausted all of it capacity to change, done its work, and dissipated its productive capacity into useless capacity" (Wheatley, 1999, p. 76). Bertalanffy realized that the second law painted an apocalyptic picture of organizations and the world; however, he also realized that the existing research paths with their divergent and specialized approaches were a barrier to resolving this issue.

In the 1950s, Bertalanffy's work contributed to the emergence of a new discipline called General Systems Theory. In 1954 the Society for General Systems Research was formed, and the basis of this emerging discipline was outlined in 1956 when the first volume of the *General Systems Yearbook* was published. Through an article in this inaugural publication, Bertalanffy proposed a holistic approach toward understanding the concepts of "organization, wholeness, defectiveness, teleology, control, self-regulation, [and] differentiation . . . in the biological, behavioral, and social sciences" (p. 2). General Systems Theory, as proposed by Bertalanffy, called for the examination of phenomena at the systems, or macro, level (Kast & Rosenzweig, 1972).

Bertalanffy's proposal was a dramatic shift from the micro level and mechanical approaches that had been in place for nearly 200 years (Kast & Rosenzweig, 1972).

Contributions from researchers in biology, chemistry, physics, and mathematics quickly advanced General Systems Theory, and by the late 1960s it became a philosophy of inquiry that transcended many disciplines (Fleener, 2002). As noted by Bertalanffy (1968),

> Physics is still the paragon of science, the basis of our idea of society and our image of man. In the meanwhile, however, new sciences have arisen – the life, behavioral and social sciences. They demand their place in a modern world view. . . . Now we are looking for another basic outlook on the world – *the world as organization*. Such a conception – if it can be substantiated – would indeed change the basic categories upon which scientific thought rests, and profoundly influence, practical attitudes. (p. 187)

By 1966 and 1967, the systems thinking surfaced as the "dominate organizational theory" (Shafritz & Ott, 1996, p. 254). William Scott (1961) was among the first theorists to hint at the applicability of systems thinking to organizational theory. As noted by Scott,

> The distinctive qualities of modern organization theory are its conceptual analytical base, its reliance on empirical research data, and above all, it integrating nature. These qualities are framed in a philosophy which accepts the premise that the only meaningful way to study organization is to study it as a system. (p. 264)

Two additional works in the 1960s solidified the linkage of the general systems theory to organizational theory. *The Social Psychology of Organizations* written by Daniel Katz and Robert Kahn (1966) provided an initial bridge between systems theory and organization. Katz and Kahn proposed a theoretical model that merged the major tenants of structural, behavioral, and systems perspectives. These seemingly conflicting perspectives were balanced through what Katz and Kahn labeled an open systems approach. Katz and Kahn asserted systems theory focuses on interdependence of relationships and structures within and external to the organization.

Katz and Kahn identified at least two major shortcomings tied to closed systems thinking. First, Katz and Kahn noted that closed systems falsely assume organizations are "sufficiently independent to allow most of its problems to be analyzed with reference to its internal structure and without reference to its external environment" (p. 284). Katz and Kahn noted such approaches limit analyses that attempt to understand organizational dynamics and change because they ignore, or at best minimize, the "mutual permeation of an organization and its environment" (p. 284). Second, Katz and Kahn noted organizational structures within closed systems end in entropic dissolution once their existing energy is expended. Basically, organizations as closed systems can only move toward disorganization or death as their existing energy is expended. However, Katz and Kahn noted structures within organizations tend to become more elaborate over time and do not appear consistent with the closed system perspective. Katz and Kahn proposed the open system perspective " . . . by importing more energy from its environment than it expends, [open systems] can store energy and . . . will seek to improve their survival position and to acquire in their reserves a comfortable margin

of operation" (p. 279). Basically, open systems import energy from the external environment to counteract entropy.

James D. Thompson's *Organizations in Action* (1967) was a second work that further solidified the transference of general systems theory to organizational theory. Thompson, like Katz and Kahn (1966), noted that efficiency approaches of rational organizational models like scientific management impose closed systems logic on organizations. As noted by Thompson,

> It seems that the rational-model approach uses a closed-system strategy. It also seems clear that the developers of the several schools using the rational model have been primarily students of performance or efficiency and only incidentally students of organizations. Having focus on control of the organization as a target, each employs a closed system of logic and conceptually closes the organization to coincide with that type of logic. The rational model of an organization results in everything being functional – making a positive, indeed an optimum, contribution to the organization. (p. 288)

Thompson (1967) basically noted organizational theories rooted in the rational models were closed system approaches that did not accurately account for the complexity of functions within organizations. Thompson argued that organizations were complex systems consisting of "more variables than we can comprehend" and that "some of the variables are subject to influences we cannot control or predict" (p. 289). Because of complexity and unpredictability, Thompson called for a new logic from which to view organizations, a systems logic.

Beyond many of the same systems applications made by Katz and Kahn (1966), Thompson (1967) noted three additional characteristics of open systems. First, Thompson established that survival of the organization, rather than efficiency, was the goal of organizations. Thompson noted that a complex organization "is a set of independent parts which together make up a whole because each contributes something from the whole, which in turn is interdependent with some larger environment. Survival of the system is taken to be the goal" (p. 289). If survival is the goal, rather than efficiency, the function of subsystems within systems theory may certainly be more loosely coupled than tightly coupled, which is Thompson's second contribution. Third, Thompson hinted at the possible coexistence of both closed- and open-systems characteristics in organizations. Thompson noted that even within complex organizations, technical functions might indeed retain closed-system functionality. Unfortunately, this characteristic appears to have been ignored by most organizational theorists as systems theory moved forward. However, this characteristic, as will be discussed later, is significant and perhaps explains further why management innovations continued to be adopted and subsequently rejected within higher education.

*Assumptions of systems theory.* Systems theory is built on a set of core assumptions established by early theorists. In 1972, Kast and Rosenzweig identified 12 key assumptions supported by general systems theory.

1. Organizations are viewed holistically. Systems are best studied in their totality. Organizations are more than the sum of their parts.

2. Organizational results may not necessarily be linked to initial conditions. Deterministic systems assume a direct cause and effect relationship between

initial conditions and final state. On the other hand, open systems may arrive at the same final state from "differing initial conditions and by a variety of paths" (Katz and Kahn, 1966). Equifinality is the term used to describe this multi-path process that leads to the same end result. If there does not exist a direct cause-effect relationship between initial conditions and final state, it would be difficult to predict the adoption or rejection of management innovations based on the existing state of an organization. And if equifinality exists, it may imply that regardless of the innovation that is introduced to a system, the system will arrive at the same final state.

3. Organizations are viewed along a closed-open system continuum. Organizations may be viewed along a continuum of relatively open to relatively closed. Open systems exchange information, energy, or material with their environment to counter entropy necessary for the organization to survive. Closed systems do not exchange energy with their environment; hence, closed systems are continuously moving toward a state of equilibrium that is characterized by disorganization or death.

4. Input-Transformation-Output modeling provides a process for understanding how energy is imported, transformed, and exported back into the organizational environment. Open systems import energy from the external environment to negate entropy. Open systems convert input into outputs via through-put, or transformational processes. Outputs are then exported back into the environment.

5. Systems are made up of subsystems. By definition a system includes interrelated subsystems. The connectedness of the subsystem to the system or to other subsystems occurs along the open-closed continuum. Parsons (1960) and Thompson (1967) noted the relative openness and closedness of a subsystem is linked to the subsystem's level of responsibility and control. Essentially, the more reliant the subsystem is upon energy, resources, or material from other subsystems, the more open the connectedness.

6. Open systems require feedback from the environment. Feedback provides the information necessary for the system to maintain its steady state. Since the amount of information available to a system is often greater than the capacity of the system to process that information, systems develop coding processes to select, simplify, and process information that is relevant to the system. Feedback may be positive – affirming the direction of the organization – or negative – indicating corrective action is required.

7. Organizations are bounded systems. Systems exist within boundaries that separate them from their environment. These boundaries are more permeable in systems that are more open than closed.

8. Open systems are characterized by negative entropy. Entropy is the amount of energy expended by systems trying to reach equilibrium. As previously noted, entropy within closed systems continuously increases until the system reaches a maximum state of equilibrium, disorder, and death. Entropy in closed systems can only be positive. From an open systems perspective, organizations import resources from the external environment to not only

stop entropy, but even to reverse the process. In other words, organizations

may import energy and generate negative entropy that results in the

transforming of resources and the organization.

9.  Open systems are characterized by dynamic equilibrium. Equilibrium is the

    end result of entropic process and equates to organizational death. Open

    systems by continually importuning materials, information and energy can

    maintain equilibrium. The steady state is not motionless but rather is

    characterized by the continuous flow of input and outputs, or basically, open

    systems exist in states of dynamic equilibrium.

10. Open systems move toward differentiation. Closed systems move

    entropically toward disorganization and death. Open systems move toward

    increased differentiation – elaboration of roles, increased specialization of

    function, and multiplication of processes. Organizations as open systems

    continually move toward a higher level.

11. Open systems seek multiple goals. While the primary goal of an organization

    may be organizational survival, multiple goals often exist due primarily to

    the differing values and objectives of individuals and subsystems within the

    organization.

12. There exists a hierarchy of systems. Within general system theory, there

    exists a hierarchical relationship between systems. Hence, there exist lower

    level subsystems and higher level suprasystems.

Essentially, systems theory assumes organizations may best be examined and

understood in light of research associated with general systems theory – organizations

are dynamic systems that interact with their environment in order to attain energy

necessary to avoid their entropic end. These assumptions appear to provide potential

benefit in understanding the adoption of management innovations in higher education.

First, the holistic perspective supported by systems theory appears to provide a

sustained departure from the reductionist perspectives advocated by bureaucratic,

collegial and political theories and their associated research approaches. Holistic views

require holistic approaches to understanding why leaders are motivated to adopt

management innovations from outside of higher education, and then, why the

management innovations are subsequently rejected.

Second, the closed-open continuum assumption of systems theory provides

potential insight into understanding why management innovations succeed in some

organizations and fail in others. Management innovations that focus on optimal

efficiency and effectiveness through increased control of the production function may

experience more success in organizations that are more closed than opened. Success of

the innovation may potentially be linked to the increased control of the production

function associated with a more closed system as well as the reduced requirement to

exchange energy with the closed system's external environment. The closed-open

continuum also applies to subsystems within organizations. Applying the same logic,

management innovations within organizations may be adopted at differing levels within

various subsystems of an organization. Differentiated adoption may be linked to the

open-closed continuum of subsystems. Closed subsystems (1) may have increased

control over their own production function; (2) may be more loosely coupled than

tightly coupled to other subsystems and to the larger suprasystem; and (3) may be less

specialized. Conversely, open subsystems (1) may have less control over their production function; (2) may be more tightly coupled to other subsystems ; and (3) may have functions that are more elaborate and specialized. Therefore, one might hypothesize that subsystems that are more opened than closed may reject management innovations at higher rates than subsystems that are more closed than open.

Finally, management innovations studied by Birnbaum (2001) were imported to higher education via the business sector. If systems import energy from the external environment to avoid entropy, it may mean management innovations imported to higher education from the business sector provide energy needed by the institution to avoid entropy – or at least provide energy for the administrative subsystem of the organization to avoid entropy. The innovation is then transformed by the institution as a failed innovation including many lessons learned. This exported innovation may then be imported by the business sector as energy for its next management innovation. The innovation may provide renewable energy for both higher education and the business sector as it is transformed and passed from one environment to the next, thus supporting the cyclical nature of management innovations as observed by Birnbaum.

To summarize, it appears systems theory may provide a potential framework to examine the cyclical adoption and rejection of management innovations in higher education and thus warrants further consideration as a potential theoretical framework for this study. Specifically, two additional aspects of systems theory needed to be examined: (1) a specific application of systems theory to higher education; and (2) how that application accounts for decentralized power, ambiguity tied to the production function and loose coupling of organizational subsystems and the impact of these

characteristics on the adoption of management innovations within higher education.

Therefore, the next section will focus on the specific application of systems theory to

higher education.

*Emergence of systems theory in higher education and the cybernetic model.*

Richard Birnbaum (1988) was among the first organizational theorists to develop a

comprehensive systems model for higher education. In his book, *How Colleges Work*,

Birnbaum (1988) specifically applied the major tenants of systems theory using a

cybernetic perspective. *Cybernetics* is the title of a book written by Norbert Weiner in

1948. Weiner, trying to capture the basic theoretical perspective of emerging systems

theory, defined cybernetics as the "multidisciplinary study of the structure and functions

of control and information processing systems" (Shafritz & Ott, p. 255). The primary

characteristic of a cybernetic system, as noted by Weiner, is self-regulation through the

use of biological, social, or technological subsystems. Subsystems identify problems,

solve problems, and receive feedback necessary for perpetual self-regulation

(Birnbaum, 1988; Scott, 1961; Shafritz & Ott, 1996; Weiner, 1948). The purpose of

self-regulation is to maintain organizational equilibrium. As noted by Birnbaum (1988),

equilibrium

> is accomplished through cybernetic controls – that is , through self-correcting
>
> mechanisms that monitor organizational functions and provide attention cues, or
>
> negative feedback, to participants when things are not going well. Systems of
>
> negative feedback detect and correct errors so that when something happens . . .
>
> that moves the college in an undesirable direction, something else automatically
>
> happens to bring it back on course (Morgan, 1986). Thus, coordination is

provided not by one omniscient and rational agent, but by the spontaneous

corrective action of the college parts. (p. 179)

In effect, cybernetic organizations maintain equilibrium through feedback and control

systems (Birnbaum, 1988; Scott, 1961). Consequently, understanding the adoption and

management innovations within Birnbaum's cybernetic organization requires

understanding the control and feedback systems within the organization.

Cybernetic controls "monitor organizational functions and provide attention

cues, or negative feedback, to participants when things are not going well" (Birnbaum,

1988, p. 179). Within higher education organizations, Birnbaum identified two types of

controls: structural controls and social controls. Structural controls are "explicit controls

manifested in organizational rules, regulations, and structures" (Birnbaum, 1988, p.

182). Examples of structural controls include purchasing policies, enrollment

procedures, and admission standards. Social controls are "implicit controls developed

through the interaction of individuals in groups that lead them toward shared attitudes

and concern for group cohesion" (Birnbaum, 1988, p. 182). Examples of social controls

include organizational culture, mission, institutional symbols, committee meetings, staff

interactions, and student perceptions.

Control systems within cybernetic organizations monitor inputs rather than

outputs (Birnbaum, 1988). By focusing on inputs, organizations monitor those items

that more directly impact institutional stability. As an input moves outside of an

acceptable range, controls are triggered and corrective action occurs. For example, a

decrease in the number of graduates (output) within the mathematics department at

Downey College will likely not generate any response in the department, unless the

decrease in graduates is met by a decrease in the level of funding (input) being allocated to the department. To summarize, structural and social control systems within cybernetic organizations monitor organizational inputs for the purpose of maintaining organizational equilibrium.

With regard to feedback systems, Birnbaum (1988) identified two activities facilitated through structural and social controls. First, controls initiate minor adjustments to restore acceptable limits of those inputs being monitored. For example, a student at Downey College may not enroll in more than 18 hours. A student trying to enroll in more than 18 hours must secure overload approval from an advisor. Once the student secures overload approval, then the student may enroll. In essence, structural controls monitor the number of hours in which students enroll. When the number of hours exceeds a defined threshold, then the control provides negative feedback to the system and regulates the action through a self-correcting process – requiring the student to secure advisor approval. In this example, structural controls identified the deviation, provided feedback to the system, and directed the student to take corrective steps which restored the system's equilibrium.

Second, controls initiate action to change organizational processes if minor adjustments are not effective. Returning to the Downey example, students seeking overload approval are having difficulty locating advisors to secure overload approval. This lack of advisor access is perceived negatively by students who complain publicly about the 18 hour policy. The Vice President for Academic Affairs becomes aware of the problem and casually mentions the concern at the monthly academic deans' meeting. The deans respond in varying ways, but all responses remind faculty of their

important role in enrollment and advisement processes. Most faculty respond by increasing office hours during enrollment periods. As a result, access to faculty increases, and students become less agitated about the 18 hour limit. Why did this example follow this path? A student-centered culture is important at Downey. In fact, the university's vision is to become one of the nation's premier, student-centered universities. Because of this culture, deans and faculty inferred the importance of the Vice President's comment and orchestrated a response to improve the situation. The social controls, and the cultural context in which these controls function, recognized disequilibrium was occurring, structural controls were not maintaining equilibrium, and therefore, processes were modified in order to restore equilibrium. It is easy to envision a different responses if the organization culture had been different. A more teacher-centered culture may have led to no response and a more consumer-centered culture might have contributed to a quicker and more dramatic response. In essence, the social control (university culture) detected a variation and reacted to restore equilibrium.

To summarize, structural controls, social controls, and their feedback systems support self-correcting, cybernetic organizations. As cybernetic organizations detect disequilibrium through control systems that monitor organizational inputs, feedback systems react through self-regulating processes. These reactions may result in minor structural changes or in major process changes. Maintaining and/or restoring equilibrium is the primary purpose of all control and feedback systems. In essence, the cybernetic perspective sees higher education institutions as "learning" organizations that have the capacity to evolve; capacity to learn from past experiences; capacity to solve problems; capacity to develop a shared vision; and the capacity to learn together

(Johnson, 1998; Senge, 1990, 2000). As noted by Wheatley (1999), viability and resiliency of a self-regulating organization comes from its "great capacity to adapt as needed, to create structures that fit the moment" (p. 82).

For the purpose of this study, it was important to understand the implication of control and feedback systems on the adoption or rejection of management innovations within the cybernetic framework. Initially, it appeared adoption or rejection might be linked to the perceived threat the innovation posed to the stability of the system. The likelihood of potential rejection may increase proportionally to the perceived threat, and conversely the likelihood of adoption increases when the perceived threat of the innovation decreases. Ultimately, the likelihood of adoption may increase if the required change is outside of the structural and social controls, if the required change maintains equilibrium, and/or if the required change is of minimal threat to the organization's equilibrium. However, to broaden our understanding of the potential impact of the cybernetic model on the adoption or rejection of management innovations, it was important to use the cybernetic model as a framework from which to examine those factors that distinguished higher education institutions from business organizations: power that is more dispersed than centralized; organizational ambiguity associated with the production function; and subsystems that are more loosely coupled than tightly coupled.

*Power, ambiguity, and coupling within cybernetic organizations.* Balance may be the most appropriate word to characteristic the function of centralized and dispersed power within cybernetic organizations. Balance is linked to three aspects of cybernetic organizations: (1) structural and social controls within the cybernetic organization; (2)

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the organization of subunits within the cybernetic organization; and (3) the inclusion of bureaucratic, collegial, and political characteristics within the cybernetic organization.

Two types of controls exist within cybernetic organizations: structural and social. Controls are used by leaders to monitor organizational functions and to provide feedback (Birnbaum, 1988). Structural controls (goals, policies, and procedures) are explicit controls and are established through centralized processes (Birnbaum, 1988). Conversely, social controls (organizational culture, mission, symbols, and perceptions) are more normative processes linked to dispersed power. In short, cybernetic controls result from processes that require a balance of centralized and dispersed power.

The organization of subunits also contributes to power that is dispersed and centralized. Subunits are formed in reaction to the complexity of problems faced by the organization (Birnbaum, 1988). As problem complexity increases, the organization responds through the addition of subunits. Each subunit and its decision maker become responsible for different issues associated with the problem (Birnbaum, 1988; Steinbruner, 1974). Over time, the number of subunits and decision makers increase, thus, decreasing the ability of one individual, or a few individuals, to make decisions for the organization. If we were to stop here, power might appear to be more disperse than centralized; however, some centralized power exists in that subunits and their decision makers function within the organization's boundaries as defined by its structural controls.

Birnbaum (1988) also notes cybernetic organizations include bureaucratic, collegial, and political aspects. Bureaucratic processes govern much of the organization's daily activities and structural controls. Political and collegial processes

influence interactions of groups and individuals in establishing and monitoring social controls, feedback from those controls, and any resulting action. The existence of bureaucratic, collegial, and political influences within a cybernetic organization further underscores that power has a centralized as well as dispersed characteristics.

Thus far, the work of Birnbaum (1988) indicates power within a cybernetic organization is both centralized and dispersed. Based on the previous discussion, the utilization of centralized or dispersed power is contingent upon context of the issue and is contingent upon that part of the organization responding to the issue. To understand the role of centralized and dispersed power on the adoption of management innovations within the cybernetic framework requires understanding the context in which the innovation occurs. This context may be understood by examining more closely the role of leaders within cybernetic organizations.

Cybernetic institutions, as described by Birnbaum (1988), basically run themselves leaving the cybernetic leader with little influence over how subunits operate. The basic task of the cybernetic leader is one of maintaining operational boundaries within which each subunit functions. To understand this task, Birnbaum (1988) identified a taxonomy for effective cybernetic leaders that includes seven aspects. Four of these aspects provide increased insights into the role of power in the adoption of management innovations within cybernetic organizations:

1. Cybernetic leaders realize the importance of both transactional and transformational leadership.

2. Cybernetic leaders cultivate the emergence of leadership within the various subunits.

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3. Cybernetic leaders remember that events are equivocal and that many opportunities to interpret organizational meaning afford them unusual influence without inducing the alienation that may arise from giving orders.

4. Cybernetic leaders complicate themselves by learning to use multiple frameworks, including the bureaucratic, collegial, and political frameworks, to interpret events within the organization.

Birnbaum (1988) advocates a balance of transactional and transformational leadership. Transaction and transformational leadership have not been identified as characteristics that distinguish higher education organizations from business organizations and thus are not a focus of this study. However, in light of Birnbaum's assertion, it is important to understand the linkage of transaction and transformational leadership to centralized, dispersed, position, and individual power.

Burns (1978) and Bass (1985, 1996) are perhaps the two individuals most identified with the development of transformational leadership theory (Yukl, 2002). Transactional and transformational are terms used to describe the behaviors used by leaders to influence followers and the subsequent effect of leaders' behavior on followers.

Transactional leadership involves exchange processes (Burns, 1978; Bass, 1985, 1996). Through exchange processes, leaders capitalize on the self-interest of followers. While these exchange processes may lead to compliance of the follower, compliance will not generate commitment to the desired objective. Essentially, compliance to desired behavior is the result of a transaction between leader and follower whereby the leader appeals to the self-interest motives of the follower. To achieve the desired

behavior, the leader will use rewards as well as active and passive management of follower behaviors that are exceptions to the desired behavior. In essence, transactional leadership may rely more on centralized power than dispersed power and may rely more on power linked to position than on power tied to the individual.

Transformational leadership relies on the capacity of leaders to motivate followers by appealing to the followers' emotions and values. Leaders influence followers to change behavior and to exceed desired objectives by "(1) making them more aware of the importance of task outcomes, (2) inducing them to transcend their own self-interest for the sake of the organization or team, and (3) activating their higher-order needs" (Yukl, 2002, p. 253). Bass (1985) and Bass and Avolio (1990) identified four behaviors associated with transformational leadership: (1) idealized influence – emotional identification of the follower with the leader; (2) intellectual stimulation – leader influences follower to view problems from different perspectives; (3) individualized consideration – support, encouragement, and coaching provided to followers by the leader; and (4) inspirational motivation – leaders model desired behaviors for followers and inspire behavior through communication of vision. Overall, transformational leadership characteristics appear to be linked more closely to power associated with an individual's personal characteristics than power linked to position – specifically referent and expert power; though it does appear transformational leadership might also include some linkage to power in the position category. There appears to be little reliance of transformational leadership upon either centralized power or decentralized power.

To summarize, Birnbaum's advocacy for a leadership approach that incorporates both transactional and transformational leadership linked to centralized, dispersed, position, and individual power. Logically, the successful adoption of a management innovation requires leaders to use appropriately these four types of power within the context of the cybernetic organization.

Second, Birnbaum (1988) encouraged cybernetic leaders to cultivate leadership within the various subunits of the organization. Increased leadership within an organization's subunits clearly advocates power that is more dispersed than centralized. Dispersion of power is likely to increase as leadership increases within an organization's subunits. To cultivate leadership, requires leaders who utilize individual influence over position influence, though there certainly is a potential role for power linked to position. In essence, the successful adoption of management innovations within a cybernetic organization is reliant upon the leadership capacity and power of the organization's subunits.

Third, Birnbaum (1988) encouraged leaders to interpret organizational events as they occur over giving orders as a means to gain influence. This assertion by Birnbaum contrasts proactive and reactive processes. Birnbaum warns that proactive processes linked to giving orders may indeed lead to less influence than reactive processes that interpret events. For events to occur, the leader must facilitate processes that allow power to be dispersed. Organizational events must be allowed to occur within the subsystems in order to allow interpretation to occur centrally. Hence, event interpretation seems to involve interplay between dispersed and centralized power. Similarly, power linked to position and individual characteristics are required in order

for successful leaders to interpret events. A leader must be legitimate as designated by position, and the leader must have expert power in order to influence the followers' acceptance of the leader's interpretation. In essence, Birnbaum's assertion of reactive centralized leadership prohibits the proactive introduction of management innovations within cybernetic organizations.

Fourth, Birnbaum (1988) encouraged cybernetic leaders to use multiple frameworks as a basis for their leadership and as a basis to interpret happenings within and external to the organization. As previously discussed, the use of multiple frameworks requires leaders to use centralized power, to cultivate power that is dispersed, to utilize power tied to the position, and to enhance personal attributes that lead to increased power. In short, the use of multiple sources of power is required by the cybernetic leader who desires to use bureaucratic, collegial, and political frameworks to influence the adoption of management innovations within cybernetic organizations.

In light of the previous paragraphs and Birnbaum's assertions about cybernetic leadership, what role might power play in the adoption of management innovations? The seven management innovations studied by Birnbaum (2001) were introduced to higher education via senior level administrators at the urging of boards of control, consultants, or other key persuaders external to the organization. Hence, the initial introduction and adoption of the management innovation appears to require power that is more centralized than decentralized. However, by following Birnbaum's logic, innovations must arise from subsystems or be carefully orchestrated reactions to changes in the organizational inputs monitored by subsystems in order to be considered legitimately for adoption by the cybernetic organization. In light of this scenario, power

needed to influence the adoption of management innovations is clearly more dispersed

within the cybernetic organization's technical subsystems than centralized power within

its administrative subsystem. If this conclusion is true, one must question the role of

follower perceptions in the adoption of management innovations. More specifically,

how is the adoption of management innovations by followers influenced by the

perceived use of power by leaders trying to influence the adoption?  Because of this

question and in light of the previous paragraphs, the eventual adoption or rejection of

management innovations within cybernetic organizations is more a function of

dispersed power within the various technical subsystems than a function of centralized

power associated with the administrative subsystem. Additionally, the adoption or

rejection is more linked to power linked to an leader's personal characteristics than to

power derived from position.

Second, ambiguity tied to the production function is a characteristic supported

by the cybernetic model (Birnbaum, 1988, 2001). Two characteristics of the cybernetic

organization support ambiguity tied to the production function: (1) cybernetic

organizations focus on inputs instead of outputs; and (2) cybernetic organizations

develop subsystems in tandem with the emergence of conflicting goals. The following

paragraphs will provide elaboration tied to each characteristic.

Cybernetic organizations monitor and respond to a limited number of inputs. By

focusing on inputs instead of outputs, cybernetic organizations may accommodate

multiple, conflicting goals and purposes and thereby lessen the need for elaborate,

strategic processes "of rational calculation and decision making" (Birnbaum, 1988, p.

181). Cybernetic organizations "are not based on measuring or improving their output"

(p. 181). The improvement or understanding of technical processes that convert inputs to outputs are of little concern. As a result, cybernetic leaders are less likely to use rational processes to identify potential outcomes prior to the implementation of new activities or programs. Moreover, when new goals emerge or inputs move outside acceptable limits, the cybernetic leader is not concerned with developing effective technical processes to address the issue. Instead the leader looks to historical processes that have been successful. In higher education, the successful historical process is often the appointment of an ad hoc committee or blue ribbon task force. Why the input returned to the desired level or why the new goal is adequately addressed are of little importance. The committee was assembled and the desired change occurred. "No one knows exactly why this has happened, and so the cause and effect relationship can be thought of as occurring in a black box" (Birnbaum, 1988, p. 187). Essentially, the focus is on stability linked to the input and not on the technical process. To summarize, it appears the cybernetic model by focusing on inputs does not require the standardization of the production function and thus aligns with ambiguity tied to the production function within higher education.

Cybernetic organizations develop subsystems in tandem with the emergence of conflicting goals. When a cybernetic organization introduces a new goal or is required to adopt a new goal, the organization will develop a new subsystem(s) in response to the new goal (Birnbaum, 1988). Over time, a hierarchical structure of subsystems will evolve that corresponds to the complexity of the organization's goals. Because of this fragmented subsystem, cybernetic organizations have the capacity and ability to respond to "ill-defined and often conflicting purposes" (Birnbaum,1988, p. 190).

A return to Downey College to illustrate how subsystems evolve might be helpful. The historic mission and goals of Downey College had primarily focused on access, academic excellence, and outreach. Subsequently, the university had evolved to include three primary subsystems: student services, academic affairs, and continuing education. The student services subsystem included two sub-subsystems that aligned with its primary functions: recruitment and disability services. Other functions within the student services were primarily coordinated through the office of the vice president for student services. With the arrival of a new President and a new vision to become a premier student-centered university, the mission and goals of Downey were expanded. Obvious goal conflicts quickly emerged. How does a university achieve academic excellence while being a premier student-centered university? How does a community outreach program respond to these expanded mission and goals? To resolve these growing conflicts, the student services unit was renamed student development and several new sub-subsystems were created within student development to accommodate the unit's new student-centered goals, including campus life, housing and residence life, career development, and freshmen experience. The reorganized student development subsystem and its new sub-subsystems became primarily responsible for the student-centered aspects of Downey's expanded mission and goals, thus relieving the other subsystems of the need to manage conflicts between the expanded mission and goals and the historic mission and goals.

In summary, it appears cybernetic organizations focus more on inputs than on outputs and technical processes used to convert inputs to outputs. This characteristic when coupled with fragmented subsystems that allow cybernetic organizations to

respond to conflicting goals appears to indicate that Birnbaum's cybernetic perspective of organizations does not require the standardization of the production function and thus becomes a potential framework from which to understand the rejection of management innovations within higher education.

Third, and as discussed in the previous section, cybernetic organizations are complex systems of hierarchal subsystems. These subsystems are more loosely coupled than tightly coupled. For example, changes in the student life unit will have little if any consequence on the English department. Loose coupling across subunits allows for the development of structures and processes that differ considerably. The fact that structures and processes are different across subunits is of little consequence to the institution. Loosely coupled subsystems may be added, subtracted, or collapsed with little effect on the cybernetic organization (Kerr, 2001; Simon, 1957). Coupling across subunits becomes more tightly coupled with issues directly related to social and structural controls of the organization including organizational rules, regulations, and culture (Birnbaum, 1988). Additionally, subunits may become more tightly coupled through political processes that may align formal subunits and informal groups across the organization in vying for power and resources in support of common self-interests (Birnbaum, 1988).

Linkages within each subsystem are more tightly coupled than linkages across subsystems (Birnbaum, 1988). While subsystems function within the organization's social and structural boundaries, each subsystem may develop its own bureaucratic and collegial control (Cyert & March, 1963). These controls govern behavior and operations of the unit while optimizing effort toward achieving its assigned

organizational goal(s). Hence, the application of rational decision making within subunits is simplified due to the limited focus of the subsystem and due to linkages within the subsystem that are more tightly coupled than loosely coupled.

To summarize, the literature indicates cybernetic theory generally supports the three characteristics that distinguish higher education organizations from businesses. Specifically, cybernetic theory recognizes (1) power that is more dispersed than centralized; (2) ambiguity tied to the production function; and (3) subsystems that are viewed as more loosely coupled than tightly coupled. Additionally, the cybernetic model provides multiple perspectives from which to analyze and understand organizational process. The cybernetic model contains elements of the bureaucratic, collegial, and political model as well as normative and deterministic elements. Therefore, the cybernetic model appeared to accommodate the complexity of higher education organizations and served as the guiding organizational framework for this proposed study.

The question then became, "What factors might contribute to the adoption of a management innovation in higher education in light of the cybernetic model?" It appeared that the adoption of a management innovation in a cybernetic organization was perhaps contingent upon decentralized and centralized elements of the organization. From a decentralized perspective, successful adoption appeared to be contingent upon the leadership of various subsystems and the congruency of the innovation with the values, beliefs, and goals of the subsystem. From a centralized perspective, adoption was contingent upon the capacity of the leadership to introduce the innovation as a response: as a response to a crisis; as a response to a problem that

has been identified through data collection procedures; as a response to a successfully adopted innovation in another subsystem that can be shared with another subsystem encountering similar issues with similar values, beliefs, and goals; or as a subtle response to improve selected activities within a specific subsystem.

*Summary of Organizational Theory*

Increased organizational complexity during the twentieth century was accompanied by organizational models that attempted to explain that complexity. Each model provided differing and increasingly complex views of power, coupling, and goal ambiguity. It is evident that organizational perspectives outgrew the structuralist interpretations that viewed higher education organizations as similar to deterministic business models. Instead the literature supported a view where academic institutions are seen as complex organizations that are perhaps more normative than deterministic with subsystems that are more loosely coupled, thus allowing them to handle ambiguity of goals and ambiguity tied to the production function.

If academic organizations are more normative than deterministic, why then do these normative organizations continue to look to the rational paradigm for management innovations? The seven rejected management innovations studied by Birnbaum (2001) were rooted in the rational paradigm – that is, the innovations sought to maximize effectiveness and efficiency through standardization of the production function. Even in light of complex organizational models and understanding that account better for the unique organizational characteristics and dynamics of higher education, management innovations rooted in the rational paradigm continue to circulate through higher

education (Best, 2006; Birnbaum, 2001). Why? Is it possible that rejected management

innovations serve some other purpose than increased effectiveness and efficiency?

*Benefits of Management Innovations*

Indeed, Birnbaum (2001) cited a number of benefits linked to rejected

management innovations. First, the management innovations studied by Birnbaum

appeared to provide a window through which academic institutions could view the

environment in which they exist and thus provide a catalyst to examine, to reexamine,

and to consider the potentiality of change (Birnbaum, 2001). As noted by Bohl and

Luthans (1996), "Pity those organizations that have not gravitated toward the new and

innovative, tested the latest fad, tempered it against economic realities, and emerged as

stronger and more resilient" (p. 3). The implementation of a management innovation is

an exhilarating and sometimes painful process that provides an opportunity for an

organization to examine itself from a different perspective and to affirm existing

practice or to change practice in light of the examination. In either case, the examination

leads to organizational renewal (Birnbaum, 2001).

Second, management innovations appeared to elevate the importance of data

(Birnbaum, 2001). Prior to the management innovations, academic organizations tended

to undervalue the quantitative (i.e., enrollment, program costs, service area

demographics, etc.) and overvalue the qualitative (i.e., culture, history, relationships,

values, etc.). The importance of the quantitative has certainly been elevated through the

adoption of management innovations; however, the danger comes when the pendulum

swings to the other extreme (Birnbaum, 2001). Birnbaum warned that the problem with

management innovations is "not created by giving managers access to more data, but by

the adoption of rational systems in which hard data, rather than soft data are given

primacy" (p. 207). Effective management requires a balance of both, and it is through

the adoption of management innovations that the use of quantitative data were elevated.

A third benefit of management innovations as noted by Birnbaum (2001) was

the emphasizing of alternative goals and values. As noted previously, higher education

organizations often have multiple and at times conflicting goals and values. It is nearly

impossible to optimize every goal and to validate every value. Therefore, management

innovations provide a means for alternative goals and values to surface (Birnbaum,

2001). For example, suppose that an institution had worked for several years on

elevating the status of the organization in the area of scholastic research. Indeed the

institution had become successful at increasing levels of external funding, establishing

new research laboratories, and securing high quality research faculty. However, little

attention was given to student retention and graduation during the same period. Then

suppose that the governing board of the institution decides to introduce a management

innovation titled performance-based funding that links institutional funding to retention

and graduation rates. As the innovation is implemented within the institution, the

importance of retention and graduation is elevated. Thus, the academic innovation

provided a means to emphasize a goal and value of the institution that had previously

been neglected.

Fourth, management innovations appeared to diversify interactions and

communication within organizations (Birnbaum, 2001). Activity and processes spawned

by the introduction of a management innovation often require that the organization

interact and communicate in new ways both internally and externally (Birnbaum, 2001).

This diversified communication and interaction provide a means by which to increase organizational and individual knowledge (Birnbaum, 1988; Mintzberg, 1979; Senge, 1990; Wheatley, 1999).

Finally, Birnbaum (2001) concluded that the adoption of management innovations reinforced management myths within higher education. Birnbaum notes:

People in general must believe their institutions have some control over their own destiny, and managers in particular must believe in their own efficacy. Institutions live through the myths they create about how things happen, and part of that myth is that rationality is important and what managers do have influence. The adoption of a fad [innovation] and the activities of managers in implementing the fad [innovation] reinforce these myths. . . . Myths provide additional leverage and confirm the authority of a manager. (p. 210)

If indeed this last benefit is true, it would mean that management innovations reinforce myths tied to organizational management and to an organization's leaders. Specifically, the adoption appears to support the myth that managers, and thus management, can influence the behavior of the organization. Therefore, if managers and management are perceived as influencing change through the adoption of management innovations, they are fulfilling the myth and thus are perceived as being legitimate.

This conclusion leads to several questions. Is it possible that while organizational models have evolved in complexity to accompany the increasing complexity of higher education organization, that there remains in place structures, processes, and expectations tied to structural theory and that these remnants are

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manifested in the term "legitimacy"?  If so, how then does the adoption of innovations impact the legitimacy of an organization and its leaders, or conversely, how does the legitimacy of a leader, the legitimacy of an organization, or the legitimacy of innovation impact the adoption of the innovation? Additionally, what factors influence the legitimacy of an innovation and the subsequent adoption of the innovation?

*The Role of Legitimacy in the Adoption of Management Innovations*

Before considering these questions, it was important to define legitimacy. In general, legitimacy appeared to be constructed both individually and socially (French & Raven, 1959; Linton, 1945; Pfeffer, 1981; Yukl, 2002). Linton was among the first to investigate behavior linked to group norms. Through his work, he distinguished group norms by three categories: universal (behavior is universal within the context of the culture); alternative (behavior is an individual's choice); and specialties (behavior is linked to the position organization). French and Raven (1959) used the work of Linton to examine further the influence of group norms on behavior, attitudes, and beliefs. French and Raven found that individuals often speak of changing behavior, attitudes, and beliefs with terms like "should, ought to, or has a right to" (p. 379).  In other words, individuals evaluate behaviors, attitudes, and beliefs in terms of a positive-neutral-negative trichotomy and base that evaluation on internalized norms and values. French and Raven defined this evaluation process as legitimacy. Given that management innovations often require organizations and individuals to change behaviors, attitudes, and beliefs (Birnbaum, 2002; Rogers, 1995), it is logical to conclude that legitimacy plays a significant role in determining the adoption or rejection of a management innovation. Therefore, for the purpose of this study, legitimacy will be defined as a

label assigned by individuals to identify the validity of a management innovation. Legitimacy emerges as the result of an evaluative process used by individuals to determine the alignment of the management innovation with the internalized norms and values of individuals (French & Raven, 1959). The results of this evaluation process are reflected as a positive-neutral-negative perception of the management innovation.

With legitimacy defined, it was now possible to consider the role of legitimacy in the adoption or rejection of innovations. If legitimacy was one of the evaluation tools by which leaders and followers evaluate whether to adopt or reject a management innovation, what are the factors that contribute to the evaluation process? French and Raven (1959) found that internalized norms and values contributed to the evaluation process. In essence, an innovation that is more closely aligned with the internalized norms of an individual may be perceived as being more legitimate and thus will likely be adopted. Conversely, an innovation that counters the internalized norms of an individual would be considered less legitimate and most likely would be rejected. Therefore, it is possible to conclude that the legitimacy of a management innovation in tandem with the legitimacy of leaders might partially explain why management innovations are successfully adopted in the business sector where the internalized norms of individuals within the organization are congruent with the expected outcomes of effectiveness and efficiency tied to the management innovation. It is also within the realm of possibility to envision that a board member with a business background could view the same innovation as legitimate within the context of higher education. Subsequently, because the board member views the innovation as legitimate and because the board member is viewed as legitimate by the president, it is conceivable to

see how the president would view the innovation as legitimate and would target the innovation for adoption at his/her institution. As the innovation trickles through the institution, most certainly the potential for decreased legitimacy is possible especially if the innovation is not supportive of the expectations of autonomy within the academic unit. Indeed, Birnbaum (1988) noted,

> Beliefs and decisions that are seen as logical and self-evident by one group may be considered mindless or devious by another. Different versions of reality may lead groups to become committed to certain courses of action and to lose the ability to recognize or understand alternatives. Some of what happens on campus can be explained only by realizing that people respond to a reality that they themselves create. (p. 178)

From the literature and the above illustration, it was possible to hypothesize that internalized norms of individuals impacted the evaluation of a management innovation and subsequently determined the innovation's legitimacy.

If legitimacy is linked to internalized norms, one must then consider the factors that shaped those norms. As previously noted, organizational norms within higher education vary greatly from those of the business sector in terms of power, coupling, and ambiguity. This variation of norms is even more pronounced within the academic unit where plurality of power, loose coupling, and ambiguity are perhaps more revered and expected than in the nonacademic unit and in most business organizations. Therefore, is it possible that power, coupling, and goal ambiguity somehow interact in a cybernetical organization to influence the perceived legitimacy of a management innovation, which in turn influences the adoption or rejection of that innovation? The

literature did not reveal any studies that examined how power, coupling, and ambiguity interact within a cybernetical organization to influence perceived legitimacy of a management innovation and the subsequent adoption or rejection of that innovation. While Birnbaum (2001) hinted that legitimacy played a role in the adoption and rejection of management innovations, the literature did not yield any studies that empirically tested this hypothesis.

CHAPTER III

*Organization*

Chapter III articulates the methodology used to answer the research questions consistent with the purpose of this study. The chapter (1) identifies the study's research design and provides a supporting rationale for that design; (2) articulates the population and selected site; (3) discusses sampling techniques; (4) restates the variables of interest; (5) establishes procedures and instruments used in data collection; (6) establishes data analyses performed on the collected data; and (7) provides a discussion of potential limitations.

*Purpose of the Study*

The purpose of this study was to broaden our understanding of how power, coupling, ambiguity, and subsystems influenced the perceived legitimacy and subsequent adoption or rejection of a management innovation within the context of a higher education organization.

*Research Questions*

Research questions explored by this study included the following:

1.  Did perceived legitimacy of a management innovation influence individuals (administrators, faculty, and staff) to adopt or reject a management innovation within higher education?

2.  Did perceived legitimacy of a management innovation vary based on the organizational subsystem (technical and administrative) in which individuals worked?

3. Did perceived use of power by administrators to facilitate the adoption of a management innovation influence how individuals perceived legitimacy of a management innovation?

4. Did the perceived degree of coupling of a subsystem to a proposed management innovation influence how individuals perceived the legitimacy of a management innovation?

5. Did the perceived ambiguity of inputs, processes, and outputs influence how individuals perceived the legitimacy of a management innovation?

6. Did the factors of power, coupling, and ambiguity interact to influence how individuals perceived the legitimacy of a management innovation?

*Research Design*

This study used a two-phase, sequential, mixed method research design (Creswell, 1999, 2003; Morse, 2003). The following paragraphs highlight two prominent features of this design and provide a rationale for their inclusion.

First, the study included a mixed method design. In general, a mixed method design is defined as a study that uses both quantitative and qualitative methodologies, data collection techniques, data analyses, and reporting techniques (Creswell, 1999, 2003; Morse, 2003). The richness of data, analysis, and findings associated with the mixed method design has led to the increased usage of the methodology (Creswell, 2003). This study required the collection of quantitative and qualitative data in order to gain a more holistic and integrated understanding tied to the purpose and research questions. Hence, a mixed method design was used to expand understanding related to the purpose of the study and the study's research questions (Creswell, 2003). Such an

approach increased the scope and comprehensiveness of the study as well as provided

additional information, insights and perspectives (Morse, 2003).

Second, the study occurred in two, sequential phases. Creswell (1999, 2003)

referred to this approach as a "two-phase, sequential, explanatory design." This design

is most appropriate when a deductive approach is used to test theory in the first phase

and the second phase can be used to provide confirmation and elaboration of anticipated

findings and/or explanation of any unanticipated results (Creswell, 1999, 2003; Morse,

2003). For this study, Phase I focused on answering the identified research questions

utilizing an ex post facto design. The ex post facto design utilized quantitative

sampling, data collection (a survey), and analysis to yield theoretical statements related

to the adoption or rejection of a specific management innovation within a higher

education setting. Phase II used qualitative sampling, data collection (semi-structured

interviews), and analysis to further interpret, explain, and add details to the theoretical

model from Phase I.

Figure 2 provides an overview of the two-phase, sequential, mixed method

design used in this study. The model illustrates the two methods associated with each

phase: "QUAN" (quantitative) and "qual" (qualitative). QUAN is in all capital letters to

signify that the study was more theoretically driven by the quantitative method than by

the qualitative method (Creswell, 1999, 2003; Creswell et al., 2003; Greene et al., 1989;

Morse, 2003). As illustrated in the model, Phase I quantitative data was collected and

analyzed before proceeding to Phase II, which included qualitative data collection and

analysis. At the conclusion of both phases, interpretation of Phase I and Phase II results

occurred.

*Figure 2.* Two-phase, sequential, mixed method design.

| PHASE I | | PHASE II |
| :---: | :---: | :---: |
| QUAN | → | qual |

| QUAN | QUAN | qual | qual | Integration |
| :---: | :---: | :---: | :---: | :---: |
| Data Collection | Data Analysis | Data Collection | Data Analysis | |
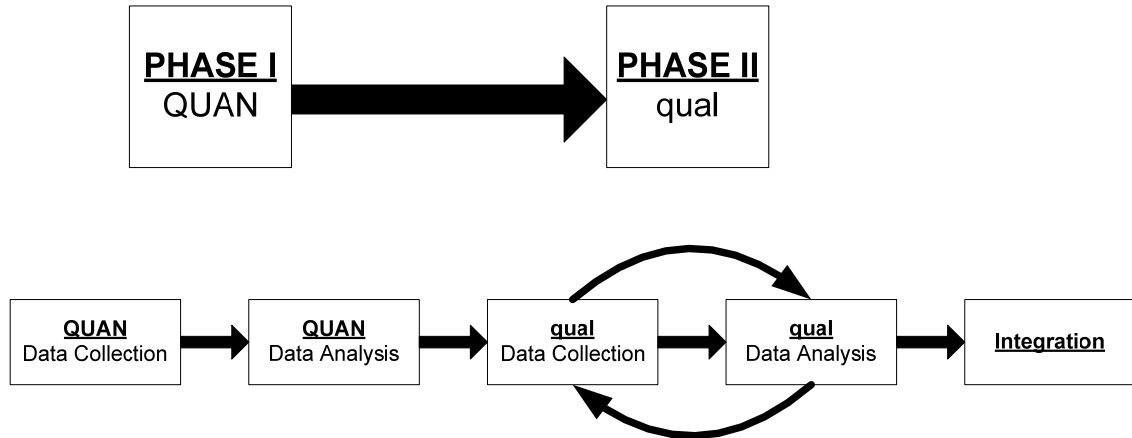
Three additional rationales supported the use of the two-phase, sequential,

mixed method design and are highlighted in the balance of this section. First, the

adoption of management innovation occurred within the complexity of a higher

education organization. To explore the research questions within this bounded

complexity, there was a need to conduct an in-depth, just-in-time examination linked to

the adoption of a management innovation by individuals and subsystems within a

specific university. A two-phase, sequential, mixed method design was an appropriate

methodology to examine a contemporary phenomenon as it occurred within an

authentic setting (Creswell, 1999, 2003). Second, as established in Chapter II, this study

relied on Birnbaum's (2001) theoretical framework to set up its methodology and to

guide data collection and analyses in an attempt to answer the researcher's questions.

The two-phase, sequential, mixed method design accommodated the use of a prior

theoretical proposition (Creswell, 1999, 2003; Creswell et al., 2003; Greene et al., 1989;

Morse, 2003). Finally, the design allowed the researcher, as a participant observer, to

conduct a more in-depth investigation of the phenomenon within the specific bounded

context in which the phenomenon occurred. Such an approach provided access to individuals, groups, and events that might otherwise had been inaccessible and allowed an opportunity for the researcher to perceive data and to explore the purpose and research questions from an insider's perspective (Ball, 1997; Yin, 2003). Given these three reasons plus the two mentioned at the beginning of this section, the two-phase, sequential, mixed method design was well suited to answer the proposed research questions.

*Population and Site Selection*

Two types of populations are distinguished in the development of research designs: targeted population and accessible population (Ary, Jacobs & Razavieh, 2002; Wallen & Fraenkel, 2001). The targeted population is often defined as that population to which the researcher would like to generalize the findings from the study (Ary et al., 2002; Wallen & Fraenkel, 2001). Given that it may be difficult to have access to the entire targeted population, a researcher may refine the population to reflect those who are accessible (Ary et al., 2002; Wallen & Fraenkel, 2001). As summarized by Ary et al., (2002), "The former is an ideal choice and the later, a realistic choice" (p. 130). This study occurred within a single higher education institution. For the purpose of this study, the institution will be known as Compass Point University. Compass Point University (CPU) is a pseudonym for a public, four-year regional institution that is currently implementing a management innovation. Hence, the targeted population was defined as all full-time employees at CPU, and the accessible population was defined as those individuals at CPU who completed the survey instrument and/or participated in the interviews.

*Site background.* With the population defined, the balance of this section will provide some general and historical information about Compass Point University (CPU). Compass Point University is a regional institution located in the Midwestern part of the United States. CPU was established in the early 1900s by the state legislature as Compass Point Normal School and was given a mission to train public school teachers. Academic programming at the normal school consisted of a four-year secondary program and a two-year college post-secondary program. Upon completing this curriculum, a graduate of the normal school was awarded a lifetime teaching license.

In the 1920s, Compass Point Normal School became Compass Point Teachers' College and was authorized to increase academic programming to four years of teacher education and to confer bachelor's degrees. In the decade of the 1940s, Compass Point expanded its academic programs to include degree programs in Arts and Sciences as well as Education. Accompanying these new degrees was a third name change, Compass Point State College.

By the 1950s, Compass Point State College was authorized to offer a fifth-year program for teachers leading to the Master of Teaching degree, and in 1960s, Compass Point was authorized to offer other advanced degrees. In the 1970s, the state legislature officially changed the name of Compass Point State University, and in the mid 1980s, the official title became Compass Point University.

At the time of this study CPU offered about 40 undergraduate degree programs and about ten graduate programs. CPU employed approximately 430 full-time employees, including 150 full-time faculty. The University was accredited by the North

Central Association and nine academic programs were accredited by various professional organizations. Nearly 4,500 students attended Compass Point University. Non-traditional students over age 22 comprised 59% of the student body. Sixty-three percent of the student body were female and 27% were minority. With regard to classification, 25% were freshmen, 15% sophomores, 20% juniors, 20% seniors, 20% graduates. Nearly 72% of CPU's full-time faculty had terminal degrees.

Dr. I. M. Normal was named the president of Compass Point University nearly three years prior to this study. Dr. Normal began many new initiatives at CPU during his first year as president, including a merit pay program. The merit pay program was slated for implementation during the spring semester nearing the end of the Dr. Normal's first year. The spring semester was the time of year when employee evaluations occurred and salary increases determined for the following year. Merit pay evaluations occurred, but in the end, salary increases were more reflective of cost-of-living increases than merit pay increases. Basically, most employees received the same salary increases. In the second year, considerable effort was put into defining evaluative criteria and processes to support more thoroughly the merit pay program. The merit pay program was used for a second time to evaluate employee performance in the spring semester of Dr. Normal's second year, and merit stipends were awarded during the fall semester. Dr. Normal left the institution midway through his third year, after the merit stipends were awarded. This study occurred in the spring semester following Dr. Normal's departure.

Compass Point University is a representative setting in which to conduct the study. First, CPU is one of 430 institutions affiliated with the American Association of

State Colleges and Universities (AASCU). These 430 institutions enrolled more than 3 million students and accounted for 56% of enrollment at all public four-year institutions in America in 2008. AASCU colleges are regionally accredited institutions of higher education, and since AASCU grew out of the Association of Teacher Education Institutions, many of these colleges and universities share common beginnings as normal schools (American Association of State Colleges and Universities, 2008).

The Carnegie Classification system also supports that CPU shares commonalities with a large number of institutions based on control and level, undergraduate instructional programs, graduate instructional programs, enrollment profile, undergraduate profile, size and setting, and basic classification (Carnegie Foundation for the Advancement of Teaching, 2008). As demonstrated in Table 1, the number of institutions with which CPU shares commonalities ranges from 132 institutions with which CPU shares a common graduate student population and mission to 656 institutions with which CPU shares common control and level (public: 4-year institution). Basically, information from the American Association of State Colleges and Universities as well as information from the Carnegie Foundation for the Advancement of Teaching (2008) indicated that CPU shared similar missions, purposes, and characteristics with a large number of other public, four-year, regional institutions of higher education throughout the United States and thus was a representative or typical site for this study. This representativeness when coupled with other aspects of the research design contributed to generalization of findings (Merriam, 1998; Stake, 1995).

Table 1

*Similar Institutions by Carnegie Classification*

| *Classification* | *Category* | *Number of Similar Institutions* |
|---|---|---|
| Control & Level | Public: 4-year or above | 656 |
| Undergraduate Program | Prof+A&S/SGC: Professions plus arts & sciences, some graduate | 305 |
| Graduate Program | Postbac-A&S/Ed: with arts & sciences (education dominant) | 132 |
| Enrollment Profile | HU: High undergraduate | 523 |
| Undergraduate Profile | FT4/S/HTI: Full-time four-year, selective, higher transfer-in | 306 |
| Size & Setting | M4/NR: Medium four-year, primarily nonresidential | 165 |
| Basic | Master's L: Master's Colleges and Universities (larger programs) | 347 |

## *Variables of Interest*

The variables of interest for this study included five independent variables and two dependent variables. One variable, legitimacy, was both a dependent and an independent variable. As a dependent variable, this study sought to understand how the factors of power, coupling, ambiguity, and organizational subsystems influenced perceived legitimacy of the merit pay system. In turn, legitimacy, as an independent variable, was examined to determine its influence on the adoption or rejection of an innovation.

The remainder of this section will further define the variables of interest.

*Independent Variables*

The study focused on five independent variables. The independent variables were legitimacy, organizational subsystems, power, coupling, and ambiguity. A

discussion of each variable and its components is included in the remainder of this section.

*Legitimacy.* Legitimacy was defined as a label assigned by staff, faculty, and administrators to identify the validity of the merit pay system. Legitimacy emerges as the result of an evaluative process used by individuals to determine the alignment of the merit pay system with the internalized norms and values of individuals (French & Raven, 1959). The results of this evaluation process are reflected as a positive-neutral-negative perception of the merit pay system.

*Organizational subsystems.* Two organizational subsystems were of interest to this study: the technical subsystem and the administrative subsystem (Birnbaum, 1988). The technical subsystem was defined as that part of the higher education organization primarily responsible for implementing processes that convert inputs into outputs and included all full-time faculty at Compass Point University (Birnbaum, 1988). The administrative subsystem was defined as that part of the organization that coordinated and directed the organization and included all full-time staff and administrators who worked at Compass Point University within four structural units: the strategic apex, middle line administrators, techno-structure and support staff (Birnbaum, 1988; Mintzberg, 1979).

*Power.* Power was defined as the capacity of an administrator to influence the behavior or activities of other individuals (administrators, faculty, and staff) related to the adoption of the merit pay system. For this study, three types of position power were of interest: legitimate, reward, and coercive; and two types of personal power were of interest: expert and referent (French & Raven, 1959; Warren, 1968).

*Coupling.* Coupling, as a variable of interest, was defined as the degree to which individuals within a subsystem perceived that changes in their behaviors or activities directly influenced the merit pay system and thereby achieved the purposes of the merit pay system. Coupling was measured along a continuum between tightly coupled on the one end to loosely coupled on the other.

*Ambiguity.* Ambiguity was defined as the degree to which individuals within a subsystem could clearly identify the inputs, processes, and outputs of the subsystem, those parts of the production function. Individuals perceive inputs, processes, and outputs along a continuum. On one end of the continuum, individuals could clearly define inputs, processes, and outputs associated with their work as it occurred within the context of their associated subsystem. Also, inputs and outputs could be measured clearly. On the other end of the continuum, individuals perceived inputs, processes, and outputs as ambiguous, or perhaps indefinable, and inputs and outputs could not be measured clearly.

*Dependent Variables*

The study focused on two dependent variables. The dependent variables were legitimacy and adoption or rejection of a management innovation. A discussion of each variable and its components is included in the remainder of this section.

*Legitimacy.* Legitimacy was defined as a label assigned by staff, faculty, and administrators to identify the validity of the merit pay system. Legitimacy emerges as the result of an evaluative process used by individuals to determine the alignment of the merit pay system with the internalized norms and values of individuals (French &

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Raven, 1959). The results of this evaluation process are reflected as a positive-neutral-negative perception of the merit pay system.

*Adoption or rejection of the management innovation.* Adoption was defined as the degree to which individuals within the organization changed behaviors and activities to align with the merit pay system (Rogers, 1995). Rejection was defined as a decision made by individuals not to adopt the merit pay system. Adoption or rejection of an innovation is associated with an innovation-decision process (Rogers, 1995). The innovation-decision process includes four stages that lead to adoption or rejection: (1) knowledge; (2) persuasion; (3) decision; and (4) implementation (Rogers, 1995). During the knowledge stage, individuals have a basic knowledge about how the merit pay system works. They understand the purposes of the merit pay system and its processes. Individuals in the persuasion stage develop either a favorable or unfavorable attitude toward the merit pay system. This stage is followed by a decision to adopt or reject the innovation. Finally, implementation occurs when individuals have changed activities or behaviors to align with the criteria of the merit pay system. Therefore, adoption or rejection of the merit pay system was measured by progression through innovation-decision process and the ultimate rejection or adoption of the merit pay system.

<div align="center">*Sampling*</div>

*Phase I*

Quantitative design, sampling, data collection, and analysis were used in Phase I of this study. A survey was the only means of data collection in Phase I. The population for this study included all 430 full-time employees at Compass Point University. Full-time employees were defined as those employees who worked more than 30 hours each

week at Compass Point University and were specifically designated as full-time employees by the human resources office at Compass Point University.

To ensure that the sample was representative of the population and to decrease visibility of the study, a proportional stratified random sampling technique was used to select 250 potential participants from the population. Individuals involved in the field test were not included in the sample. Stratified random sampling involved the sorting of individual subjects based on specific strata and then random selection of subjects within each strata (Ary et al., 2002). The technique was proportional in that the number selected from each stratum was proportional to the number within each stratum for the population (Ary et al., 2002). One stratum was used for random sampling in Phase I: subsystems. Subjects were sorted into two subsystem categories: (1) participants from the technical subsystem (all full-time faculty); and (2) participants from the administrative subsystem (all full-time staff and administrators). These two categories were selected because they aligned with the units of analyses for this study as proposed in the research questions. At Compass Point University, 146 individuals were employed within the technical subsystem and 284 employed within the administrative subsystem. Proportionally, 85 individuals were selected randomly from the technical subsystem, and 165 individuals were selected randomly from the administrative subsystem.

*Phase II*

Qualitative design, sampling, data collection, and analysis were used in Phase II. The purpose of Phase II was to interpret, explain, and provide additional details related to Phase I findings. Fifteen face-to-face personal interviews provided the means of data collection. Two sampling techniques were used to select Phase II participants. First, a

stratified random sampling technique was used. One stratum was used for random sampling in Phase II: subsystems. At the conclusion of the Phase I survey, participants were provided an opportunity to identify their willingness to be interviewed as part of the study. Those that affirmed their willingness to be interviewed were placed into two subsystem categories: (1) participants from the technical subsystem (all full-time faculty); and (2) participants from the administrative subsystem (all full-time staff and administrators). Phase II participants were then selected randomly from each category. Two full-time faculty and three full-time staff were selected using stratified random sampling. It was anticipated that this randomized approach would yield a sample representative of the commonalities and differences that exist across the sample (Ary et al., 2002). A randomized approach was used to select participants for interviews until the range of ideas expressed by the subjects had been exhausted and no new information was being acquired, or basically, interviews continued until saturation occurred (Glasser & Strauss, 1967; Strauss & Corbin, 1998; Teddlie & Yu, 2007).

In addition, a purposive sampling approach was used to select ten additional participants for interviews. Purposive sampling allowed for the selection of a sample based on specific criteria and was not random (Kemper et al., 2003; Teddlie & Yu, 2007). For this study, interviews were conducted with subjects who were important players in the implementation of the merit pay system. These key informers included the president, the institution's three vice-presidents, the academic deans, the faculty senate president, and the staff council president. These individuals, because of their leadership roles, had additional insights and perspectives related to the implementation

and adoption of the merit pay system (Yin, 2003). These insights contributed to richer description and understanding related to the adoption of the merit pay system.

To summarize, quantitative data were collected in Phase I of this study from individuals selected using a stratified random sampling technique. Qualitative data were collected in Phase II using stratified sampling and purposive sampling techniques.

*Data Collection*

This mixed method study included both quantitative and qualitative elements to increase the validity and rigor of the study. Phase I data collection focused on quantitative data collection. Phase II focused on qualitative data collection.

*Phase I: Quantitative Data Collection*

Quantitative research is defined as "confirmatory, deductive, structured, closed-ended, controlled, and linear research that results in quantitative data" (Johnson & Turner, 2003, p. 297). In effect, quantitative research utilizes systematic approaches (1) to identify independent and dependent variables related to a phenomenon; (2) to define those variables; (3) to measure quantitatively those variables; and (4) to determine the relationship between those variables using statistical analyses (Ary et al., 2002; Gay, 1987; Patton, 2002). Since the quantitative phase of this study did not manipulate any of the variables of interest, a nonexperimental, ex post facto approach was used to answer the identified research questions.

With regard to data collection instruments, a survey was distributed to 250 full-time employees at Compass Point University. Surveys are a common approach to data collection in quantitative methodology (Ary et al., 2002). The researcher examined the literature and found no survey instruments that singularly measured all the variables of

interest for this study. Survey questions were developed by the researcher and field-tested. Based on the field-test, the survey was modified and was then used to broaden our understanding of how power, coupling, and ambiguity interacted to influence perceived legitimacy of the merit base system and how perceived legitimacy influenced the adoption or rejection of a management innovation. Additional information about the field test is provided later in this chapter.

*Survey instrument.* An Innovation Adoption Survey was developed (see Appendix A). The survey consisted of three sections. The first section collected demographic data regarding gender, age, highest degree earned, years of employment, and subsystem in which individuals were employed (or job classification). The second section, Merit Pay Perceptions, measured the following variables: legitimacy, organizational subsystems, power, coupling, and adoption or rejection of the management innovation. The third section, Administrator Role, primarily measured the perceived use of power by administrators. All survey questions were developed by the researcher.

This anonymous survey was administered to 250 full-time employees at Compass Point University. The survey was developed using SurveyMonkey and distributed in an electronic, web-based format via the email system at Compass Point University. The administration of the survey included three contacts with the study's participants. A paper version of the survey was distributed to 30 individuals who did not have access to email. Table 2 provides a summary of the distribution method.

Table 2

*Summary of Survey Distribution Method*

| Contact | Day | Method | Mode |
|---------|-----|--------|------|
| 1 | 1 | Pre-notice letter | Email |
| 2 | 4 | Survey packet | Email/Web |
| 3 | 7 | Thank-you/reminder | Email |

Table 3 outlines the features that were included in the development and administration of the survey to further enhance completion and return rates (Couper, Traugott, & Lamias, 2001; Dillman, 2007; Fox, Crask, & Kim, 1988).

Table 3

*Survey Development and Administration Features to Increase Return Rates*

| Phase | Feature |
|-------|---------|
| Survey Development | Short entry boxes |
| | Multiple-item screens that group questions tied to the same variable |
| | A graphic indicator on each page demonstrating progress toward completing the survey |
| Survey Administration | Pre-notice letter and email |
| | One thank you/reminder emails |
| | $2 cash incentive distributed with pre-notice letter |
| | A $300 gift certificate awarded to two randomly selected individuals who completed the survey |

The remainder of this section identifies each survey question linked to each research question.

*Research Question 1. Did perceived legitimacy of a management innovation*

*influence individuals (administrators, faculty, and staff) to adopt or reject a*

*management innovation within higher education?*

Perceived legitimacy was the independent variable for Question 1. Legitimacy

was defined as a label assigned by individuals to identify the validity of the merit pay

system. Legitimacy is the result of an evaluative process used by individuals to

determine the alignment of the merit pay system with the internalized norms and values

of individuals (French & Raven, 1959).

The following four questions were used to measure legitimacy.

Survey Question 7.   On my most recent evaluation, I feel my performance was
accurately measured and reflected my actual performance.
1      2      3      4      5
SD     D      N      A      SA

Survey Question 9.   The merit pay system is a fair and objective method to
evaluate my employee job performance at this university.
1      2      3      4      5
SD     D      N      A      SA

Survey Question 12.  On my most recent evaluation, the merit pay system
proved to be a valid approach for evaluating my
performance as an employee.
1      2      3      4      5
SD     D      N      A      SA

Survey Question 18.  The merit pay system is a good fit for me and for the
university or the merit pay system makes sense
1      2      3      4      5
No influence      Significant Influence

For questions 7, 9, and 12, the legitimacy variable was continuously measured

by requesting participants to numerically respond on a Likert scale ranging from $1 - 5$

to a given prompt with 1=strongly disagree, 2=disagree, 3=neutral, 4=agree, and

5=strongly agree. For data analysis, responses to questions 7, 9, and 12 were recoded as

follows: 1 = -2; 2 = -1; 3 = 0, 4 = +1, 5 = +2. For question 18, the legitimacy variable was continuously measured using a Likert scale ranging from 1-5 with 1=no influence and 5=significant influence.

The adoption or rejection of the merit pay system was the dependent variable for Question 1. Adoption was defined as the degree to which individuals within the organization changed behaviors and activities to align with the merit pay system (Rogers, 1995). Rejection was defined as the decision not to adopt an innovation (Rogers, 1995). Adoption or rejection of innovation is the result of an innovation-decision process that includes four stages: (1) knowledge; (2) persuasion; (3) decision; and (4) implementation (Rogers, 1995). Accordingly, the survey included four questions that measured the degree to which individuals completed each stage of the innovation-decision process.

Survey Question 13.   I know and understand how the merit pay system works.
1        2        3        4        5
SD       D        N        A        SA

Survey Question 15.   I have formed a clear opinion (positive or negative) about the potential benefits of the merit pay system to me.
1        2        3        4        5
SD       D        N        A        SA

Survey Question 16.   I plan to change behaviors or activities as an employee to align my job performance with the evaluation criteria of the merit pay system.
1        2        3        4        5
SD       D        N        A        SA

Survey Question 17.   What would you say has been your percent of actual change (from 0% to 100%) in your behavior or activities related to the criteria of the merit pay system.
_____ % of change in actual behavior or activities

For questions 13, 15, and 16, the innovation-decision process variable was continuously measured by requesting participants to respond numerically on a Likert

scale ranging from 1 – 5 to a given prompt with 1=strongly disagree, 2=disagree, 3=neutral, 4=agree, and 5=strongly agree. For data analysis, responses to questions 13, 15, and 16 were recoded as follows: $1 = -2; 2 = -1; 3 = 0, 4 = +1, 5 = +2$. For question 17, the innovation-decision process variable was continuously measured by requesting participant to provide an overall percentage of change. In essence, the innovation-decision process questions identified the degree to which individuals had moved through the innovation-decision process and the degree to which adoption of the merit pay system occurred.

*Research Question 2. Did perceived legitimacy of a management innovation vary based on the organizational subsystem (technical and administrative) in which individuals worked?*

The independent variable for Research Question 2 was organizational subsystem. This categorical variable was measured using two organizational subsystems: the technical subsystem and the administrative subsystem. The technical subsystem included all full-time faculty. The administrative subsystem included all other full-time employees (staff and administrators) at Compass Point University. The technical subsystem was defined as that unit of the organization that converts inputs into outputs. The administrative subsystem was defined as the unit that coordinates and directs the organization. Responses to survey question 5 were binary coded (0=technical subsytem, 1=administrative subsystem).

Survey Question 5.    Please identify your position and the campus unit with which you are most closely affiliated.

❑  Teaching Faculty (not including deans or department chairs).

- ❑ College of Education and Psychology

- ❑ College of Health and Sciences

- ❑ College of Liberal Arts and Social Sciences

- ❑ School of Business

- ❑ Library

❑ Non-Faculty

- ❑ President's Office

- ❑ Academic Affairs

- ❑ Student Development

- ❑ Administration and Finance

- ❑ Advancement and Development

- ❑ Athletics

- ❑ Communications and Marketing

If non-faculty, please select one of the following job classifications.

- ❑ Senior-level administrator (president, vice presidents, associate and assistant vice presidents, dean of students, athletic director, communications and marketing director)

- ❑ Mid-level administrator (all other administrators **who directly supervise full-time employees** including academic deans, academic department chairs, unit directors, program directors, etc.)

- ❑ Professional staff

- ❑ Support staff

Perceived legitimacy was the dependent variable for Research Question 2 and as a variable has been discussed previously in Research Question 1. Data from the survey questions related to this variable in Research Question 1 were used to answer this question.

*Research Question 3: Did perceived use of power by administrators to facilitate the adoption of a management innovation influence how individuals perceived legitimacy of a management innovation?*

Perceived legitimacy was the dependent variable and survey questions to measure legitimacy have been identified previously. Power was the independent variable for Question 3. Power was defined as the capacity of a leader to influence the behavior or activities of a follower. Three types of position power were considered (legitimate, reward, and coercive) and two types of personal power (expert and referent).

The survey included 15 questions to measure power as a continuous variable. Three questions measured the overall use of power, and each power type was measured by at least two questions. For questions 33-42, the power variable was continuously measured by requesting participants to respond numerically on a Likert scale ranging from $1 - 5$ to a given prompt with 1=strongly disagree, 2=disagree, 3=neutral, 4=agree, and 5=strongly agree. For data analysis, responses to these questions were recoded as follows: $1 = -2$; $2 = -1$; $3 = 0$, $4 = +1$, $5 = +2$. For questions 19, 20, 23, 26, and 32, power was continuously measured by requesting participants to respond numerically on a Likert scale ranging from $1 - 5$ where 1=no influence and 5=significant influence.

The balance of this section will restate the definition for each type of power and

will be followed by the corresponding survey questions that were used to measure that

type of power.

General power question

Survey Question 19.   The influence of the president.
    1     2     3     4     5
No influence    Significant influence

Survey Question 20.   The influence of the senior administration.
    1     2     3     4     5
No influence    Significant influence

Survey Question 32.   On a scale of 1 to 5, please rate the extent to which the administrator(s) in your area have influenced your attitudes and behaviors of the merit pay system.
    1     2     3     4     5
No influence    Significant influence

Legitimate power was defined as the capacity of a leader to influence the behavior or

activities of a follower based on the leader's formal authority or position influence over

the follower.

Survey Question 33.   I appreciated the leadership authority of my administrator(s) and followed their leadership.
    1     2     3     4     5
SD    D    N    A    SA

Survey Question 39.   My administrator's position within the organization influenced my attitudes and behavior with regard to the merit pay system.
    1     2     3     4     5
SD    D    N    A    SA

Reward power was defined as the capacity of a leader to influence the behavior or

activities of a follower based on the leader's capacity and willingness to provide

resources and/or awards to the follower.

Survey Question 34.   I knew the administrator(s) would reward a change in my attitude or behavior as related to the merit pay system.

```
1       2       3       4       5
SD      D       N       A       SA
```

Survey Question 40.   I anticipated that incentives would be provided by the administrator(s) if I conformed to their expectation related to the merit pay system.

```
1       2       3       4       5
SD      D       N       A       SA
```

Coercive power was defined as the capacity of a leader to influence the behavior or activities of a follower based on the leader's authority and willingness to impose sanctions or punishments on the follower.

Survey Question 23.   Negative consequences for not changing (i.e., no salary increase, negative comments by peers, negative evaluation by supervisor).

```
1       2       3       4       5
No influence    Significant influence
```

Survey Question 35.   I wanted to avoid any negative consequences that might result from my unwillingness to align my attitudes and behaviors with the expectations of my administrator(s).

```
1       2       3       4       5
SD      D       N       A       SA
```

Survey Question 42.   I thought I might be penalized by my administrator(s) for not following their leadership related to the merit pay system.

```
1       2       3       4       5
SD      D       N       A       SA
```

Referent power – The capacity of a leader to influence the behavior or activities of a follower based on the follower's personal identification and trust with the leader and the fact that the leader will do good deeds for the follower even in the absence of extensive collaboration with the follower.

Survey Question 36.   I trusted my administrator(s) and knew that they would do good things for me if I followed their leadership related to the merit pay system.

```
1       2       3       4       5
SD      D       N       A       SA
```

Survey Question 38.  I did not want to risk the relationship with my administrator(s) and therefore conformed to their expectations with regard to the merit pay system.

  1    2    3    4    5
  SD   D    N    A    SA

Expert power – The capacity of a leader to influence the behavior or activities of a

follower based on the knowledge and/or skills of the leader as perceived by the

follower.

Survey Question 26.  Lack of my supervisor(s)' understanding and knowledge of the merit pay system.

  1    2    3    4    5
  No influence     Significant influence

Survey Question 37.  I knew the administrator(s) had knowledge and expertise with regard to the merit pay system, and I chose to follow their leadership on this issue.

  1    2    3    4    5
  SD   D    N    A    SA

Survey Question 41.  When I have followed the administrator(s)' judgment and experience in the past, I have been pleased with the outcome. Therefore, I followed the administrator(s)' lead on the merit pay system.

  1    2    3    4    5
  SD   D    N    A    SA

*Research Question 4. Did the perceived degree of coupling of a subsystem to a*

*proposed management innovation influence how individuals perceived the*

*legitimacy of a management innovation?*

Perceived legitimacy was the dependent variable and survey questions to

measure legitimacy have been identified previously. Perceived degree of coupling was

the independent variable and was defined as the degree to which individuals within a

subsystem perceived that changes in behavior or activities directly influenced the merit

pay system and thereby achieved the purposes of the merit pay system. For questions 10

and 11, the perceived coupling variable was continuously measured by requesting

participants to respond numerically on a Likert scale ranging from 1 – 5 to a given

prompt with 1=strongly disagree, 2=disagree, 3=neutral, 4=agree, and 5=strongly agree.

For data analysis, responses to these questions were recoded as follows: 1 = -2; 2 = -1; 3

= 0, 4 = +1, 5 = +2. For questions 21 and 22, perceived coupling was continuously

measured by requesting the participants to respond numerically on a Likert scale

ranging from 1 – 5 where 1=no influence and 5=significant influence.

Perceived coupling was measured using the following four questions.

Survey Question 10.   The University's merit pay system provides an incentive
for me to increase my work productivity.
1     2     3     4     5
SD    D    N    A    SA

Survey Question 11.   I feel that if I improve my work performance, I will
receive a corresponding salary increase according to the
way the merit pay systems is supposed to work.
1     2     3     4     5
SD    D    N    A    SA

Survey Question 21.   The opportunity to increase my salary.
1     2     3     4     5
No influence    Significant influence

Survey Question 22.   The opportunity for increased recognition as an employee.
1     2     3     4     5
No influence    Significant influence

*Research Question 5. Did the perceived ambiguity of inputs, processes, and*

*outputs influence how individuals perceived the legitimacy of a management*

*innovation?*

Perceived legitimacy was the dependent variable and survey questions to

measure legitimacy have been identified previously. Ambiguity was the independent

variable and was defined as the degree to which individuals within a subsystem can

clearly identify the inputs, processes, and outputs of the subsystem. For questions 28-

31, the ambiguity variable was continuously measured by requesting participants to

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respond numerically on a Likert scale ranging from 1 – 5 to a given prompt with

1=strongly disagree, 2=disagree, 3=neutral, 4=agree and 5=strongly agree. For data

analysis, responses to these questions were recoded as follows: 1 = -2; 2 = -1; 3 = 0, 4 =

+1, 5 = +2. For questions 24, ambiguity was continuously measured by requesting

participant to respond numerically on a Likert scale ranging from 1 – 5 where 1=no

influence and 5=significant influences. Question 24 was a negative prompt; hence the

rating was transformed by subtracting the response by 6.

The following five questions were used to measure ambiguity.

Survey Question 24.   Lack of employee production benchmarks, or production
benchmarks that are difficult to measure.
1       2       3       4       5
No influence       Significant influence

Survey Question 28.   I can identify the inputs and outputs for my work unit.
1       2       3       4       5
SD      D       N       A       SA

Survey Question 29.   I can measure the inputs and outputs for my work unit.
1       2       3       4       5
SD      D       N       A       SA

Survey Question 30.   I can identify my work outputs related to the merit pay
system.
1       2       3       4       5
SD      D       N       A       SA

Survey Question 31.   I can measure my outputs related to the merit pay system.
1       2       3       4       5
SD      D       N       A       SA

*Research Question 6. Did the factors of power, coupling and ambiguity interact*

*to influence how individuals perceived the legitimacy of a management*

*innovation?*

Data gained from survey items linked to the previous research questions were

used to answer question 6.

*Phase II: Qualitative Data Collection*

Pure qualitative research is defined as "exploratory, inductive, unstructured, open-ended, naturalistic, and free-flowing research that results in qualitative data" (Johnson & Turner, 2002, p. 297). In essence, qualitative research seeks to understand holistically the phenomenon, to understand the context in which the phenomenon occurs, and thus to gain an in-depth understanding of the phenomenon using descriptive data (Ary et al., 2002; Schwandt, 2001; Wallen & Fraenkel, 2001). Within the context of the mixed method study, a second phase qualitative approach provided confirmation and elaboration of Phase I findings (Creswell, 1999, 2003; Morse, 2003).

One data collection technique was used in Phase II: face-to-face interviews. The remainder of this section provides a rationale for the use of interviews for data collection and identifies associated approaches used to conduct the interviews.

*Interviews.* Interviews are valuable sources of data in qualitative research (Johnson & Turner, 2003; Schwandt, 2001; Yin, 2003). For this study, interviews served the confirmation and exploration purposes of Phase II, provided additional in-depth information related to the adoption of the management innovation, and increased validity of the study (Johnson & Turner, 2003).

The researcher utilized a semi-structured interview protocol that contained formal elements. A formal approach ensured the consistent wording and sequencing of questions in alignment with the theoretical framework (Johnson & Turner, 2003; Patton, 2002; Yin, 2003). The open-ended questions within the interview protocol (see Appendix B) allowed subjects to communicate their own opinions and insights about the adoption and rejection of the merit pay system, about the variables of interest and

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about findings from Phase I (Yin, 2003). As noted by Patton (2002), "The truly open-ended question allows the person being interviewed to select from among that person's full repertoire of possible responses those that are more salient" (p. 354). In addition, a set of probing questions were developed to confirm findings linked to the Phase I survey.

<div align="center">*Field-Test*</div>

The survey, interview guide, and data collection procedures were field-tested. The purpose of the field test was (1) to establish content validity of questions contained in the instruments; (2) to improve the clarity of the questions contained in the instrument; (3) to assess the appropriateness and practicality of the study; and (4) to anticipate and resolve any potential problems related to data collection (Ary et al., 2002; Yin, 2001).

Initially, five previous employees at Compass Point University were invited to participate in the field test. These individuals included two faculty and three staff. Each individual received a packet that included an introductory letter and instructions. The packet also included the survey and interview questions. An additional sheet that defined the variables of interest was also included. Each participant was asked to complete the survey and to review the interview questions.

Following the completion of the survey and review of interview questions, the researcher contacted each participant for a debriefing session. In this session, participants were asked to identify survey or interview questions that were confusing or that appeared irrelevant based on their experiences and also to identify additional questions not asked of them. Participants offered no suggested changes to the questions

contained in the interview guide. Responses from the field test participants and discussions with the researcher's dissertation chair led to some minor modifications to the research questions (see Appendix C for complete field test results).

Following these revisions, the survey was distributed to 25 full-time employees at CPU. Of those individuals, 19 completed the survey. A review of responses indicated that these 19 individuals answered 100% of the questions. The high response rate and the absence of any unanswered items led the researcher to conclude that no additional survey modifications were warranted (see Appendix C for complete field test results).

*Data Analysis*

The two-phase, sequential design required that data analysis occur within each phase (Creswell, 1999, 2003). Quantitative data analysis occurred at the end of Phase I. Qualitative data analysis occurred throughout Phase II. Data correlation that integrated analyses from both phases was incorporated throughout Phase II data analysis (Creswell, 1999, 2003; Creswell et al., 2003; Onwuegbuzie & Teddlie, 2003). This section of Chapter III discusses procedures that were used for Phase I and Phase II data analyses.

*Phase I Analysis*

Phase I utilized quantitative data analysis and was guided by the study's six research questions. For each research question, specific statistical procedures were identified.

*Research Question 1.* The first research question examined if perceived legitimacy of a management innovation influenced individuals to adopt or reject a management innovation within higher education. Four survey questions (7, 9, 12, and

18) measured the independent variable, perceived legitimacy, and four survey questions

(13, 15, 16, and 17) measured the dependent variable, adoption or rejection of the

management innovation. Each survey question required a numerical response to a

provided prompt. Responses were coded as previously noted in the instrument section.

Each survey question was treated as a single independent variable (L1, L2, L3, and L4),

and a single dependent variable ($IA^1$, $IA^2$, $IA^3$, and $IA^4$). Surveys with missing data

related to these two variables were not included in the analysis.

Responses to each survey question were used to perform two data analyses.

First, a Pearson *r* analysis was used to analyze the degree to which relationships existed

between the innovation-decision variables ($IA^1$, $IA^2$, $IA^3$, $IA^4$) as a means to examine

the innovation-decision process. Second, a series of multiple regression analyses was

used to examine the collective and separate effect of the Research Question's

independent variables (L1, L2, L3, L4) on the innovation-decision responses ($IA^1$, $IA^2$,

$IA^3$, $IA^4$) while controlling for gender, age, highest degree earned, years of

employment, and subsystem (Lomax 2001, Pedhazur, 1997).

*Research Question 2.* The second research question examined if perceived

legitimacy of a management innovation varied based on the subsystem in which an

individual functioned. Survey Question 5 placed individuals into two groups related to

the independent variable, organizational subsystem. Responses were binary coded

(0=faculty, 1=administrative).

Based on the analysis tied to Research Question 1, two survey questions (9 and

18) measured the dependent variable, perceived legitimacy. Each survey question

required a numerical response (1 – 5) to a provided prompt. Responses were coded as

previously noted in the instrument section. Each response was treated as a dependent variable (L2 and L4). Surveys with missing data related to this variable were not included in the analysis.

Simple regression analysis was used to determine if the organizational subsystem in which an individual worked was a significant predictor of how an individual perceived the legitimacy of the merit pay system. Lomax (2001) and Pedhauzur (1997) indicated that simple regression analysis is an appropriate statistical method for understanding the predictive effect of a single independent variable on a dependent variable.

*Research Question 3.* The third research question sought to understand if perceived use of power by administrators to facilitate the adoption of a management innovation influenced how individuals perceived legitimacy of a management innovation. The independent variable was power. Five types of power were measured by ten survey questions: legitimate power (questions 33 and 39), reward power (questions 34 and 40), coercive power (questions 23, 35, and 42), expert power (questions 26, 37, and 41), and referent power (questions 36 and 38). Each survey statement required a numerical response $(1 - 5)$ to the provided prompt. Responses were coded as previously noted in the instrument section. Each response was treated as a single independent variable (LP1, LP2, RWP1, RWP2, CP1, CP2, CP3, EXP1, EXP2, EXP3, RFP1 and RP2). Surveys with missing data related to this variable were not included in the analysis.

Based on the analysis tied to Research Question 1, two survey questions (9 and 18) measured the dependent variable, perceived legitimacy. Each survey question

required a numerical response (1 – 5) to a provided prompt. Responses were coded as previously noted in the instrument section. Each response was treated as a dependent variable (L2 and L4). Surveys with missing data related to this variable were not included in the analysis.

With regard to data analysis, a series of multiple regression analyses was used to analyze the collective and separate effect of the question's independent variables (LP1, LP2, RWP1, RWP2, CP1, CP2, CP3, EXP1, EXP2, EXP3, RFP1 and RP2) on perceived legitimacy (L2 and L4) while controlling for gender, age, highest degree earned, years of employment, and subsystem (Lomax 2001, Pedhazur, 1997).

*Research Question 4.* The fourth research question sought to know if the perceived degree of coupling of a subsystem to a proposed management innovation influenced how individuals perceived legitimacy of the management innovation.  Four survey questions measured the independent variable, perceived coupling (10, 11, 21, and 22). Each survey statement required a numerical response (1 – 5) to the provided prompt. Responses were coded as previously noted in the instrument section. Each response was treated as a single independent variable (C1, C2, C3, and C4). Surveys with missing data related to this variable were not included in the analysis.

Based on the analysis tied to Research Question 1, two survey questions (9 and 18) measured the dependent variable, perceived legitimacy. Each survey question required a numerical response (1 – 5) to a provided prompt. Responses were coded as previously noted in the instrument section. Each response was treated as a dependent variable (L2 and L4). Surveys with missing data related to this variable were not included in the analysis.

With regard to data analysis, a series of multiple regression analyses was used to analyze the collective and separate effect of the question's independent variables C1, C2, C3, C4) on perceived legitimacy (L2, L4) while controlling for gender, age, highest degree earned, years of employment, and subsystem (Lomax 2001; Pedhazur, 1997).

*Research Question 5.* The fifth research question sought to know if the perceived ambiguity of inputs, processes, and outputs for a subsystem influenced how individuals perceived legitimacy of a management innovation. Five survey questions measured the independent variable, perceived ambiguity (24, 28, 29, 30, and 31). Each survey statement required a numerical response $(1 - 5)$ to the provided prompt. Responses were coded as previously noted in the instrument section. Each response was treated as a single independent variable (A1, A2, A3, A4, and A5). Surveys with missing data related to this variable were not included in the analysis.

Based on the analysis tied to Research Question 1, two survey questions (9 and 18) measured the dependent variable, perceived legitimacy. Each survey question required a numerical response $(1 - 5)$ to a provided prompt. Responses were coded as previously noted in the instrument section. Each response was treated as a dependent variable (L2 and L4). Surveys with missing data related to this variable were not included in the analysis.

With regard to data analysis, a series of multiple regression analyses was used to analyze the collective and separate effect of the question's independent variables (A1, A2, A3, A4, A5) on perceived legitimacy (L2, L4) while controlling for gender, age, highest degree earned, years of employment, and subsystem (Lomax 2001, Pedhazur, 1997).

*Research Question 6.* The sixth research question sought to understand if the factors of power, coupling, and ambiguity interacted to influence how individuals perceived legitimacy of a management innovation. A path analysis was conducted to test the magnitude of intercorrelations among the sets of variables within a hypothesized causal model (Coughlin, 2005; Mertler & Vanatta, 2005; Pedhazur, 1997, Schumacker & Lomax, 2004). The hypothesized causal model emerged from the researcher's critical analysis of the research related to the adoption of management innovations in higher education and from testing the background variables using a series of multiple regression analyses, correlation analyses, and partial correlation analysis (Mertler & Vanatta, 2005; Pendhazur, 1997; Schumacker & Lomax, 2004).

The path analysis required a change in terminology tied to the model's variables. Independent variables were changed to exogenous variables, and dependent variables were changed to endogenous variables (Coughlin, 2005; Mertler & Vannatta, 2005; Pendhazur, 1997; Schumacker & Lomax, 2004). Within a causal model, exogenous variables are connected to endogenous variables with lines ending in arrows, thus identifying paths of causation. Basically, the path analysis used exogenous variables to explain variance of endogenous variables (Coughlin, 2005; Mertler & Vannatta, 2005; Pendhazur, 1997; Schumacker & Lomax, 2004).

The causal model that emerged from the literature was tested using a series of multiple regression analyses. Multiple regression was used to analyze the collective and separate effects of the question's exogenous variables (power, coupling, ambiguity, gender, age, highest degree earned, years of employment, and subsystem) on perceived legitimacy (L2 and L4). A second series of regression analyses was used to analyze the

collective and separate effects of the question's exogenous variables (power, coupling, ambiguity, gender, age, highest degree earned, years of employment, and subsystem) on the innovation adoption process ($IA^1$, $IA^2$, $IA^3$, $IA^4$). The results of these regression analyses were combined with results associated with Research Questions 1-5 to form a hypothesized causal model.

Second, error terms were added to the endogenous variables. Error is an important concept linked to path analysis. Error is used to represent any unexplained variance, or residuals, found in an endogenous variable that may be linked to any exogenous variables not included in the model (Coughlin, 2005; Mertler & Vannatta, 2005; Pendhazur, 1997; Schumacker & Lomax, 2004). Errors are depicted on the causal model as an *"e"* linked to the endogenous variable.

Third, each path was evaluated using correlation and partial correlation analysis (Mertler & Vannatta, 2005; Pendhazur, 1997; Schumacker & Lomax, 2004). A Pearson *r* correlation analysis was used to analyze the degree to which relationships existed between the various variables within the hypothesized model. Relationships found to be significant (p<.05) were retained in the model. Relationships that were not significant (p≥.05) were eliminated from the model. Second, partial correlation analyses were then conducted to determine the strength of each relationship within the model while controlling for all other variables within the model.  Relationships that were significant (p<.05) while controlling for all other variables were retained in the model. Relationships that were not significant (p≥.05) were eliminated from the model.

Next, the goodness-of-fit for the hypothesized model with the observed data was tested. Models with good fit are supported by the variance found within the sample data

while models of poor fit lack this quality. Goodness-of-fit was evaluated using a chi-square statistic, chi-square/degrees of freedom ratio, Root Mean Square Error of Approximation, Normed Fit Index, and Comparative Fit Index (Cohen et al., 2003; Mertler & Vannatta, 2005; Pendhazur, 1997; Schumacker & Lomax, 2004; Wuensch, 2006).

The $\chi^2$ statistic "compares the model implied by the relationships among the empirical variables with the model specified by the investigator" (Cohen et al., 2003, p. 472). In most statistical analysis, high $\chi^2$ values lead to rejection of the null hypothesis. However, in path analysis, a lower $\chi^2$ indicates the model more closely reflects the variance among variables within the observed data (Coughlin, 2005; Cohen et al., 2003; Pedhazur, 1997). Hence, significance of the $\chi^2$ statistic occurs when $p \geq .05$ indicating a good fit between the model and the data.

The determination of goodness-of-fit should not be based solely on the significance of $\chi^2$ given its sensitivity to sample size (Coughlin, 2005; Cohen et al., 2003; Pedhazur, 1997; Schumacker & Lomax, 2004; Wuensch, 2006). As noted by Schumacker & Lomax (2004), "as sample size increases (generally above 200), the $\chi^2$ statistic has a tendency to indicate a significant probability level . . . as sample size decreases (generally below 100), the $\chi^2$ statistic indicates nonsignificant probability levels" (p. 100). Accordingly, goodness-of-fit was also determined by examining the ratio between the $\chi^2$ statistic and the degrees of freedom. A general rule of thumb is that a $\chi^2$:*df* ratio lower than 3:1 or 2:1 supports a good fit (Pedhazur, 1997, Wuensch, 2006). Goodness-of-fit was also evaluated by evaluating the Root Mean Square Error of Approximation (RME), which ranges from 0 (perfect fit) to 1 (no fit at all) (Pedhazur,

1997). A RME<.05 may be considered a good fit (Pedhazur, 1997; Schumacker & Lomax 2004; Wuensch, 2006), and a RME of ≤.08 but >.05 may be considered an adequate fit (Coughlin, 2005; Wuensch, 2006). Lastly, goodness-of-fit was evaluated using the Normed Fit Index (NFI) and Comparative Fit Index (CFI), which yield indices ranging between 0 (no fit at all) to 1 (perfect fit). Values greater than .9 on NFI or CFI indicate a satisfactory or good fit (Coughlin, 2005; Pedhazur, 1997; Wuensch, 2006).

Finally, decomposition of effects was conducted to determine direct, indirect, and total effects of variables within the model. Direct effect is captured when a variable in the model has a direct influence upon another variable (Coughlin, 2005; Cohen et al., 2003; Pedhazur, 1997; Schumacker & Lomax, 2004: Wuensch, 2006). Indirect effects occur when the effects of one variable in the model upon another variable are mediated through third variable (Coughlin, 2005; Cohen et al., 2003; Pedhazur, 1997; Schumacker & Lomax, 2004: Wuensch, 2006). Total effects are the summation of direct and indirect effects (Coughlin, 2005; Cohen et al., 2003; Pedhazur, 1997; Schumacker & Lomax, 2004: Wuensch, 2006). Direct effects are the only paths represented in the causal model.

*Phase II Analysis*

The purpose of Phase II analysis was to confirm, elaborate, and/or explain Phase I findings qualitatively (Creswell, 1999, 2003; Morse, 2003). To accomplish this purpose, Phase II applied qualitative data analysis to 15 transcribed interviews. Specifically, a typology development analysis, or confirmatory thematic analysis, was used (Caracelli & Greene, 1993; Onwuegbuzie & Teddlie, 2003). As noted by Caracelli & Green (1993),

In the typology development mixed-method analysis strategy, the analysis of

one data type considers the homogeneity within and heterogeneity between

subgroupings of data on some dimension of interest, yielding a set of substantive

categories or typology. This typology is then incorporated in the analysis of the

contrasting data type. (p. 198)

Essentially, Phase I quantitative data analysis yielded a typology related to the adoption

or rejection of the merit pay system at Compass Point University. This Phase I typology

provided the theoretical framework for the Phase II qualitative analysis. Beyond the

work of Caracelli and Green (1993), the use of an a priori framework in qualitative

analysis is also supported by others (Caracelli & Greene, 1993; Creswell, 1999, 2003;

Merriam, 1998; Onwuegbuzie & Teddlie, 2003; Schwandt, 2001; Yin, 2003).

The confirmatory analysis included three processes. The first process converted

audio recordings to verbatim transcripts. A researcher-transcriptionist approach that

utilized voice recognition software, and a listen and repeat method was used to create

verbatim transcripts (Matheson, 2007; Park & Zeanah, 2005). Two approaches were

used to minimize transcript errors and increase trustworthiness: (1) the researcher

checked completed transcripts against the original recordings, which also increased the

researcher's familiarity with the data; and (2) three participants were asked to review

transcripts of their interviews and check for accuracy (Matheson, 2007; Park & Zeanah,

2005).

The second process reduced the data collected from the transcribed interviews

(Keeves & Snowden, 1997; Onwuegbuzie & Teddlie, 2003). Data reduction primarily

focused on coding the data. Coding is a procedure that "disaggregates data, breaks it

down into manageable segments, and identifies or names those segments" (Schwandt, 2001, p. 26). Data was coded based on first-order and second-order concepts (Huberman & Miles, 2002) using NVivo software. First-order concepts were identified as those concepts within the data that were linked to the Phase I typology and theoretical statements including confirming and disconfirming statements. The data was then coded based on second-order concepts. Second-order concepts were identified as those characteristics, processes, or themes that further explained first-order concepts. Second-order concepts provided a broader understanding related to the adoption or rejection of the management innovation. Coding occurred following each interview and prior to the subsequent interview.

Third, the coded data was analyzed using an iterative process of explanation building (Keeves & Snowden, 1997; Onwuegbuzie & Teddlie, 2003; Yin, 2003). The purpose of the explanation building process was to "explain the phenomenon" (Yin, 2003, p. 120), or in this study to explain the causal model identified in Phase I. After the initial interview was coded, the model was revised based on the analysis of the initial interview. Following subsequent interviews, data from previous interviews were reviewed and coded in light of any new characteristics, processes, or themes that emerged. This process was repeated and concluded with a more refined and elaborate typology. The iterative process of explanation building (coding, analysis, and revision of the typology) also ensured that Phase I and Phase II analysis were integrated (Caracelli & Green, 1993; Keeves & Snowden, 1997; Onwuegbuzie & Teddlie, 2003). In essence, Phase II culminated with a holistic integration of multiple data sources associated with the mixed-method design.

*Validity, Trustworthiness, and Inference*

Onwuegbuzie and Johnson (2006) recommended that validity, trustworthiness, and inference as related to mixed method research "be seen as a continuous process rather than as a fixed attribute of a specific research study" (p.56). Creswell (2003) and Teddlie and Tashakkori (2003) advocated that processes to ensure validity be incorporated into both quantitative and qualitative phases of a mixed method study. Accordingly, the study incorporated procedures within each phase of the study to increase validity, trustworthiness, and inference.

*Quantitative validity.* As many as 50 different threats to validity of quantitative studies have been identified (Onwuegbuzie & Johnson, 2006). Shadish, Cook, and Campbell (2002) and Creswell (2003) synthesized these threats into four types: internal validity, external validity, statistical conclusion validity, and construct validity.

Threats to internal validity were not of significant concern to this study given the nonexperimental, ex post facto design used in Phase I.

Threats to external validity refer to generalization of findings "beyond the groups in the experiment to other racial or social groups" (Creswell, 2003, p. 171). To minimize this threat, the study included (1) a limitations section that warned against generalization beyond the context of the study; and (2) a detailed description of the study's setting so that readers would broader understanding related to the context of the study.

As noted by Creswell (2003) "threats to statistical conclusion validity arise when experimenters draw inaccurate inferences from the data because of inadequate statistical power or violation of statistical assumptions" (p. 171). For this study, the

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following procedures were incorporated to increase statistical conclusion validity: (1) sampling procedures were used to increase power; (2) power statistics were analyzed and discussed; (3) statistical assumptions were tested and discussed, and where violations occurred, additional discussions of the violation were included.

Construct validity focuses on the accuracy of definitions and measures associated with the study's identified variables (Ary et al., 2002; Creswell, 2003). Threats to construct validity were minimized by (1) sound logic rooted in literature to define variables; (2) survey items linked to published literature, to the extent possible and where appropriate; (3) an external review of the survey instrument.

*Qualitative trustworthiness.* Qualitative researchers often prefer to use the term *trustworthiness* over the term *validity* (Creswell, 2003; Lincoln & Guba, 1985, 1990; Schwandt, 2001) to "capture authentically the lived experiences of people" (Onwuegbuzie & Johnson, 2006, p. 49). In *Naturalistic Inquiry*, Lincoln and Guba (1985) identified four criteria associated with trustworthiness: credibility (the degree to which researchers' representations reflect subjects' views); transferability (generalization); dependability (the degree to which researchers' processes are substantiated); and confirmability (linkages of findings to data).

Overall, the greatest threat to trustworthiness was credibility and dependability. The threat was specifically linked to the participant observer role assumed by the researcher. The role of a qualitative researcher exists on a continuum between participant and observer. It is never possible for a researcher to only be a participant or an observer (Coffey, 1999; Mason, 2002). The qualitative researcher is always a participant observer, and in the participant role, it is nearly impossible to control how

individuals in the study will react to the researcher as participant (Mason, 2002).

Therefore, this study identified specific strategies to minimize threats linked to the

participant observer role (Coffey, 1999; Mason, 2002; Sanchez-Jankowski, 2002;

Huberman & Miles, 2002).

First, the researcher's role, experiences, and biases were identified (Lincoln and

Guba, 1985, 1990; Schwartz & Schwartz, 1955). The researcher's *participant role*, at

the time of the study, was one of administrator within the sponsored programs and

research office at CPU. The researcher had served in this capacity for ten years and had

also earned two degrees from CPU. The researcher did not supervise, directly or

indirectly, any individuals interviewed as part of this study, and the researcher did not

play a significant role in the implementation of the management innovation. Hence, the

researcher had no vested interest in the outcome of this study. With regard to

*experiences*, the researcher had coordinated the implementation of several management,

technology, and instructional innovations prior to this study. These innovations

occurred within a variety of university and public school settings. Finally, the researcher

identified the following personal *biases* related to this study: (1) the researcher tends to

view the world through from the lens of a white, middle-class, middle-aged male who

was a first-generation high school and college graduate that grew up in very humble

conditions; (2) because of the researcher's long relationship with the institution and

with individuals at the institution, the researcher entered the study with the belief that he

would not be seen as an outsider and that individuals would demonstrate trust in the

social contract between the researcher and respondents to the point that answers

provided in the interviews would reflect who they were as individuals within the

context of the phenomena being studied and that answers would accurately represent events discussed by the individuals; and (3) the researcher entered Phase II of the study with the belief that the results of the quantitative section were valid and provided a potential framework to understand the perceived legitimacy of management innovations and the subsequent adoption of those innovations within higher education. In summary, the researcher continually reminded himself of these articulated roles, experiences, and biases throughout the qualitative data collection and analysis portions of this study as a means to ensure that conclusions accurately reflected the individuals and events contained within the data and to ensure that conclusions were minimally influenced by the roles, experiences, and biases of the researcher.

Additionally, the researcher developed strategies to address three additional threats to credibility and dependability posed by the participant observer role as identified by Sanchez-Jankowski (2002). First, Sanchez-Jankowski noted that the participant observer may have difficulty understanding the authentic representation of individuals and events. Specifically for this study, the participant observer role had the potential to affect how interviewees responded to interview questions to the point that responses to questions might not accurately represent the individual's true person or the individual's true perceptions of events. This threat was minimized by (1) providing participants with an opportunity to not participate in the study; (2) ensuring that participants were familiar with the interviewer in order to establish the trust needed to reinforce the social contract of anonymity agreed to by the researcher and the interviewee; (3) selecting participants who were not supervised, directly or indirectly,

by the researcher; and (4) collecting only interview data so as to minimize interaction between the researcher and participant.

Second, Sanchez-Jankowski (2002) suggested that the role of participant observer was a potential threat to credibility and dependability due to the biases and experiences of the researcher. Sanchez-Jankowski contended that these biases and experiences not only influence what is seen and not seen, but how it is seen. This threat was minimized by (1) selecting participants using purposeful and stratified random techniques to ensure diversity of perspectives were included in the data; (2) using verbatim transcripts as the only source for qualitative data collection and analysis; (3) coding data using first-order and second-order concepts with first-order concepts linked specifically to the conceptual framework resulting from quantitative analysis; (4) identifying the researcher's role, experiences, and biases and continually considering each of these while transcribing, coding, and analyzing data; and (5) journaling throughout the data analysis process as a means to minimize participant observer influence and to assess if the coded data supported conclusions.

Finally, Sanchez-Jankowski (2002) noted that the participant observer role may influence the meaning, or conclusions, that are derived from the data. Sanchez-Jankowski suggested that it was potentially difficult for the participant observer to accurately understand the interviewee's understandings of reality given the participant observers experiences with the same events. This threat was minimized by: (1) trying to consistently increase understanding of interviewee's responses through questioning techniques and reflection; (2) presenting thick, rich descriptions of the interview data for readers to review and draw conclusions; (3) discussing positive and negative aspects

of events and anonymous individuals within the data and conclusions; (4) securing

external review of qualitative data analysis and conclusions by two qualitative

researchers at CPU.

While the role of participant observer certainly presented a potential threat, the

role of participant observer also increased trustworthiness. First, the researcher had

extensive experiences in a variety of educational systems involved in the

implementation. This experiential knowledge tied to the environment decreased the

probability of a Type I or Type II error (Sanchez-Jankowski, 2002). Additionally,

familiarity with the environment, allowed the participant observer to recognize

important contextual conditions and cues that were important to answering the research

questions (Sanchez-Jankowski, 2002). Additionally, familiarity with the environment

and the events prior to the study allowed the participant observer to consciously

reconstruct events and assess the representation of events contained within the data

while also assessing the degree to which researcher bias was contributing to data

analysis and conclusions. In short, the participant observer role contributed to the

trustworthiness of the study.

In addition, strategies primarily used to increase the general trustworthiness of

this study included: (1) the integration of findings from multiple data sources; (2) the

use of thick, rich descriptions to facilitate a shared experience with the reader; (3)

disclosure of the researcher's biases; (4) prolonged time in the field primarily due to the

researcher being a participant observer; (5) use of two peer debriefers at the conclusion

of Phase II analysis to enhance accuracy of interpretations and findings – the peer

debriefers were qualitative researchers who worked at CPU during the implementation

of the management innovation; (6) discussion of negative or discrepant information when it appeared in the data.

To summarize, threats to the trustworthiness of this study were identified. The researcher's role as participant observer was identified as the greatest threat, and in response, the study incorporated specific strategies to minimize the identified threats. The role as participant observer also increased the general trustworthiness of the study and worked in tandem with other strategies to augment the overall trustworthiness of this study.

*Mixed method inference.* The term *inference* has been used to describe validity within the context of mixed methods research (Onwuegbuzie & Johnson, 2006; Teddlie & Tashakkori, 2003). Specifically, Teddlie & Tashakkori (2003) noted inference was the "mixed methodology equivalent of validity" (p. 12). Inference within the context of mixed methods has two qualities: data quality and inference quality (Onwuegbuzie & Johnson, 2006; Teddlie & Tashakkori, 2003)

Data quality, as noted by Teddlie and Tashakkori (2003), is driven by the following principle, "If the data do not represent the theoretical phenomena or the attributes under study, then nothing else in the design of the study maters" (p. 39). In essence, data quality is associated with the data collection methods of the study. The data collection procedures highlighted in this chapter ensured data quality.

Inference quality includes two components: design quality and interpretive rigor (Onwuegbuzie & Johnson, 2006; Teddlie & Tashakkori, 2003). Design quality is based on the "methodological rigor of the mixed research study" (Onwuegbuzie & Johnson, 2006, p. 55), and is ensured by methods that are rigorous and consistent with research

standards (Onwuegbuzie & Johnson, 2006; Teddlie & Tashakkori, 2003). The data collection procedures highlighted in this chapter demonstrate rigor and standards that are consistent with those standards highlighted in the literature.

Interpretive rigor applies to the "standards for evaluating the validity of conclusions" (Onwuegbuzie & Johnson, 2006, p. 55), or as stated by Teddlie and Tashakkori (2003), interpretive rigor "might be described as a process whereby the accuracy, or authenticity, of our conclusions/interpretation is assessed" (p.37). Essentially, interpretive rigor is concerned about authenticity of processes used in a study to facilitate conclusions. Teddlie and Tashakkori (2003) identified four criteria to help evaluate interpretive rigor: within-design consistency (consistency of the study's design from which inferences emerge); conceptual consistency (consistency of the study's inferences with each other and with current theory); interpretive agreement (consistency of inferences with inferences drawn by participants' and other researchers); and interpretive distinctiveness (inferences are distinctive and alternatives eliminated). The two-phase, mixed method, sequential explanatory research design outlined in this chapter primarily incorporated within-design consistency, conceptual consistency, and interpretive agreement to increase interpretive rigor. Onwuegbuzie and Johnson (2006) noted the sequential mixed method design provides the "highest level of integration" (p53).

In summary, the research design incorporated specific elements to minimize threats to validity, trustworthiness, and inference associated with this study.

*Limitations of the Study*

The study sought to further understand how the factors of power, coupling, ambiguity, and subsystems interacted to influence the perceived legitimacy of a management innovation within an institution of higher education. The researcher attempted to integrate several complex theories associated with this phenomenon. From this perspective, the study was an exploration of Birnbaum's (2001) theory related to the adoption of management innovations within the complexities of a higher education organization. As such, the study led to the further refinement of existing theory. Causation related to the study will be limited, and measurement issues of complicated constructs may occur.

A mixed method approach was used to examine this phenomenon within a single institution of higher education. While the researcher and the reader may gain many particular insights into adoption of the merit pay system at Compass Point University, "grand generalization" may be limited (Stake, 1995, p. 7).

Due to the originality of the survey instrument used and issues related to the measurement of complex constructs, reliability and validity may be of concern. The survey was field tested; however, the use of the instrument outside of the specific context related to this study should be approached with caution.

The role of the researcher as participant observer is also identified as a potential limitation to this study. While an anonymous survey was used to collect data in Phase I and should not be impacted too greatly by the researcher as participant observer, the responses of individuals in the face-to-face interviews associated with Phase II may have been influenced by the existing relationship between the interviewer and the

interviewee. Answers provided by participants may not accurately reflect the actual situation.

Additionally, participant responses may have been inaccurate due to the complexity of the phenomenon being explored. Participants may have been unfamiliar with the vernacular associated with the theoretical framework. Even when participants were familiar with the vernacular, a given word may have had different and even conflicting meanings among participants.

The results of Phase I and Phase II analyses are presented in Chapter IV.

CHAPTER IV

*Overview*

Chapter IV highlights the results of data analysis used to answer the study's six research questions consistent with the purpose of this study. The chapter will provide information concerning (1) Phase I survey respondents and data analysis; and (2) Phase II participants and data analysis.

*Phase I Quantitative Data Analysis*

*Phase I Respondents*

In Phase I, surveys were distributed to 250 full-time employees at Compass Point University. Web-based surveys were distributed to 220 employees via email, and 30 paper copies were distributed by mail. From the request, 205 individuals responded: 190 web-based responses and 15 mailed responses. Of those individuals responding, 14 individuals using the web-based survey only provided demographic information and were not included in the analysis. In short, 191 respondents (76%) substantially completed the survey and were included in the data analysis.

With regard to the representativeness of the respondents, Table 4 illustrates that the respondents were representative of the sample and the larger population.

Table 4

*Representativeness of Sample and Respondents*

| Category | Population | | Sample | | Respondents | |
|---|---|---|---|---|---|---|
| | *n* | *%* | *n* | *%* | *n* | *%* |
| Subsystem | | | | | | |
| Technical | 146 | 34 | 85 | 34 | 81 | 42 |
| Administrative | 284 | 66 | 165 | 66 | 110 | 58 |
| Total | 430 | 100 | 250 | 100 | 191 | 100 |
| Gender | | | | | | |
| Female | 237 | 54 | 141 | 43 | 107 | 42 |
| Male | 203 | 46 | 106 | 57 | 84 | 58 |
| Total | 430 | 100 | 250 | 100 | 191 | 100 |
| Years of Employment (Mean) | | | | | | |
| | 9.6 | | 9.4 | | 10.1 | |

In addition, some respondents did not respond to one or more of the survey items. Missing data were infrequent and random. In general and as will be discussed in the next section, survey items with missing data were not included in data analysis.

*Phase I Quantitative Results*

The purpose of this analysis was to broaden our understanding of how power, coupling, ambiguity, and subsystems influenced the perceived legitimacy and subsequent adoption or rejection of the merit pay system at Compass Point University. The results of this analysis will be discussed within the context of the study's six research questions.

*Research Question 1. Did the perceived legitimacy of a management innovation influence individuals (administrators, faculty, and staff) to adopt or reject the management innovation?*

An initial analysis investigated the degree to which the innovation-decision process model was supported by the data. Specifically, analysis examined whether there was a significant correlation between $IA^1$ ($\bar{x} = .71$, $s = 1.08$), $IA^2$ ($\bar{x} = 1.01$, $s = .83$), $IA^3$ ($\bar{x} = -.38$, $s = 1.038$) and $IA^4$ ($\bar{x} = 14.48$, $s = 21.50$) for the sample ($n = 184$). As the analysis involved examining linear relationships between quantitative variables, a two-tailed Pearson $r$ correlation coefficient was computed. The analyses indicated significant ($p < .05$) relationships existed between $IA^1$ and $IA^2$ ($r = .284$, $p<.0005$), $IA^2$ and $IA^3$ ($r = -.186$, $p=.012$), and $IA^3$ and $IA^4$ ($r = .386$, $p<.0005$). These relationships remained significant ($p <.05$) when using partial correlation analysis to control for the effects of the other relationships among the innovation-decision process variables.

A series of regression analyses were then used to further examine these relationships. In the first analysis, $IA^4$ was identified as the dependent variable with $IA^1$, $IA^2$, and $IA^3$ identified as independent variables. Cohen, Cohen, West, and Aiken (2003) indicated that effect size in multiple regression may be discussed in terms of small, medium, and large effects with corresponding $R^2$ thresholds .02, .13, and .26. Using the stepwise method, $IA^3$ was identified in the model as having a medium effect ($R^2=.149$) on the variance in $IA^4$ and indicated $IA^3$ was a significant predictor of $IA^4$ ($F_{1,182}=31.905$, $p < .0005$,). No other independent variables were included in the model. Significance was further supported by a regression coefficient for the sample ($\beta=8.0$) that fell within the 95% CI (5.205, 10.795) for the actual population. In addition, the

95% CI did not include zero indicating that the observed value of $B$ differed significantly from zero (p<.05).

In the second analysis, $IA^3$ was identified as the dependent variable with $IA^1$ and $IA^2$ identified as independent variables. Using the stepwise method, $IA^2$ was identified in the model as having a small effect ($R^2$=.034) on the variance in $IA^3$ and indicated $IA^2$ was a significant predictor of $IA^3$ ($F_{1,182}$=6.494, $p$ =.012). No other independent variables were included in the model. Significance was further supported by a regression coefficient for the sample ($B$=-.232) that fell within the 95% CI (-.412, -.052) for the actual population. In addition the 95% CI did not include zero indicating that the observed value of $B$ differed significantly from zero (p<.05).

In the final analysis, $IA^2$ was identified as the dependent variable and $IA^1$ as the independent variable. $IA^1$ had a small effect ($R^2$=.106) on the variance in $IA^2$ and indicated $IA^1$ was a significant predictor of $IA^2$ ($F_{1,186}$=22.082, $p$ < .0005). Significance was further supported by a regression coefficient for the sample ($B$=.252) that fell within the 95% CI (.146, .358) for the actual population. In addition, the 95% CI did not include zero indicating that the observed value of $B$ differed significantly from zero (p<.05).

In general, the correlation, partial correlation, and multiple regression analyses were supportive of the innovation-decision process model: $IA^1 \rightarrow IA^2 \rightarrow IA^3 \rightarrow IA^4$.

Therefore, a series of four regression analyses was conducted to examine the degree to which perceived legitimacy influenced the innovation-decision process variables ($IA^1$, $IA^2$, $IA^3$, and $IA^{4)}$. In the first analysis, $IA^4$ was identified as the dependent variable. The independent variables included four measures of legitimacy

that were linked to survey questions (L1, L2, L3, L4), age, gender, position, degree type, years of employment, $IA^1$, $IA^2$, and $IA^3$. Using the stepwise method, a significant model emerged ($F_{3,158}=13.770$, $p < .0005$, $R^2=.207$). The significance of each variable within the model was further supported by regression coefficients that fell within the 95% CI and that did not include zero. Significant variables are shown in Table 5.

The second regression analysis identified $IA^3$ as the dependent variable. The independent variables included L1, L2, L3, L4, age, gender, position, degree type, years of employment, $IA^1$, and $IA^2$. Using the stepwise method, a significant model emerged ($F_{3,158}=20.995$, $p < .0005$, $R^2=.285$). The significance of each variable within the model was further supported by regression coefficients that fell within the 95% CI and that did not include zero. Significant variables are shown in Table 5.

In the third regression analysis, $IA^2$ was the dependent variable. The independent variables included L1, L2, L3, L4, age, gender, position, degree type, years of employment, and $IA^1$. Using the stepwise method, a significant model emerged ($F_{4,159}=9.007$, $p < .0005$, $R^2=.185$). The significance of each variable within the model was further supported by regression coefficients that fell within the 95% CI and that did not include zero. Significant variables are shown in Table 5.

In the final regression analysis, $IA^1$ was the dependent variable. The independent variables included L1, L2, L3, L4, age, gender, position, degree type, and years of employment. Using the stepwise method, a significant model emerged ($F_{1,164}=18.603$, $p < .0005$, $R^2=.102$). The significance of each variable within the model was further supported by regression coefficients that fell within the 95% CI and that did not include zero. Significant variables are shown in Table 5.

Table 5

*Summary of Stepwise Multiple Regression Analysis of Legitimacy on the Adoption of a Management Innovation*

| Dependent Variable | Predictor Variable | B | 95% CI | P |
|---|---|---|---|---|
| $IA^4$ | $IA^3$ | 5.396 | 2.131, 8.662 | *p=.001* |
| | L4 | 4.604 | 1.711, 7.497 | *p=.002* |
| | $IA^1$ | -3.165 | -6.165, -.165 | *p=.039* |
| $IA^3$ | L4 | .348 | .225, .471 | *p<.0005* |
| | $IA^2$ | -.203 | -.379, -.027 | *p=.024* |
| | L2 | .163 | *.025, .302* | *p=.021* |
| $IA^2$ | Years of employment | .015 | .003, .028 | *p=.016* |
| | $IA^1$ | .244 | .127, .361 | *p<.0005* |
| | L2 | -.177 | -.289, .064 | *p=.002* |
| | Gender | .245 | .012, .477 | *p=.040* |
| $IA^1$ | L2 | .299 | .162, .436 | *p<.0005* |

To summarize, data analysis related to the first research question confirmed that the innovation decision process followed a linear path that began with knowledge and understanding of the innovation ($IA^1$), which lead to opinion formation and clarity of benefit ($IA^2$), then to planned change in behaviors or activities ($IA^3$), and ended with actual change of behavior ($IA^4$). The analysis further indicated that perceived legitimacy of the innovation, as measured by L2 and L4, were predictors of innovation adoption, and that perceived legitimacy, to some degree, was influenced by years of employment and gender. In effect, the analysis confirmed that an increase in perceived legitimacy of the management innovation lead to increased adoption of the innovation. Figure 3

provides an overview of the model that emerged from analyses associated with

Research Question 1.

*Figure 3.* Emerging model reflecting the relationship between legitimacy and the innovation-decision process
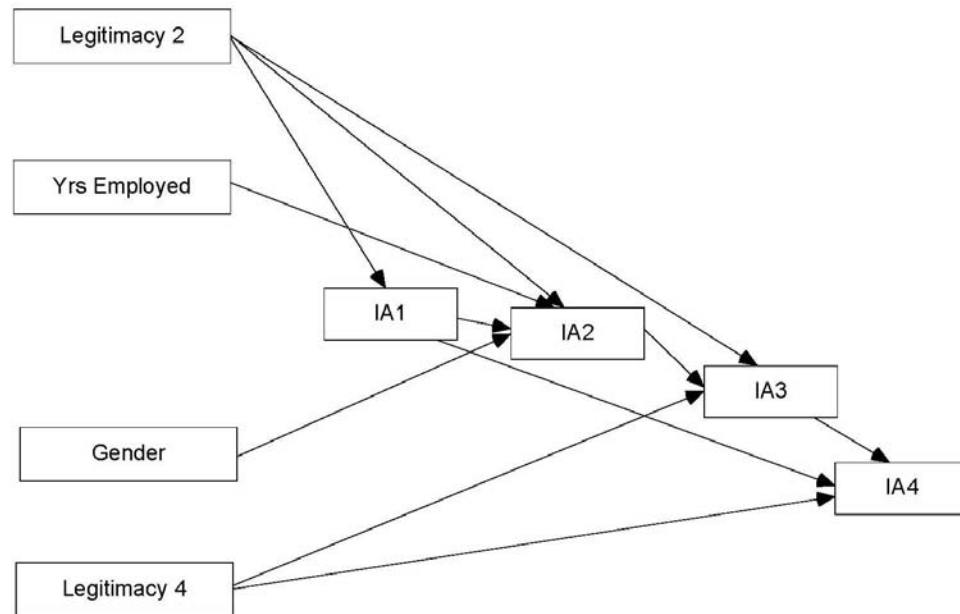


*Research Question 2: Did perceived legitimacy of a management innovation*

*vary based on the organizational subsystem (technical and administrative) in*

*which individuals work?*

A series of simple regression analyses was used to determine the extent to which

position influenced legitimacy as measured by L2 and L4. In the first analysis, L2 was

the dependent variable and position was the independent variable. The stepwise method

indicated that position did account for a small amount of variation in L2 ($R^2$=.036), and

the analysis also indicated that position was a significant predictor of L2 ($F_{1,187}$=6.969,

*p* = .009, *B*=.423). Significance was further supported by a regression coefficient for the

sample (*B*=.423) that fell within the 95% CI (.107, .739) for the actual population. In

addition, the 95% CI did not include zero indicating that the observed value of *B*

differed significantly from zero (p<.05). In short, the analysis indicated individuals from the administrative subsystem, or nonfaculty, perceived the legitimacy of the innovation at slightly higher levels than faculty.

In the second analysis, L4 became the dependent variable and position remained the independent variable. The analysis yielded no significant results. In short, analyses related to the second research question were conflicting, but generally indicated that an individual's position within the institution may predict how that individual perceived legitimacy.

*Research Question 3. Did perceived use of power by administrators to facilitate the adoption of a management innovation influence how individuals perceived legitimacy of a management innovation?*

Two multiple regression analyses were used to determine the extent to which perceived use of power by administrators influenced perceptions of legitimacy as measured by L2 and L4. Five types of power were identified as independent variables and included in each analysis: legitimate power (LP1, LP2); reward power (RWP1, RWP2); coercive power (CP1, CP2, CP3); referent power (RFP1, RFP2); and expert power (EXP1, EXP2). Age, gender, position, degree type, and years of employment were also included as independent variables in each of the analysis.

In the first regression analysis, L2 was identified as the dependent variable. The stepwise analysis yielded a significant model ($F_{6,106}=11.119$, $p < .0005$, $R^2=.386$) Significant variables included in the model are shown in Table 6. In the second regression analysis, L4 became the dependent variable, and the stepwise analysis yielded a significant model ($F_{3,109}=13.002$, $p < .0005$, $R^2=.264$). The significance of

each variable included in the two models was further supported by regression

coefficients that fell within the 95% CI and that did not include zero. Significant

variables are shown in Table 6.

Table 6

*Summary of Stepwise Multiple Regression Analysis of Power on the Perceived*
*Legitimacy of a Management Innovation*

| Dependent Variable | Predictor Variable | Beta | 95%CI | P |
|---|---|---|---|---|
| L2 | RFP1 | .428 | .220,.636 | p<.0005 |
| | CP2 | -.364 | -.521, -.207 | p<.0005 |
| | Yrs of Emp | -.028 | -.047, -.008 | p=.005 |
| | RWP1 | .292 | .097, .486 | p=.004 |
| | LP1 | -.246 | -.443, -.048 | p=.015 |
| | EXP1 | -.148 | -.291, -.006 | p=.042 |
| L4 | CP1 | .395 | .246, .545 | p<.0005 |
| | CP2 | -.287 | -.472, -.103 | p=.003 |
| | LP2 | .186 | -.002,.369 | p=.047 |

Overall, the analysis indicated that the perceived use of coercive, reward,

legitimate, and expert power by administrators to influence the adoption of a

management innovation may possibly predict the degree to which individuals perceived

the legitimacy of the management innovation. The analysis also indicated that years of

employment contributed to perceived legitimacy, and more specifically, an increase in

years of continuous employment led to decreased legitimacy.

*Research Question 4. Did the perceived degree of coupling of a subsystem to a*

*proposed management innovation influence how individuals perceived the*

*legitimacy of a management innovation?*

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A series of two multiple regression analyses was conducted to examine the

degree to which coupling influenced the legitimacy of a management innovation as

measured by L2 and L4. In the first analysis, L2 was identified as the dependent

variable. The independent variables included four measures of coupling that were linked

to survey questions (C1, C2, C3, C4), age, gender, position, degree type, and years of

employment. Using the stepwise method, C1 was found to account for a large amount

of variation in L2 ($R^2$=.313) and was a significant predictor of L2 ($F_{1,171}$=77.922, p

=<.0005, B=.545). In the second analysis, L4 was identified as the dependent variable

and the independent variables remained the same. Using the stepwise method, a

significant model emerged ($F_{3,137}$=44.690, p < .0005, $R^2$=.445). The significance of

each variable within the two models was further supported by regression coefficients

that fell within the 95% CI and that did not include zero. Significant variables are

shown in Table 7.

Table 7

*Summary of Stepwise Multiple Regression Analysis of Coupling on the Perceived Legitimacy of a Management Innovation*

| Dependent Variable | Predictor Variable | Beta | 95%CI | P |
|---|---|---|---|---|
| L2 | C1 | .545 | .423, .666 | p<.0005 |
| L4 | C3 | .404 | .302, .505 | p<.0005 |
| | C1 | .310 | .175, .445 | p<.0005 |
| | Degree | .364 | .063, .664 | p<.0005 |

In general, the analyses indicated that legitimacy increased as individuals

perceived greater coupling of the subsystem to the innovation, and to a lesser extent,

legitimacy increased for individuals who had earned a master's degree or higher.

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*Research Question 5. Does the perceived ambiguity of inputs, processes, and outputs influence how individuals perceive the legitimacy of a management innovation?*

Two multiple regression analyses were conducted to examine the degree to which perceived ambiguity of inputs, processes, and outputs influenced how individuals perceived the legitimacy of a management innovation as measured by L2 and L4. In the first analysis, L2 was identified as the dependent variable. The independent variables included five measures of ambiguity that were linked to survey questions (A1, A2, A3, A4, A5), age, gender, position, degree type, and years of employment. Using the stepwise method, a significant model emerged ($F_{2,114}$=52.452, $p < .0005$, $R^2$=.479). In the second analysis, L4 was identified as the dependent variable and the independent variables remained the same. Using the stepwise method, a significant model emerged ($F_{2,114}$=15.585, $p < .0005$, $R^2$=.215). The significance of each variable within the two models was further supported by regression coefficients that fell within the 95% CI and that did not include zero. Significant variables for both models are shown in Table 8.

Table 8

*Summary of Stepwise Multiple Regression Analysis of Ambiguity on the Perceived Legitimacy of a Management Innovation*

| Dependent Variable | Predictor Variable | B | 95%CI | P |
|---|---|---|---|---|
| L2 | A4 | .491 | .301,.681 | p<.0005 |
| | A5 | .245 | .055,.435 | p=.012 |
| L4 | A1 | -.285 | -.411,-.159 | p<.0005 |
| | A4 | .358 | .176,.540 | p<.0005 |

In general, the analyses indicated that increased clarity of inputs, processes, and outputs may be a predictor of increased legitimacy of the management innovation. The $R^2$ statistics for the models were .215 and .479 indicating that the model had a moderate to large effect on the variation found in perceived legitimacy of the management innovation.

*Research Question 6. Did the factors of power, coupling, and ambiguity interact to influence how individuals perceived the legitimacy of a management innovation?*

Multiple regression analysis, correlation analysis, partial correlation analysis, and path analysis were utilized to develop a predictive model that explained how the factors of power, coupling, and ambiguity interact to influence perceived legitimacy of a management innovation which in turn influences the adoption of the management innovation.

First, a series of multiple regression analyses were utilized to determine the collective and separate effects of power, coupling, and ambiguity on perceived legitimacy after controlling for age, gender, position, degree type, and years of employment. In the first analysis, L2 was identified as the dependent variable. The independent variables included: legitimate power (LP1, LP2); reward power (RWP1, RWP2); coercive power (CP1, CP2, CP3); referent power (RFP1, RFP2); expert power (EXP1, EXP2); general power (GP1, GP2, GP3); coupling (C1, C2, C3, C4); ambiguity (A1, A2, A3, A4); age; gender; position; degree type; and years of employment. Using the stepwise method, a significant model emerged ($F_{8,72}$=19.552, $p$ < .0005, $R^2$=.685). In the second analysis, L4 was identified as the dependent variable. Using the stepwise

method, a significant model emerged ($F_{4,76}=23.548$, $p < .0005$, $R^2=.553$). Significant

variables are shown in Table 9.

Table 9

*Summary of Stepwise Multiple Regression Analysis on Power, Coupling, and Ambiguity on Legitimacy of a Management Innovation*

| Dependent Variable | Predictor Variable | B | 95%CI | P |
|---|---|---|---|---|
| L2 | A4 | .405 | .250,.560 | p<.0005 |
| | RFP1 | .442 | .266,.619 | p<.0005 |
| | C1 | .178 | .014,.341 | p=.033 |
| | CP2 | -.195 | -.331,-.059 | p=.005 |
| | LP1 | -.276 | -.437,-.114 | p=.001 |
| | Position | .376 | .073,.678 | p=.016 |
| | C4 | .152 | .050,.253 | p=.004 |
| | A3 | .175 | .033,.317 | p=.016 |
| L4 | C3 | .378 | .233,.523 | p<.0005 |
| | C1 | .352 | .151,.552 | p=.001 |
| | CP2 | -.284 | -.467,-.100 | p=.003 |
| | CP1 | .214 | .048,.380 | p=.012 |

In general, the two analyses appeared to indicate that referent power (RFP1),

coercive power (CP1, CP2), legitimate power (LP1), coupling (C1, C3, C4), ambiguity

(A3, A4), and position are significant predictors of perceived legitimacy. In essence, the

analysis confirmed power, coupling, and ambiguity interact to increase the perceived

legitimacy of the management innovation. Figure 4 provides an overview of the model

that continued to evolve after this series of analysis.

*Figure 4.* Emerging model reflecting the relationship between power, ambiguity, coupling, legitimacy and the innovation-decision process.
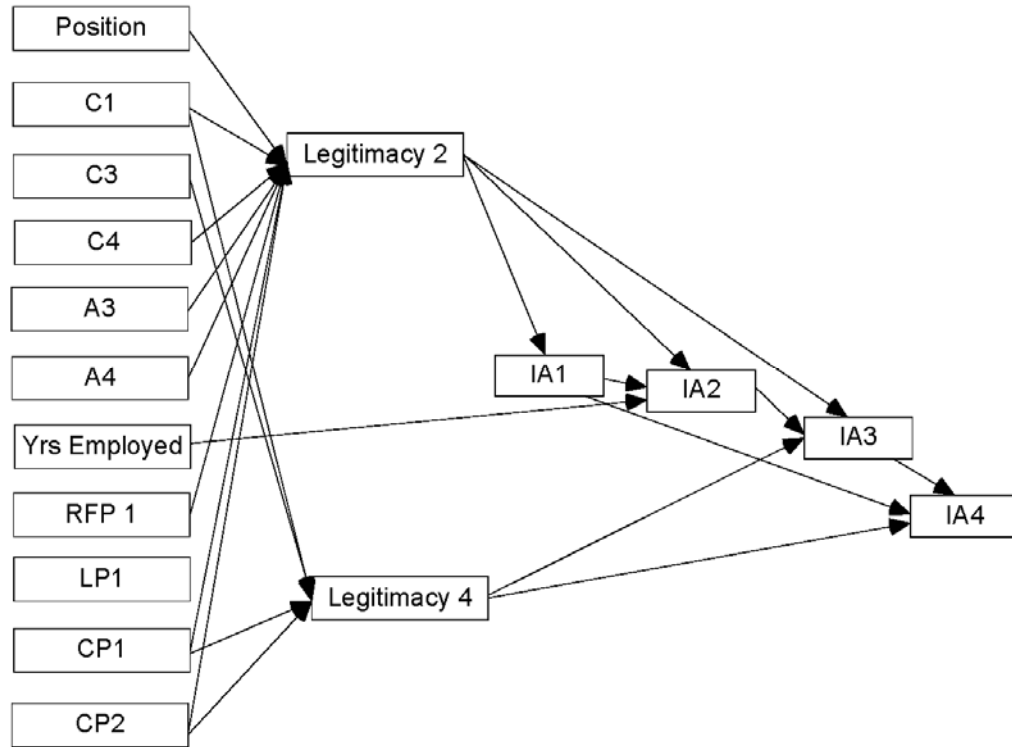


To further refine the model, multiple regression analyses were utilized to determine the extent to which power, coupling, and ambiguity interact to influence the innovation-adoption process ($IA^1$, $IA^2$, $IA^3$, $IA^4$). Four stepwise regressions were conducted utilizing $IA^1$, $IA^2$, $IA^3$, and $IA^4$ as dependent variables for each of the analyses. Independent variables for each of the analyses included: legitimate power (LP1, LP2); reward power (RWP1, RWP2); coercive power (CP1, CP2, CP3); referent power (RFP1, RFP2); expert power (EXP1, EXP2); general power (GP1, GP2, GP3); coupling (C1, C2, C3, C4); ambiguity (A1, A2, A3, A4); age; gender; position; degree type; and years of employment. A summary of the models from each analysis and significant variables is provided in Table 10.

Table 10

*Summary of Stepwise Multiple Regression Analysis on Power, Coupling, and Ambiguity on the Innovation-Adoption Process*

| Dependent Variable | Model Summary | Predictor Variable | B | 95%CI | P |
|---|---|---|---|---|---|
| $IA^4$ | $F_{2,78}=9.099, p < .0005, R^2=.189$ | C3 | 2.712 | .834,4.589 | p=.005 |
| | | GP2 | 2.199 | .059,4.338 | p=.044 |
| $IA^3$ | $F_{3,76}=13.792, p < .0005, R^2=.353$ | C1 | .421 | .227,.616 | p<.0005 |
| | | CP1 | .232 | .086,.378 | p=.002 |
| | | A2 | -.291 | -.584,-.068 | p=.011 |
| $IA^2$ | $F_{2,77}=4.945, p =.010, R^2=.114$ | C1 | -.196 | -.375,-.018 | p=.032 |
| | | Yrs Emp | .022 | .002,.042 | p=.035 |
| $IA^1$ | $F_{2,77}=7.296, p =.001, R^2=.159$ | EXP2 | .305 | .106,.505 | p=.003 |
| | | A1 | .160 | .014,.306 | p=.032 |

Generally, the multiple regression analyses indicated that coercive power (CP1, general power (GP2), expert power (EXP2), coupling (C1, C3), ambiguity (A1, A2), and years of employment were significant predictors of the innovation adoption process. Based on these analyses, Figure 5 has been modified to reflect the additional predictors of innovation adoption identified in this analysis. The hypothesized model also reflects relationships and predictors that are consistent with the results previously noted in answering Research Questions 1-5.

*Figure 5.* Hypothesized causal model reflecting the influence of power, coupling, and ambiguity on the perceived legitimacy of a management innovation and the influence of perceived legitimacy on the adoption of a management innovation.
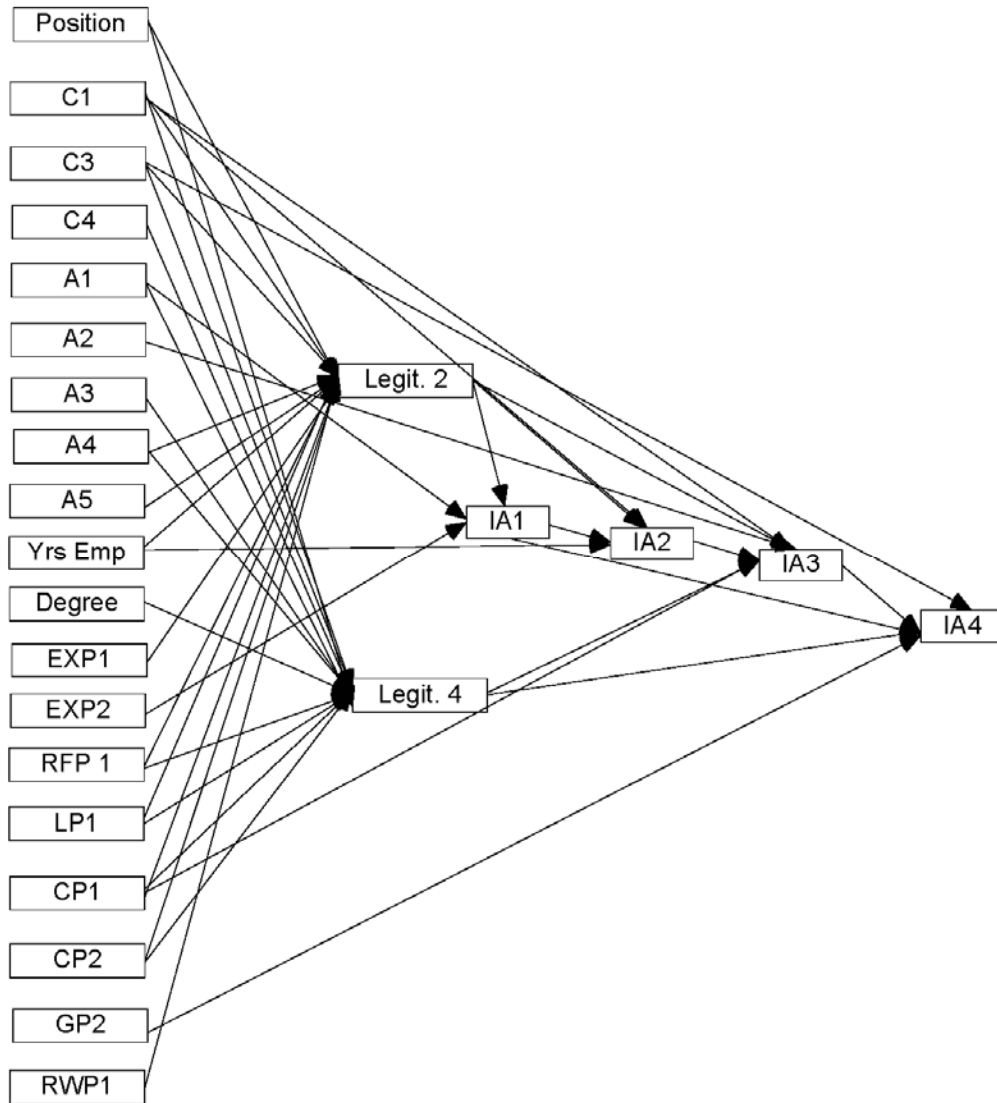
Three assumptions associated with multiple regression analysis were tested. First, the linearity assumption was tested. Multicollinearity of the sample was discounted due to the use of stepwise regression analysis in determining predictor variables, which enters predictor variables to the model based on the strength of their relationships with the dependent variable while controlling for interactions with other predictor variables Also, partial correlation analysis, as will be discussed later, was used to eliminate predictor variables that did not maintain significant correlations (p<.05)

with the dependent variables while controlling for the influence of other predictor variables within the model.

Second, histograms, normal p-p plots of standardized residuals, and descriptive statistics were utilized to test the normality assumption. Figures 6-11 present the histograms of the residuals and p-p plots for the six predictor models for the identified dependent variables (Legitimacy 2, Legitimacy 4, $IA^1$, $IA^2$, $IA^3$, and $IA^4$). The histogram for each model is located on the left and the p-p plot is located on the right. A normal curve with the same mean and standard deviation as the predictor model is included in each histogram for purposes of comparison.

Figures 6, 7, 8, 9, and 10 demonstrate that the distribution of residuals is reasonably reflective of the normal distribution curve suggesting that the normality assumption is met. The associated p-p plots further demonstrate that the normality assumption is met in that the residuals for each predictive model approximate the regression line.

Figure 11 demonstrates that the distribution of residuals does not reflect the normal distribution curve suggesting that the normality assumption is not met. Upon closer examination, the distribution of residuals associated with the regression appears to be leptokurtic, or peaked, ($\gamma_2$= 4.727) and positively skewed ($\gamma_1$= 2.041). In part, the lack of normality appears to be linked to the dependent variable, $IA^4$ ($\chi$ = 14.4, $s$=21.287), which was also was leptokurtic ($\gamma_2$= 4.459) and was positively skewed ($\gamma_1$=2.055). These tendencies indicate most of the scores were distributed toward the lower end of the range (0 to 100) with a few scores in the upper range. Indeed, the

frequency distribution for the dependent variable indicated that of the 191 data points

tied to the dependent variable, only eight exceeded 50.

*Figure 6.* Histogram and p-p plots of residuals with the predictor model and Legitimacy 2.
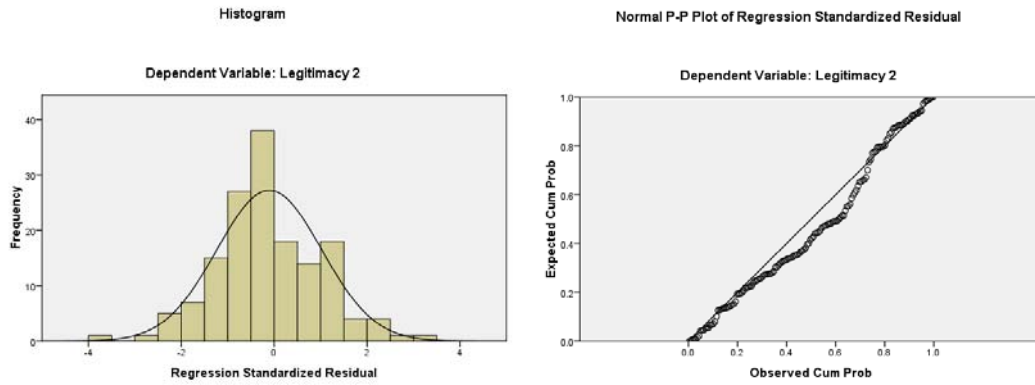


*Figure 7.* Histogram and p-p plots of residuals with the predictor model and Legitimacy 4.
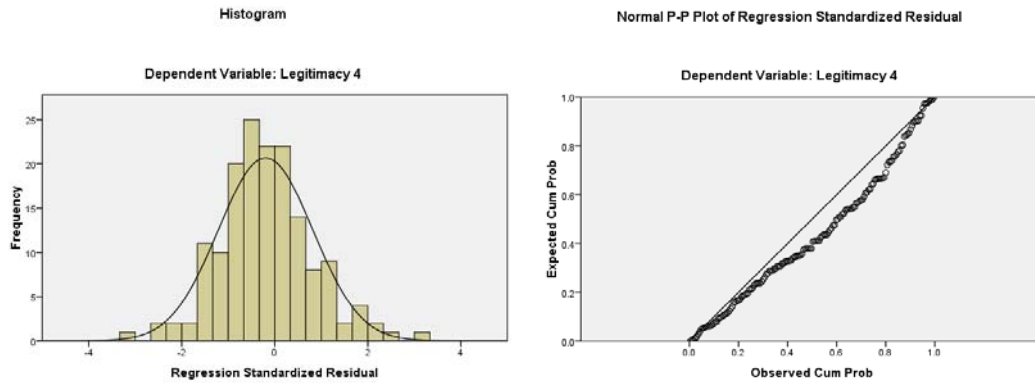


*Figure 8.* Histogram and p-p plots of residuals with the predictor model and IA[1].
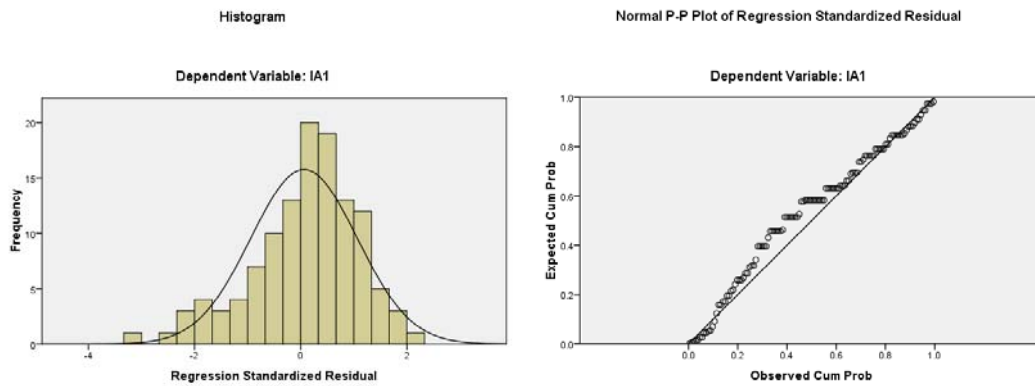
*Figure 9.* Histogram and p-p plots of residuals with the predictor model and IA$^2$.
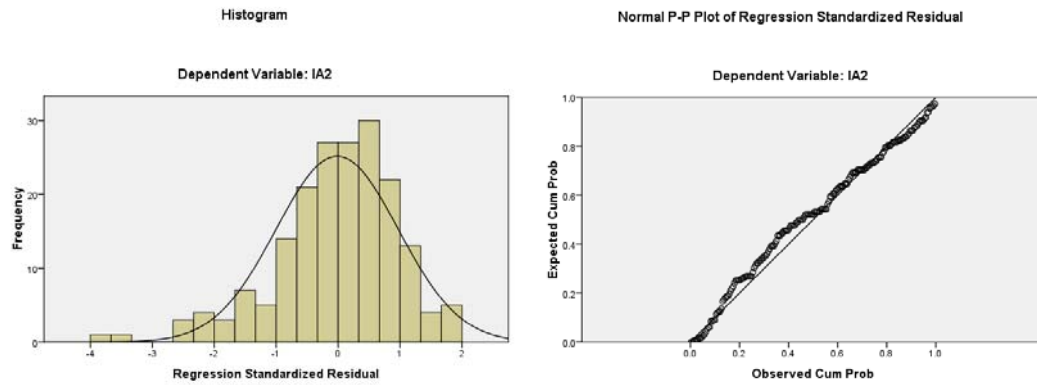


*Figure 10.* Histogram and p-p plots of residuals with the predictor model and IA$^3$.
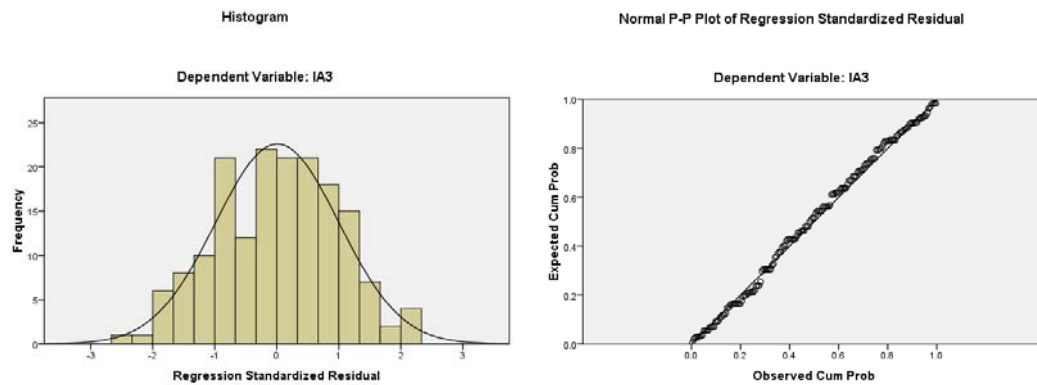


*Figure 11.* Histogram and p-p plots of residuals with the predictor model and IA$^4$
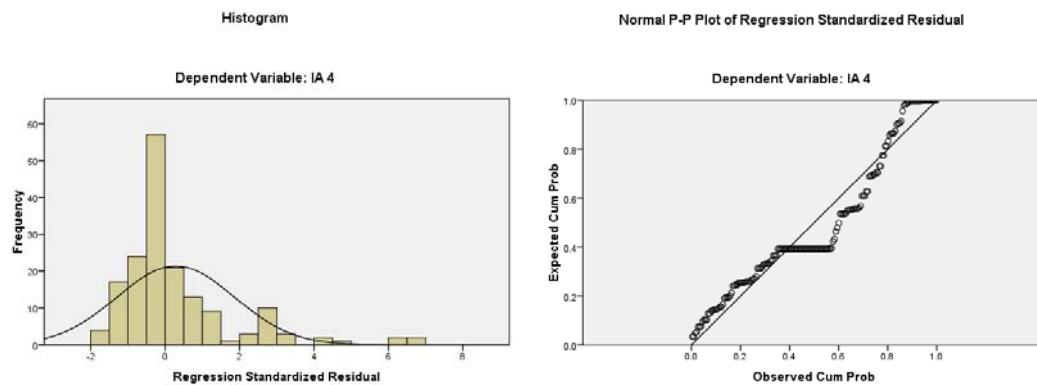


Third, the homogeneity and linearity assumptions were tested using normal p-p plots of standardized residuals. Figures 12-17 present the scatterplots of the

standardized residuals for the six predictive models with the identified dependent variables (Legitimacy 2, Legitimacy 4, $IA^1$, $IA^2$, $IA^3$, and $IA^4$). All six figures indicate that while the standardized variance of residuals generally falls within the range of $\pm2$, the variance does not fall into a random display of points emanating from the means of the standardized scores. As a result, Figures 12-17 are heteroscedastic. Lomax (2001) and Cohen et al., (2003) indicated that while the regression coefficients remain unbiased when a violation of the homoscedasticity assumption occurs, the tests of significance are affected and may result in a larger number of Type II errors. Essentially, there may be a greater potential to reject falsely the significance of the predictor variables when the homoscedasticity assumption is violated, especially when smaller sample sizes are evident. However, Lomax (2001) and Pedhazur (1997) indicated the net effect linked to a violation of the homoscedasticity assumption was minimal. In fact, Pedhazur (1997) noted that the robustness of the regression analysis yields valid F tests in the face of most assumption violations. Therefore, while the scatterplots appear to indicate a violation of the homogeneity of variance assumption, it is not a serious violation given a sample size larger than 170 and the robustness of the regression analysis.

*Figure12.* Scatterplot of the standardized variance of residuals for the predictor model

in Legitimacy 2.
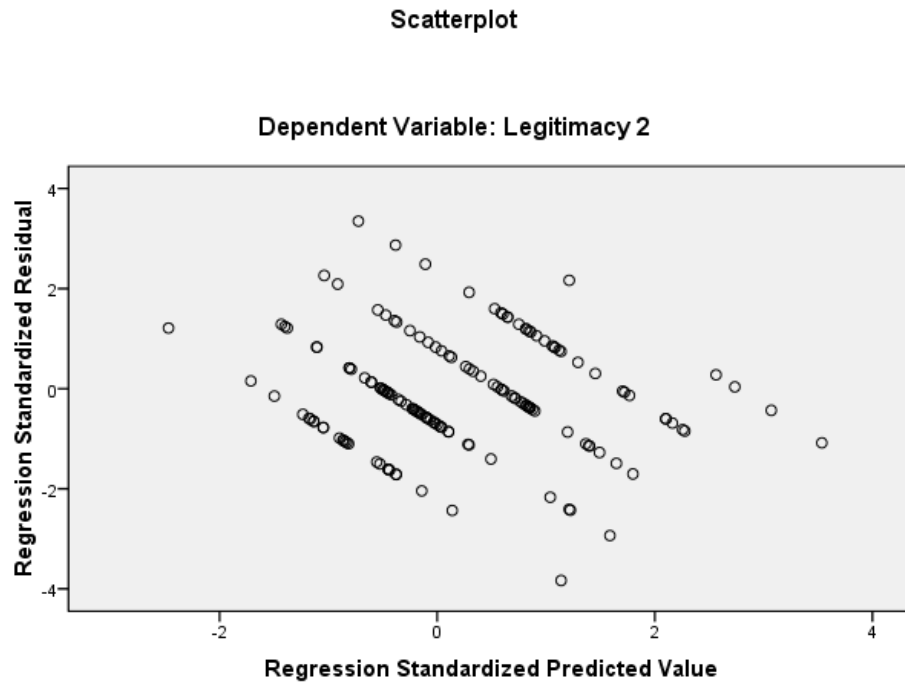


*Figure 13.* Scatterplot of the standardized variance of residuals for the predictor model

in Legitimacy 4.
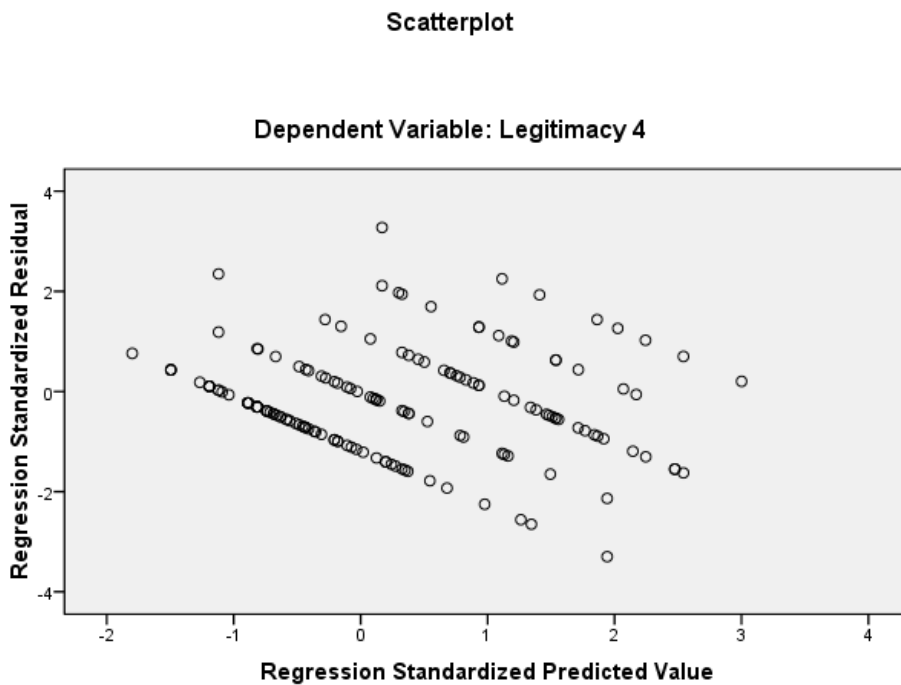
*Figure 14.* Scatterplot of the standardized variance of residuals for the predictor model in IA[1].



Scatterplot

Dependent Variable: IA1
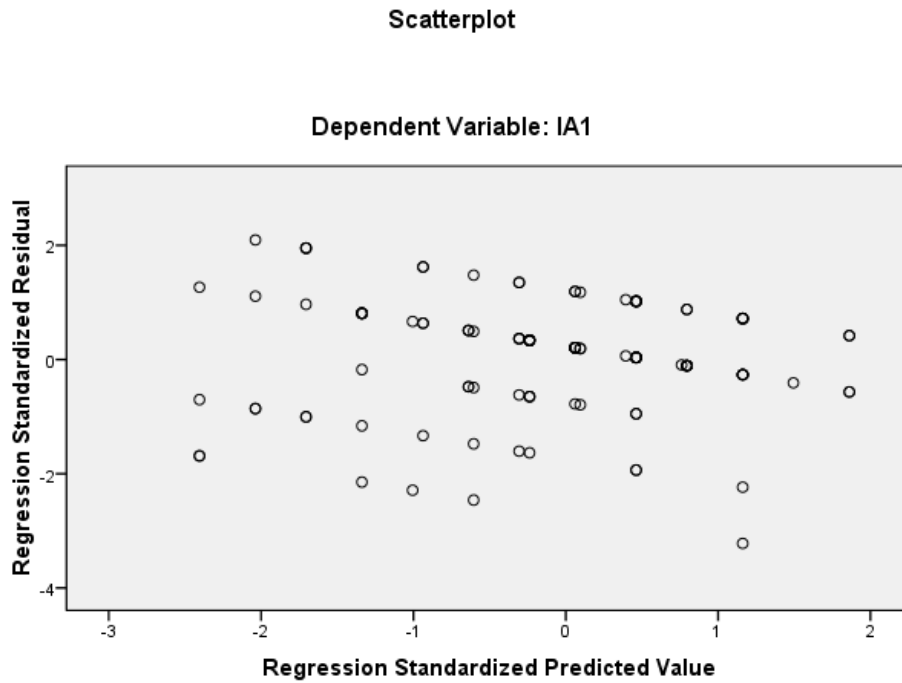
*Figure 15.* Scatterplot of the standardized variance of residuals for the predictor model in IA[2].



Scatterplot

Dependent Variable: IA2
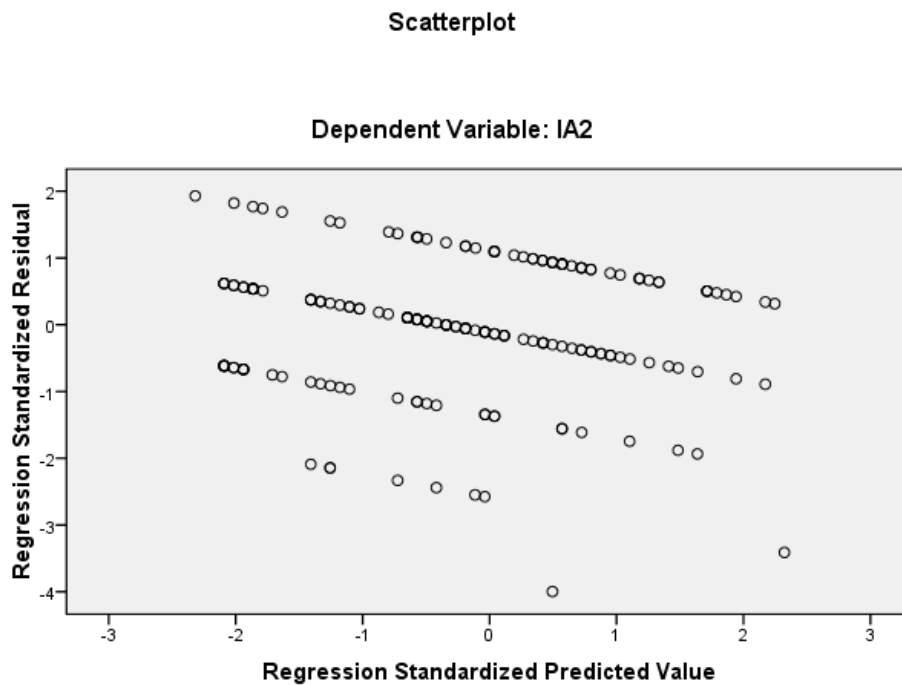
*Figure 16.* Scatterplot of the standardized variance of residuals for the predictor model in IA$^3$.
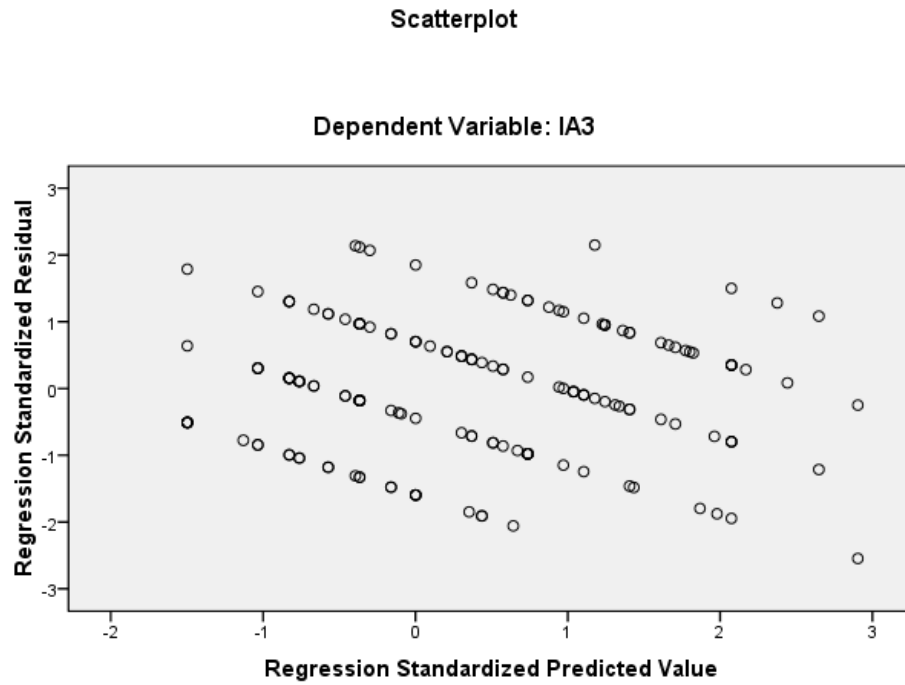


*Figure 17.* Scatterplot of the standardized variance of residuals for the predictor model in IA$^4$.
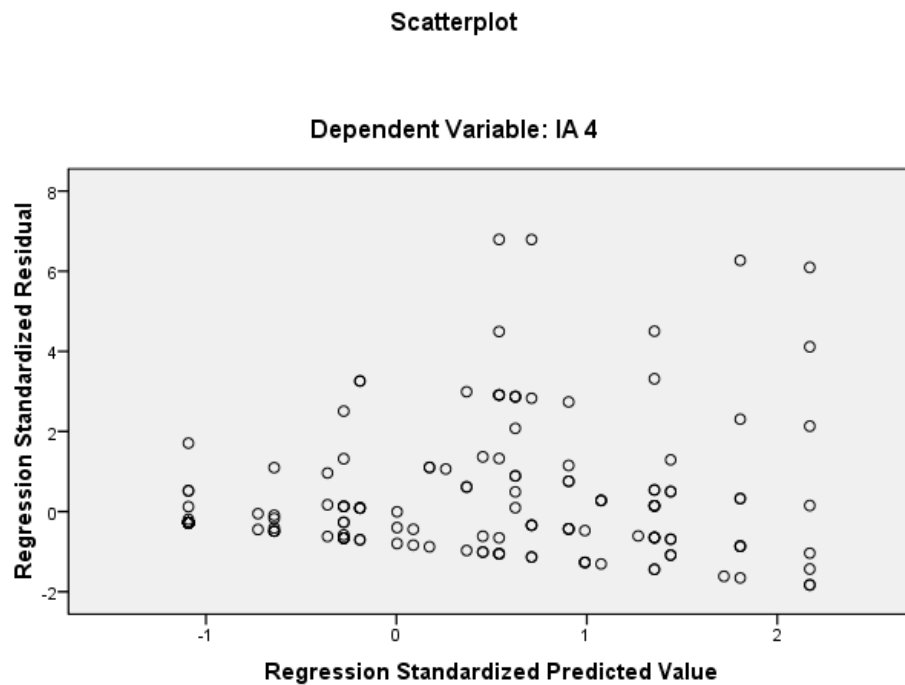
*Path Analysis*

Next, a path analysis was used to further test the direct, indirect, and total causal effects of ambiguity, power, coupling, and legitimacy on the adoption of a management innovation. Basically, path analysis was used to further test the hypothesized causal model identified in Figure 5. The hypothesized model emerged from a critical analysis of the research related to the adoption of management innovations in higher education and from a series of multiple regression analyses associated with the first five research questions.

The first step in completing the path analysis was to reclassify independent variables as exogenous variables and dependent variables became endogenous variables (Mertler & Vannatta, 2005; Pendhazur, 1997; Schumacker & Lomax, 2004). The hypothesized model included 19 exogenous variables: position, degree, years of service, coercive power (CP1, CP2), referent power (RFP1), expert power (EXP1, EXP2), reward power (RWP1), legitimate power (LP1), general power (GP2), coupling (C1, C3, C4) and ambiguity (A1, A2, A3, A4, A5). Endogenous variables include legitimacy (Legit2, Legit4) and the innovation-decision process variables ($IA^1$, $IA^2$, $IA^3$, $IA^4$).

Next, correlation analysis was used to identify the significant correlations among the model's exogenous and endogenous variables. Results of the correlation analysis are identified in Table 11.

Table 11. *Correlation Matrix for Endogenous and Exogenous Variables*

| | | Position | Degree | Yrs Srv | CP1 | CP2 | RFP1 | EXP1 | EXP2 | RWP1 | LP1 | GP2 | C1 | C3 | C4 | A1 | A2 | A3 | A4 | A5 | Legit1 | Legit2 | IA1 | IA2 | IA3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Degree | r | -.586** | | | | | | | | | | | | | | | | | | | | | | | |
| | n | 191 | | | | | | | | | | | | | | | | | | | | | | | |
| Yrs Srv | r | -0.075 | 0.125 | | | | | | | | | | | | | | | | | | | | | | |
| | n | 191 | 191 | | | | | | | | | | | | | | | | | | | | | | |
| CP1 | r | -0.017 | 0.026 | -0.071 | | | | | | | | | | | | | | | | | | | | | |
| | n | 175 | 175 | 175 | | | | | | | | | | | | | | | | | | | | | |
| CP2 | r | 0.051 | -0.05 | 0.02 | .311** | | | | | | | | | | | | | | | | | | | | |
| | n | 176 | 176 | 176 | 161 | | | | | | | | | | | | | | | | | | | | |
| RFP1 | r | 0.055 | -0.022 | -0.058 | 0.083 | 0.131 | | | | | | | | | | | | | | | | | | | |
| | n | 182 | 182 | 182 | 167 | 175 | | | | | | | | | | | | | | | | | | | |
| EXP1 | r | -.189* | .211* | 0.003 | -.296** | -.231* | .249** | | | | | | | | | | | | | | | | | | |
| | n | 128 | 128 | 128 | 128 | 120 | 123 | | | | | | | | | | | | | | | | | | |
| EXP2 | r | .185* | 0.008 | -0.111 | 0.031 | 0.023 | .623** | .278** | | | | | | | | | | | | | | | | | |
| | n | 182 | 182 | 182 | 168 | 175 | 128 | 125 | | | | | | | | | | | | | | | | | |
| RWP1 | r | 0.053 | -0.007 | -0.02 | .175* | .157* | .609** | .260** | .449** | | | | | | | | | | | | | | | | |
| | n | 177 | 177 | 177 | 162 | 175 | 176 | 121 | 176 | | | | | | | | | | | | | | | | |
| LP1 | r | 0.088 | -0.021 | -0.042 | .156* | .206** | .615** | .242** | .581** | .514** | | | | | | | | | | | | | | | |
| | n | 185 | 185 | 185 | 169 | 175 | 181 | 123 | 180 | 176 | | | | | | | | | | | | | | | |
| GP2 | r | -0.048 | 0.015 | -0.038 | .460** | .214** | .287** | -.212* | .199* | .215** | .319** | | | | | | | | | | | | | | |
| | n | 169 | 169 | 169 | 169 | 157 | 163 | 126 | 164 | 158 | 164 | | | | | | | | | | | | | | |
| C1 | r | .182* | -.186* | -.164* | .219** | -0.036 | .271** | -0.155 | .371** | .312** | .198** | .364** | | | | | | | | | | | | | |
| | n | 189 | 189 | 189 | 174 | 175 | 181 | 127 | 181 | 176 | 183 | 168 | | | | | | | | | | | | | |
| C3 | r | 0.063 | -.204** | -.179* | .446** | .160* | 0.018 | -.401** | 0.087 | 0.074 | 0.056 | .466** | .438** | | | | | | | | | | | | |
| | n | 178 | 178 | 178 | 175 | 164 | 170 | 128 | 171 | 165 | 172 | 169 | 177 | | | | | | | | | | | | |
| C4 | r | 0.004 | -0.019 | -0.1 | .411** | 0.108 | .221** | -.258** | .232** | .167* | .237** | .571** | .297** | .672** | | | | | | | | | | | |
| | n | 175 | 175 | 175 | 174 | 161 | 179 | 128 | 179 | 174 | 169 | 169 | 174 | 175 | | | | | | | | | | | |
| A1 | r | -0.101 | -0.043 | 0.042 | -.556** | -.234* | 0.079 | .457** | 0.045 | 0.147 | -0.084 | -.368** | -0.085 | -.433** | -.373** | | | | | | | | | | |
| | n | 123 | 123 | 123 | 123 | 116 | 118 | 99 | 120 | 116 | 119 | 122 | 122 | 123 | 123 | | | | | | | | | | |
| A2 | r | 0.079 | 0.038 | 0.003 | -0.103 | 0.051 | -0.027 | -.183* | -0.014 | 0.032 | 0.113 | -0.053 | 0.124 | 0.061 | 0.011 | -0.034 | | | | | | | | | |
| | n | 187 | 187 | 187 | 172 | 173 | 179 | 125 | 179 | 174 | 181 | 166 | 186 | 175 | 172 | 120 | | | | | | | | | |
| A3 | r | 0.122 | -0.032 | -0.062 | -0.094 | 0.025 | 0.044 | -0.119 | 0.095 | 0.128 | .160* | -0.049 | 0.136 | 0.044 | 0.031 | -0.006 | .763** | | | | | | | | |
| | n | 187 | 187 | 187 | 172 | 173 | 179 | 125 | 179 | 174 | 181 | 166 | 186 | 175 | 172 | 120 | 187 | | | | | | | | |
| A4 | r | 0.105 | -0.058 | -0.139 | 0.023 | -0.124 | .327** | 0.075 | .371** | .421** | .182* | 0.088 | .501** | .263** | .208** | 0.117 | 0.096 | .165* | | | | | | | |
| | n | 186 | 186 | 186 | 171 | 172 | 178 | 125 | 178 | 173 | 180 | 165 | 185 | 174 | 171 | 120 | 185 | 185 | | | | | | | |
| A5 | r | .187* | -0.07 | -0.074 | 0.01 | -0.028 | .398** | 0.056 | .418** | .503** | .250** | .197* | .558** | .227** | .201** | 0.079 | 0.12 | .180* | .725** | | | | | | |
| | n | 187 | 187 | 187 | 172 | 173 | 179 | 126 | 179 | 174 | 181 | 166 | 186 | 175 | 172 | 121 | 186 | 186 | 186 | | | | | | |
| Legit2 | r | .190** | -0.095 | -.145* | 0.009 | -.236** | .405** | -0.001 | .418** | .303** | .184* | .165* | .571** | .244** | .224** | 0.088 | 0.042 | 0.093 | .662** | .547** | | | | | |
| | n | 189 | 189 | 189 | 174 | 175 | 181 | 127 | 181 | 176 | 183 | 168 | 189 | 177 | 174 | 122 | 186 | 186 | 185 | 186 | | | | | |
| Legit4 | r | 0.077 | 0.004 | -0.057 | .372** | -0.074 | .168* | -.247** | .237** | 0.127 | .168* | .396** | .488** | .597** | .470** | -.351** | 0.096 | 0.075 | .369** | .359** | .395** | | | | |
| | n | 175 | 175 | 175 | 173 | 161 | 167 | 127 | 168 | 162 | 169 | 169 | 174 | 175 | 173 | 122 | 186 | 186 | 185 | 172 | 174 | | | | |
| IA1 | r | 0.042 | 0.105 | 0.06 | -0.087 | -0.02 | .247** | 0.058 | .278** | 0.126 | 0.142 | 0.06 | .170* | -0.02 | 0 | 0.171 | .154* | 0.133 | .237** | .201** | .288** | .255** | | | |
| | n | 190 | 190 | 190 | 174 | 175 | 181 | 127 | 181 | 176 | 184 | 168 | 188 | 177 | 174 | 122 | 186 | 186 | 185 | 186 | 188 | 174 | | | |
| IA2 | r | -0.126 | 0.142 | .238** | 0.044 | 0.01 | -0.036 | -0.018 | -0.063 | -0.068 | -0.014 | 0.002 | -.221** | 0.011 | 0.07 | -0.147 | 0.054 | -0.012 | -.206** | -.187* | -.214** | -0.054 | .326** | | |
| | n | 189 | 189 | 189 | 173 | 174 | 180 | 127 | 180 | 175 | 183 | 167 | 187 | 176 | 173 | 122 | 185 | 185 | 184 | 185 | 187 | 173 | 188 | | |
| IA3 | r | 0.11 | -0.115 | -0.051 | .337** | 0.108 | .203** | -0.101 | .276** | .198** | 0.1 | .349** | .501** | .404** | .306** | -.230* | -0.131 | -0.046 | .280** | .306** | .326** | .450** | 0.035 | -.189* | |
| | n | 187 | 187 | 187 | 173 | 173 | 179 | 127 | 179 | 174 | 181 | 167 | 186 | 176 | 173 | 121 | 184 | 184 | 183 | 184 | 186 | 173 | 186 | 185 | |
| IA4 | r | 0.045 | -.159* | -0.062 | .252** | 0.044 | -0.01 | -0.067 | 0.105 | .252** | 0.117 | .301** | .254** | .414** | .354** | -.253** | -0.03 | 0.028 | .235** | .235** | 0.066 | .322** | -0.026 | 0.01 | .390** |
| | n | 191 | 191 | 191 | 175 | 176 | 182 | 128 | 182 | 177 | 185 | 169 | 189 | 178 | 175 | 123 | 187 | 187 | 186 | 187 | 189 | 175 | 190 | 189 | 187 |

**\*\***: Correlation is significant at the 0.01 level (2-tailed).
**\***: Correlation is significant at the 0.05 level (2-tailed).

Paths that included variables that did not have significant relationships (p≥.05) were eliminated from the causal model with two exceptions. The path from CP2 → Legit4 and CP1 → Legit2 were retained in the model since previous stepwise regression analyses indicated the independent variables were significant predictors of the dependent variables. Table 12 identifies the eliminated paths.

Table 12

*Summary of Paths Eliminated from the Causal Model Based on Correlation Analysis*

| Variables/Path | *r* | P |
| --- | --- | --- |
| Position → Legit4 | .077 | .310 |
| A3 → Legit4 | .075 | .325 |

Next, a series of partial correlation analyses were used to determine if the significant correlations were maintained while controlling for each of the other variables within the model. Fourteen significant relationships (p<.05) identified in the previous correlation analysis lost significance (p≥.05) when controlling for other variables within the model. As a result, fourteen paths were eliminated from the hypothesized causal model. Table 13 identifies the eliminated paths.

Table 13

*Summary of Paths Eliminated from the Causal Model Based on Partial Correlation Analysis*

| Relationship | Control Variables | P |
|---|---|---|
| C4 → Legit 2 | C1, C3, A4, A5, EXP2, RFP1 | p≥.05 |
| C4 → Legit 4 | C3 | p≥.05 |
| A1 → Legit 4 | C3, CP1 | p≥.05 |
| A1 → IA[1] | L2 | p≥.05 |
| A2 → Legit 2 | C1, C3, C4, A2, A4, A5, EXP1, EXP2, RFP1, CP1 | p≥.05 |
| A2 → IA[3] | IA[1], IA[2] | p≥.05 |
| RFP1 → Legit 4 | C1, C4, A1, A4, A5, EXP1, EXP2, LP1, GP2, RWP1 | p≥.05 |
| LP1 → Legit 2 | A1, A2, A4, C1, C4, GP2, EXP1, EXP2, RWP1 | p≥.05 |
| LP1 → Legit 4 | A1, A3, A5, EXP2, C1, C4, CP1, GP1, EXP1 RFP1, RWP1 | p≥.05 |
| GP2 → IA[4] | C3 | p≥.05 |
| RWP1 → Legit 2 | A4, A5, RFP1 | p≥.05 |
| Yrs of Service → Legit 2 | C1, A4, A5, RFP1, CP2 | p≥.05 |
| Position → Legit 2 | C1, A4, A5 | p≥.05 |
| A3 → Legit 2 | A2, A5, C1, C2, C3, C4, CP1, EXP1, EXP2, RFP1, RWP1 | p≥.05 |

As with the correlation analysis, two exceptions were made with regard to eliminating paths based on the correlation analysis. The relationship between A4 and Legit4 was not significant when controlling for GP2. Since GP2 was later eliminated, the A4 → Legit4 path was retained. In addition, the relationship between CP1 and Legit2 was not significant (p=.053) when controlling for C3. Given that the relationship between CP1 and Legit2 remained statistically significant (p ≤ .002) when controlling for all other variables in the model, the CP1 → Legit2 path was retained in the model.

To summarize, correlation and partial correlation analyses were utilized to examine further the causal effects of ambiguity, coupling, and power on perceived legitimacy of a management innovation and subsequent adoption of the innovation by individuals. Sixteen paths and eight exogenous variables were eliminated from the hypothesized model. The eliminated paths and variables are shaded red in Figure 18.

*Figure 18.* Hypothesized causal model reflecting paths and exogenous variables eliminated based on correlation and partial correlation analyses.
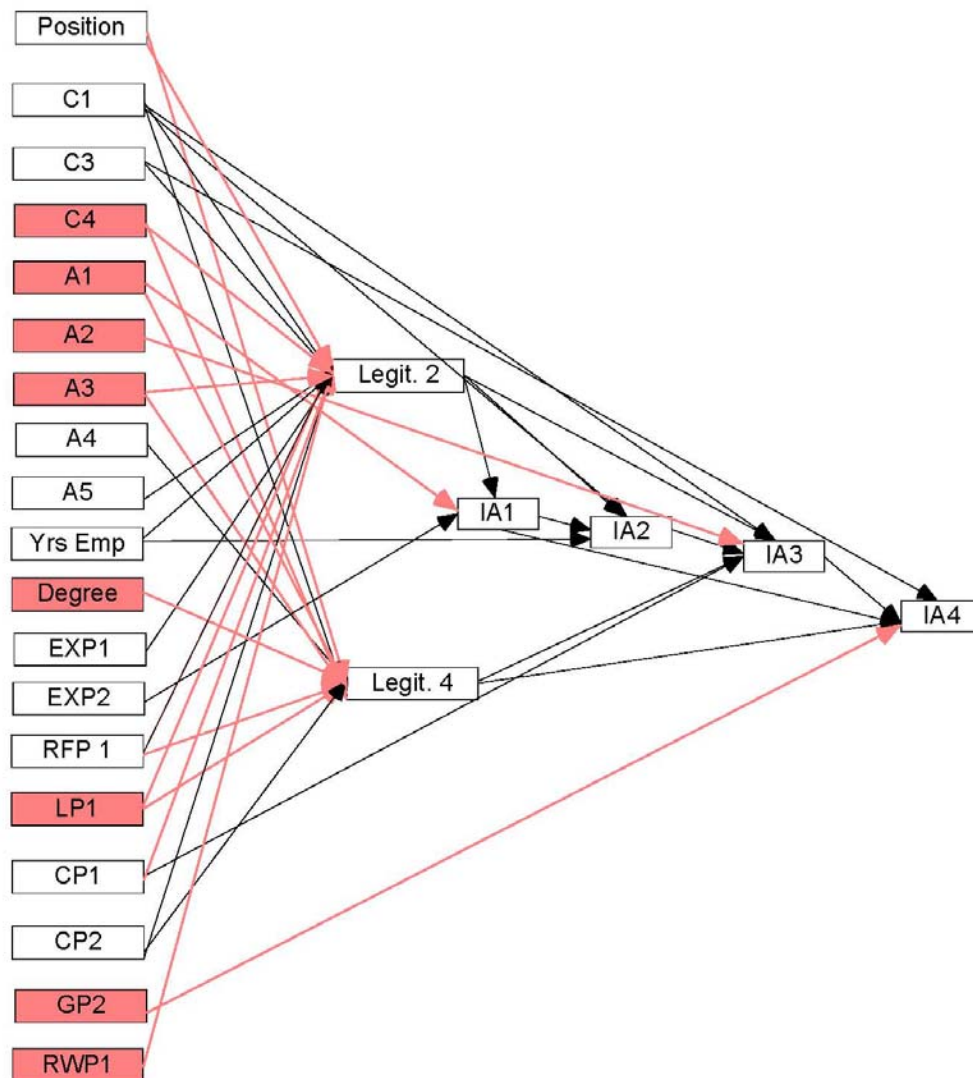
Using the previous correlation analysis, covariant relationships among the

remaining exogenous variables were added to the model. Additionally, error terms were

added to each endogenous variable to represent any unexplained variance. The revised

model reflecting the eliminated paths, eliminated exogenous variables, added

covariances, and added error terms is presented in Figure 19.

*Figure 19.* Adjusted causal model
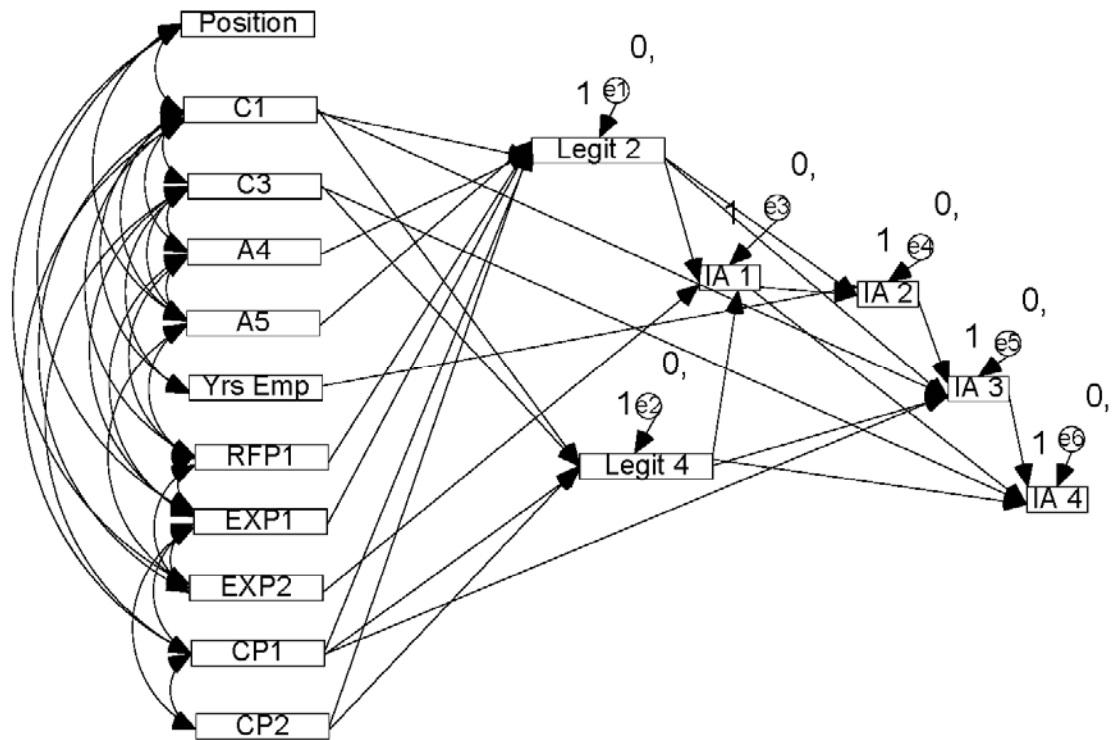


*Goodness of Fit*

The adjusted model was tested using SPSS and AMOS statistical software. The

results, presented in Figure 20, indicated the model was a fairly good fit although

goodness-of-fit indicators provided conflicting results. The significance test for the $\chi^2$

statistic ($\chi^2$=130.96, $df$=83) yielded a p=.001 indicating that the model was not a good

fit for the observed data. However, a second indicator of goodness-of-fit was a $\chi^2/df$ ratio of 1.58, which was below 2 indicating that the fit of data had not been reduced drastically by dropping paths during the analysis. Similarly, the analysis yielded a Root Mean Square Error of Approximation Value (.055) that was slightly greater than .05 and less than .08 indicating that the model was at least an adequate fit for the data. Finally, the analysis yielded a Normed Fit Index (.879) and a Comparative Fit Index (.948) that either exceeded or neared .90 further substantiating the fitness of the model.

In essence, goodness-of-fit was not supported by one analysis while four other analyses indicated that the model was an appropriate fit for the observed data. Pedhazur (1997) when describing discontinuity between the significance of the $\chi^2$ statistic and other goodness-of-fit indicators noted "the searcher may conclude that the model fits the data fairly well" (p. 872). Additionally, the sample size for the analysis was small (n=191) given the number of variables (23): typically, 5 to 10 subjects per variable are expected (Schumacker & Lomax, 2004). It is possible that the small sample size diminished statistical power, and that diminished power made it difficult to find significance (Coughlin, 2005; Pedhazur, 1997; Schumacker & Lomax, 2004).  In short – given  Pedhazur's comment; given the fact that the $\chi^2$ statistic may not always be the best goodness of fit indicator (Cohen et al., 2003; Pedhazur, 1997; Wuensch, 2006); given the small sample size; and given that the $\chi^2/df$ ratio, Root Mean Square Error of Approximation Value, Normed Fit Index and Comparative Fit Index indicated that the model, at minimum, was an adequate fit for the observed data – the researcher concluded that the model was a fairly good fit for the data.

*Figure 20.* Causal model reflecting the influence of power, coupling, and ambiguity on the perceived legitimacy of a management innovation and the influence of perceived legitimacy on the adoption of a management innovation.
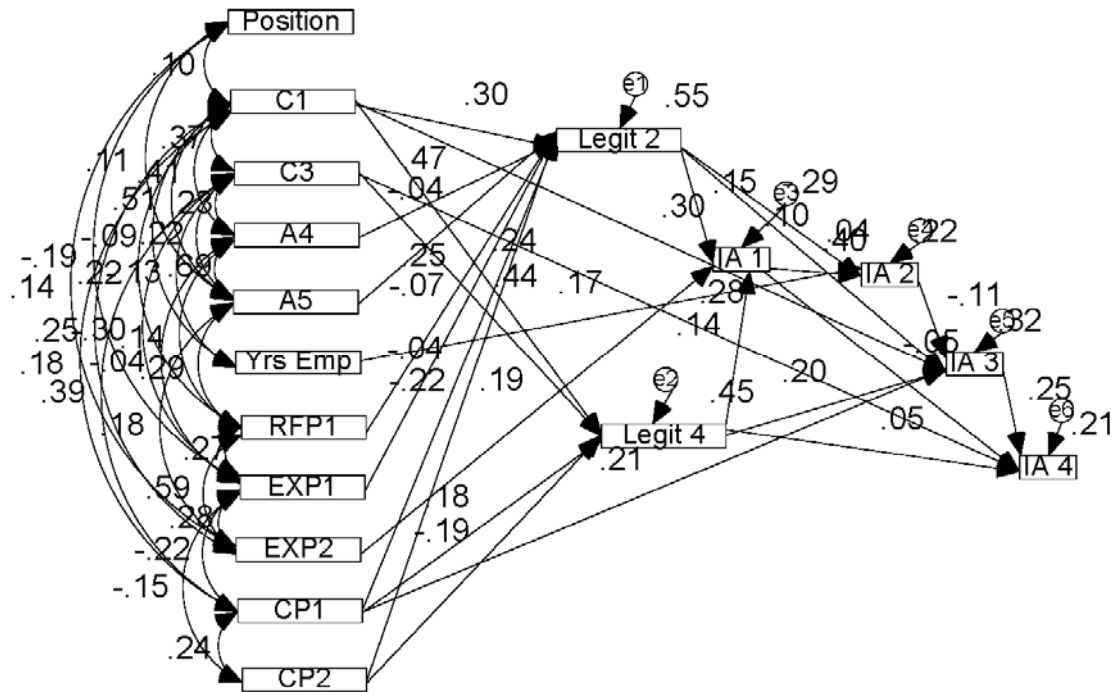


*Decomposition of Effects*

Decomposition of effects was the final step in the path analysis. Decomposition identified the direct, indirect, and total effects of each exogenous variable on each endogenous variable. Table 14 identifies the direct, indirect, and total effects associated with each endogenous variable as calculated by SPSS/AMOS.

Table 14

*Direct and Indirect Effects of Study Variables*

| Endogenous | Exogenous | Direct | Indirect | Total |
|---|---|---|---|---|
| Legitimacy 2 | A4 | .436 | 0 | .436 |
| | C1 | .296 | 0 | .296 |
| | RFP1 | .246 | 0 | .246 |
| | CP1 | -.029 | 0 | -.029 |
| | A5 | -.035 | 0 | -.035 |
| | EXP1 | -.055 | 0 | -.055 |
| | CP2 | -.214 | 0 | -.214 |
| Legitimacy 4 | C3 | .351 | 0 | .351 |
| | C1 | .271 | 0 | .271 |
| | CP1 | .153 | 0 | .153 |
| | CP2 | -.211 | 0 | -.211 |
| IA[1] | EXP2 | .185 | 0 | .185 |
| | Legit 2 | .158 | 0 | .158 |
| | Legit 4 | .128 | 0 | .128 |
| | C1 | 0 | .082 | .082 |
| | A4 | 0 | .069 | .069 |
| | C3 | 0 | .045 | .045 |
| | RFP1 | 0 | .039 | .039 |
| | CP1 | 0 | .015 | .015 |
| | A5 | 0 | -.006 | -.006 |
| | EXP1 | 0 | -.009 | -.009 |
| | CP2 | 0 | -.061 | -.061 |
| IA[2] | IA[1] | .311 | 0 | .311 |
| | EXP2 | 0 | .058 | .058 |

|  |  |  |  |  |
|---|---|---|---|---|
|  | Legit 4 | 0 | .04 | .04 |
|  | CP2 | 0 | .031 | .031 |
|  | Yrs Emp | .015 | 0 | .015 |
|  | C3 | 0 | .014 | .014 |
|  | CP1 | 0 | .011 | .011 |
|  | EXP1 | 0 | .01 | .01 |
|  | A5 | 0 | .006 | .006 |
|  | A4 | 0 | -.08 | -.08 |
|  | C1 | 0 | -.043 | -.043 |
|  | RFP1 | 0 | -.045 | -.045 |
|  | Legit 2 | -.232 | .049 | -.183 |
| $IA^3$ | C1 | .286 | .064 | .35 |
|  | CP1 | .151 | .024 | .175 |
|  | Legit 4 | .173 | -.005 | .168 |
|  | Legit 2 | .037 | .024 | .062 |
|  | C3 | 0 | .059 | .059 |
|  | A4 | 0 | .027 | .027 |
|  | RFP1 | 0 | .015 | .015 |
|  | A5 | 0 | -.002 | -.002 |
|  | Yrs Emp | 0 | -.002 | -.002 |
|  | EXP1 | 0 | -.003 | -.003 |
|  | EXP2 | 0 | -.008 | -.008 |
|  | $IA^1$ | 0 | -.042 | -.042 |
|  | CP2 | 0 | -.049 | -.049 |
|  | $IA^2$ | -.134 | 0 | -.134 |
| $IA^4$ | $IA^3$ | 5.188 | 0 | 5.188 |
|  | C3 | 3.887 | .592 | 4.479 |
|  | C1 | 0 | 1.992 | 1.992 |

| | | | |
|---|---|---|---|
| Legit 4 | .937 | .747 | 1.683 |
| CP1 | 0 | 1.034 | 1.034 |
| A4 | 0 | .074 | .074 |
| RFP1 | 0 | .042 | .042 |
| Legit 2 | 0 | .17 | .17 |
| A5 | 0 | -.006 | -.006 |
| EXP1 | 0 | -.009 | -.009 |
| Yrs Emp | 0 | -.011 | -.011 |
| EXP2 | 0 | -.216 | -.216 |
| CP2 | 0 | -.392 | -.392 |
| $IA^2$ | 0 | -.694 | -.694 |
| $IA^1$ | -.954 | -.216 | -1.17 |

*Overview of Effects*

*Legitimacy.* Nine variables were hypothesized to have a direct influence on Legit2:  C1, C3, A4, A5, RFP1, EXP1, CP1, and CP2. Five paths were found to be significant ($p<.05$): C1, A4, RFP1, CP1 and CP2 (see Table 15).  A4 had the largest total effect (.436) indicating that as responses to A4 (Question 30) increased by 1 there was a corresponding .436 increase on Legit2. C1 had a total effect of .296, RFP1 had a total effect of .246, and CP 2 had a total effect of -.214.

With regard to Legit4, four variables were hypothesized to have a direct influence: C1, C3, CP1, and CP2. All four paths were found to be significant ($p<.05$). C3 had the largest effect (.351), followed by C1 (.271), CP2 (-.211), and CP1 (.153).

In general, the decomposition of effects indicated that ambiguity, coupling, coercive power, and referent power had the greatest total effect on the perceived

legitimacy of the management innovation, and further confirmed that these paths within the hypothesized model significantly represented the relationships found within the data.

*Innovation adoption.* The variables hypothesized to directly influence $IA^1$ included Legit2, Legit4, and EXP2. Two paths were identified as significant (p<.05): Legit2 and EXP 2 (see Table 15). EXP2 had the largest effect (.185), and Legit2 had a total effect of .158.

The variables hypothesized to directly influence $IA^2$ included $IA^1$, Years Employed, and Legit2. All three paths were found to be significant (p<.01). $IA^1$ had the largest effect (.311), followed by Legit2 (-.183). Years employed (.015) had a minimal total effect on $IA^2$ and was eliminated from the model.

The variables hypothesized to directly influence $IA^3$ included $IA^2$, Legit2, Legit4, CP1, and C3. Three paths were significant (p<.01): C1, Legit4, and CP1. The same three variables had the largest total effect: C1 (.35), Legit4 (.175), and CP1 (.168).

The variables hypothesized to directly influence $IA^4$ included $IA^1$, $IA^3$, C3, and Legit4. Three of the paths were found to be significant (p<.05): $IA^3$, Legit4, and C3 (see Table 15). $IA^3$ was found to have the largest total effect (5.188) followed by C3 (4.479), C1 (1.992), and L4 (1.683).

In summary, the decomposition of effects indicated that legitimacy, coupling, and coercive power had the greatest total effect on the innovation adoption process and further confirmed that the paths within the hypothesized model significantly represented the relationships within the data. Additionally, the decomposition confirmed a path of $IA^1 \rightarrow IA^2$ and $IA^3 \rightarrow IA^4$; however, the path from $IA^2 \rightarrow IA^3$ was not confirmed.

Table 15

*Significance of Paths within the Hypothesized Model*

| Variable 1 | | Variable 2 | p |
|---|---|---|---|
| C1 | → | Legitimacy 2 | p<.001 |
| CP1 | → | | p=.49 |
| EXP1 | → | | p=.269 |
| A4 | → | | p<.001 |
| A5 | → | | p=.642 |
| CP2 | → | | p<.001 |
| RFP1 | → | | p<.001 |
| C1 | → | Legitimacy 4 | p<.001 |
| C3 | → | | p<.001 |
| CP1 | → | | p=.005 |
| CP2 | → | | p=.001 |
| Legit 2 | → | $IA^1$ | p=.035 |
| Legit 4 | → | | p=.053 |
| EXP2 | → | | p=.01 |
| Employment | → | $IA^2$ | p=.008 |
| Legit 2 | → | | p<.001 |
| IA1 | → | | p<.001 |
| Legit 2 | → | $IA^3$ | p=.598 |
| C1 | → | | p<.001 |
| IA2 | → | | p=.074 |
| Legit 4 | → | | p=.005 |
| CP1 | → | | p=.002 |
| IA1 | → | $IA^4$ | p=.457 |
| IA3 | → | | p<.001 |

|  |  |  |
|---|---|---|
| Legit 4 | $\rightarrow$ | p=.544 |
| C3 | $\rightarrow$ | p<.001 |

*Summary: Phase I Quantitative Analysis*

Correlation analysis, multiple regression analysis, and path analysis were utilized to answer six research questions associated with this study. The analyses indicated (1) higher perceived legitimacy of a management innovation lead to increased adoption of the management innovation; (2) that while an individual's position within the institution may influence some variables that predict perceived legitimacy, an individual's position has no direct influence on perceived legitimacy; (3) increased perceived use referent and expert power by administrators to influence the adoption of a management innovation increased the degree to which individuals perceived the legitimacy of the management innovation; (4) increased perceived use of coercive power by administrators to influence the adoption of a management innovation decreased the degree to which individuals perceived the legitimacy of the management innovation; (5) legitimacy of a management innovation increased as individuals perceived greater coupling of the subsystem to the innovation; and (6) the interaction of ambiguity, power, and coupling increased perceived legitimacy of a management innovation which in turn lead to increased adoption of a management innovation.

In short, the quantitative analyses of Phase I yielded a causal model that supported the use of ambiguity, coupling, referent power, coercive power, and expert power as significant predictors of perceived legitimacy which in turn was a significant predictor of innovation adoption. Figure 21 highlights the final causal model that resulted from the Phase I, quantitative analysis.

*Figure 21.* Causal model at the conclusion of Phase I quantitative data analysis.
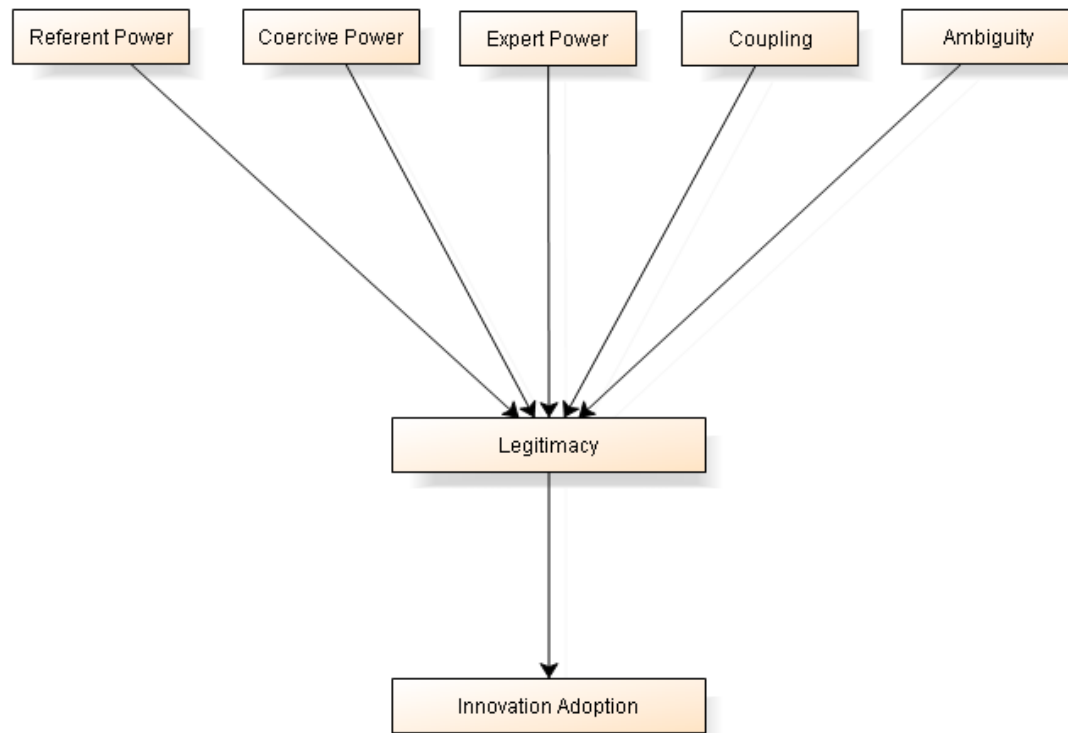


*Phase II: Qualitative Data Analysis*

*Phase II Respondents*

In Phase II, fifteen individuals (*n*=15) from the total population participated in face-to-face interviews. Participants purposefully selected included the president, four vice-presidents, three academic deans, the faculty senate president, and the staff council president. Randomly selected participants included two faculty and three staff. Participants have been employed at CPU from two years to 31 years with a mean of 14.27 years, which was higher than the population mean of 9.6 years. With regard to gender, 53% of participants were female, and 47% were male. These percentages reflected the percentages found in the population. Due to the purposeful sampling technique, interviewed participants included more individuals from the administrative

subsystems (66%) than the technical subsystem (34%); however, it is important to note that six of the participants from the administrative subsystem had at least five years experience as full-time faculty before becoming administrators, and all six teach at least one course each academic year. The length of interviews ranged from 17 minutes to 66 minutes with an average interview lasting nearly 44 minutes.

*Phase II Qualitative Results*

The purpose of Phase II analysis was to qualitatively confirm, elaborate, and explain Phase I findings. Phase II applied a confirmatory thematic analysis to the personal interviews. Accordingly, the semi-structured interviews followed an interview guide linked to the Phase I causal model (see Appendix B).

As noted in Chapter III, the confirmatory analysis included three processes: data transcription, data reduction, and explanation building. Recorded interviews were transcribed into a word processing document. A researcher-transcriptionist approach that utilized voice recognition software and a listen and repeat method was used to create verbatim transcripts (Matheson, 2007; Park & Zeanah, 2005). This approach increased the researcher's familiarity with the data, thereby increasing trustworthiness of the interview data. Trustworthiness was also increased through member checking. Transcriptions of three interviews were returned to participants for verification of accuracy with only minor, grammatical corrections being noted.

Data were then reduced using NVivo software. The data were coded based on the Phase I causal model. The researcher also used a journaling technique during the coding process as a reflective means to ask questions about the data and to highlight potential divergent or emergent themes within the data. After each interview, the coded

data were reviewed for the purposes of confirming or disconfirming identified variables and paths within the causal model. Coded text linked to each variable and path was reviewed by the researcher, and the causal model was then revised based on the analysis. This process was repeated for the remaining 14 interviews, which resulted in a causal model that integrated Phase I and Phase II data analysis (See Figure 22). The evolution of the causal model is provided in Appendix D.

The balance of this chapter will (1) discuss specific results of the qualitative analysis linked to each variable and path within the Phase I qualitative model and (2) discuss variables and paths that have been added based on the qualitative analysis.

*Variables and Paths within the Phase I Causal Model*

The data analysis for this section will be discussed based on the following four questions, which are linked to the primary paths identified in the Phase I causal model:

1. How did participants view perceived legitimacy of the merit pay system and the influence of that perceived legitimacy on the adoption of the merit pay system?

2. How did participants view coupling of the merit pay system and its influence on legitimacy?

3. How did participants view ambiguity of the merit pay system and its influence on legitimacy?

4. How did participants view administrator use of power to influence the adoption of the merit pay system, and how did that use of power influence the perceived legitimacy of the merit pay system?

*Qualitative Question 1. How did participants view perceived legitimacy of the merit pay system and the influence of that perceived legitimacy on the adoption of the merit pay system?*

Four interviewees indicated the merit pay system had legitimacy. Six interviewees indicated the merit pay system had no legitimacy, and five interviewees indicated the merit pay system had elements that were legitimate as well as some aspects that were not legitimate.

With regard to those that perceived the merit pay system as legitimate, respondents characterized the merit pay system as "legitimate," "very legitimate," "fair," and a "good fit." Some interviewees clarified their responses by linking legitimacy to rewards, equal opportunity for rewards, evaluation criteria, and capacity of the institution to provide rewards. Specific comments included:

- It's legitimate in any institution of higher education and business because people respond to rewards.

- It seems fair. It seems that everybody is equal, on equal ground, although there are differences in positions.

- I think it is a good fit. I think there is merit to use it that way to encourage people to do a better job.

- If you are asking about the original first year's document and maybe the second year, they are not very legitimate documents. I think that what has evolved at this point potentially is a much more legitimate merit pay document in that it is clearly linked in the terms of the categories that are evaluated. It is linked to some other important documents, basically the tenure and promotion evaluation

documents. In that sense, it really is much more legitimate than anything we have had before.

- I think a merit pay system implemented correctly and in an evolving and informative way has legitimacy.

- I think that if we truly hold a standard of exceptional is exceptional, then merit pay can work very well.

- Yes, I do [think the merit pay system is legitimate]. The budget has to be able to accommodate those merit increases, but I think it is a good system.

Conversely, respondents also characterized the merit pay system as not being legitimate. Specific comments included:

- I don't think that right now it is [legitimate]. I think people need to, especially on the staff side of the house (the finance area, the student development area, and advancement), folks need to get used to being evaluated and understanding how their work performance affects them.

- I think there are still some questions about that [the legitimacy of the merit pay system]. There was not an opportunity for some folks to have as much input as they could have. People do not even know what their job descriptions were.

- Culturally, it was just such a far departure from what we had been doing. It was a radical, too radical, of a change.

- I don't think it had a legitimate fit. It did not do what it was supposed to do.

- There seems to be a lot of good reasons not to implement [the merit pay system].

- I don't see it as a good fit for us at all because we have a totally unreliable funding system.

- I'm not sure that it is legitimate to do merit pay if we are not doing some cost-of-living type things or even trying to raise everyone.

- I don't think it's a good fit in most parts.

With regard to adoption of the merit pay system, six interviewees indicated a change in their behaviors or activities to align with the merit pay system. One staff member indicated, "It has made me want to take more initiative. . . . It kind of has inspired me to take on more initiative, to look for more ways to improve what I'm doing." Similarly, an administrator commented,

> Some people really appreciated that it wasn't a good old boy system, and I think they worked toward getting a good evaluation. Some people tried to use the system, which we tightened it up afterwards, but tried to use the system. You could get credit for going and making a presentation. So they and a bunch of their buddies got together and went out and made a presentation where they just sat on a panel, and they really didn't do much work, if any, and they got credit for that. But at least they got off their duffs and did it. So, you know that's a positive thing.

However, the majority of interviewees had not changed any behaviors or activities to align with the merit pay system. Specifically, nine indicated they had not changed. Interviewees were asked, "What changes have you made in your own work production since the merit pay system was implemented?" Interviewees responded:

- Nothing except just trying to strategically package what I have done to fit the category. But, I'm doing exactly the same thing that I have exactly always done.

- I perceive myself as having done all of these good things, and yet you evaluate

me below where I perceive. So why should I do any of that?

- Zero. I'm going to keep doing what I'm doing, regardless.

- It is not an incentive for me. It's not like I'm going to say, "Okay I want to slack off, or gosh I could get merit pay." It has not had any impact.

- Actually, I would like to do less. That is my plan for my work future is to do less.

- None. I don't plan to make any changes.

- It really doesn't have an impact whether I do less or more. I'm just going to keep doing the same.

- As a result of the merit pay system? Well, you know what I'm going to say. Same old same old.

- I am doing the same job I was doing before and with about the same intensity.

- None, not really.

*Summary: Qualitative Question 1.* Finally, interview data appeared to confirm that perceived legitimacy was linked to the adoption of the merit pay system. As illustrated in Table 16, the four respondents that affirmed the legitimacy of the merit pay system also indicated a change in behaviors or activities to align their work production with the merit pay system. Similarly, the six interviewees that viewed the merit pay system as not having legitimacy did not move toward adopting the merit pays system.

Table 16

*Interview Responses to Perceived Legitimacy and Adoption of the Merit Pay System*

| Interview | Perceived Legitimacy | Adoption |
|:---:|:---:|:---:|
| 1 | Yes | Yes |
| 2 | Yes/No | Yes |
| 3 | No | No |
| 4 | Yes | Yes |
| 5 | Yes/No | No |
| 6 | No | No |
| 7 | Yes | Yes |
| 8 | No | No |
| 9 | No | No |
| 10 | Yes/No | No |
| 11 | No | No |
| 12 | Yes | Yes |
| 13 | No | No |
| 14 | Yes/No | Yes |
| 15 | Yes/No | No |

*Qualitative Question 2. How did participants view coupling of the merit pay system and its influence on legitimacy?*

Interviewees discussed coupling in terms of linkages with the innovation's goal, the university's mission, existing university processes, personal motivation, or personal goals. Six of the fifteen interviewees discussed the merit pay system as being tightly coupled to at least one of these aspects. Six participants indicated the merit pay system was loosely coupled to at least one aspect. The remaining three interviewees indicated

the merit pay system was tightly coupled to some aspects while being more loosely coupled to others.

Respondents identified the merit pay system as being tightly coupled to at least one of four aspects. First, seven respondents communicated that the merit pay system was tightly coupled to the innovation's goal of awarding performance-based salary increases. As noted by one interviewee,

> [The merit pay system] is more of a standard than across-the-board pay raises instead of kind of doing it helter-skelter with raises here and there and with some people making a lot more than other people. I think it is in line with what the university is trying to do.

Similarly, another respondent indicated, "If we go through this and we can identify those things that truly mean that you exceeded, [if] we have clearly communicated standards in all those areas, it can be a useful tool."

Second, five respondents indicated that the merit pay system was tightly coupled to the teaching, research, and service mission of the institution. These individuals explained that changes in behavior that align with the merit pay system would help the university better achieve its mission. As noted by one of the participants,

> I think that if everyone is doing what they're supposed to do and we are all getting high merit, then we are just that much more successful. By doing what we are all supposed to do, then that means that we are helping more students, [we are] promoting the university, we are looking for new grant money. We are doing all those things that we are supposed to be doing. All that together just has to add up to success.

Several of the interviewees, when asked about changing the framework of the merit pay system to align with seven institutional priorities, indicated that such a revision would still need to be coupled with the teaching, research, and service mission. As noted by one respondent:

> I think it would have been an entirely different looking document. It would have required us to reconceptualize entirely how we were going to go about doing evaluations. Now there are two different issues here. Evaluation of faculty is on teaching, scholarship, and service. If you wanted to do a merit pay evaluation or merit pay tied to accomplishing the seven priorities, many of which feed back into the three, you would have had to construct a merit pay document that asked you to take each of the seven priorities and figure out what it took to be meritorious upfront. . . . It would have been an entirely different looking document. In my opinion, it would have caused even more consternation on the part of faculty and staff because those seven priorities did not bubble up from below. They were imposed on the institution as part of the new president's vision for what he wanted us to do.

In effect, the respondent indicated a revised merit pay process linked to the seven priorities would need to accommodate the teaching, scholarship, and service mission of the university. The linkage to the traditional mission appeared paramount. The respondent even acknowledged that refocusing the document on anything but the three-fold mission would cause consternation. The interviewee also highlighted the importance of collaborative processes, a point that will be discussed later in this analysis.

The third university aspect to which respondents coupled the merit pay system was the university's existing evaluation criteria and process. As highlighted by one interviewee,

> The faculty handbook clearly provides guidelines for faculty as to the expectations of their job about teaching, research, and service. We were further able to define, and have defined, those through this process. So, then we can begin to talk about what it means to go beyond, to be meritorious, exceptionally meritorious.

Another interviewee shared,

> I think that what has evolved at this point potentially is a much more legitimate merit pay document in that it is clearly linked in terms of the categories that are evaluated. It is linked to some other important documents, basically the tenure and promotion evaluation documents. In that sense, it really is much more legitimate than anything we have had before.

In essence, respondents clearly communicated a tight linkage between the merit pay system and the historical evaluation criteria and process of the university. The tight coupling with the historical documents and processes increased legitimacy of the merit pay system.

Finally, two respondents viewed the merit pay system as being tightly coupled to their individual goals. As an example, one of the respondents noted,

> I think it [the merit pay system] has allowed us to move closer to one of my long-term goals, which is to tie the annual evaluations with promotion and tenure so that we ultimately emerge from this using the same document as a

basis for evaluation for all of those.

To summarize, the qualitative analysis indicated the merit pay system was perceived as tightly coupled to the innovation's goal, the university's historic mission, the university's existing evaluation process, and to individual goals. The data confirmed that tight coupling of these aspects increased the perceived legitimacy of the merit pay system.

Six participants indicated the merit pay system was loosely coupled to at least one of two aspects: the innovation's goal of awarding performance-based salary increases; and personal motivation. First, the data analysis indicated legitimacy decreased when the merit pay system was perceived as being loosely coupled to the innovation's goal. Previously, the analysis indicated legitimacy increased when individuals perceived a tight linkage between the innovation's goal and the merit pay system. In tandem, the data underscored that the legitimacy of the merit pay system was impacted by the degree to which individuals perceived that changes in their behavior or activities to increase work production that aligned with the merit pay system would result in a corresponding salary increase.

As noted by one respondent,

> It [the merit pay system] was dehumanizing. It created an atmosphere of a fictitious competition that was never to exist. . . .The difference between what they got in pay [was fictitious]. Most of us . . . never saw it as a competition. . . . But in their minds because it was tied to money, it became fictitious in that the difference between exceeds [expectations] and meets [expectations] was $200. It was laughable. And people were looking around at colleagues they had had for

years wondering who was going to pull the rug out from under them to get the exceeds and win the favor.

Similarly, another respondent explained,

> When I saw that there was not going to be very much money set aside for merit, I guess that is when I started thinking that the better role for our faculty is to get out there and push the incentive pay policy as a way to really make gains, as opposed to trying to deal with merit. You're always going to be disappointed at the end because there is just not much money there.

For one respondent the lack of reward opportunity even outweighed perceived legitimacy linked to coupling of the merit pay system to the university's historic mission. After affirming the linkage of the merit pay system to the historic mission, a participant was asked, "How did the linkage increase legitimacy?" The interviewee responded,

> I did not see it [linkage to historic mission] having much of an impact at all. I think a lot of that depends on the individual. First of all, the money, or at least the kind of money we are talking, is not a big driving force for me. I do not see any difference. I'm not sure. As I just stated, that money is going to affect the change.

Second, the data analysis indicated legitimacy decreased when the merit pay system was perceived as being loosely coupled to personal motivation. Seven interviewees, in general, shared that they were more intrinsically motivated than they were motivated by any reward associated with the merit pay system. As noted by one interviewee,

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I think my supervisor just did not understand the motivation of faculty, which is not necessarily the dollar. If I wanted to make $200,000, I would walk down the street and get a job down there. It is not going to be some piddly raise that would change things. . . . I, myself, do not feel motivated by money. Like when they say you can get a raise. Well I'm going to work and do my thing no matter what. I'm probably the lowest paid person on campus. That does not bother me.

Several interviewees linked motivation to work ethic. One interviewee commented, "I did not change the way I lead or act or my work ethic one bit because of his system." Instead, she noted, "I did it because of my work ethic and my support of the institution. Every job is worth doing well and to the best of your capacity." Similarly, another indicated, "I am pretty self motivated. A lot of my pride comes from the quality of work I do. I have always worked hard. It doesn't matter."

Still others linked motivation to the benefit of helping others be successful.

My reward for meritorious work here is in the students. I mean it really is. I guess a part of that is also being a part of an environment in which I grow. . . . I mean those to me are intrinsic values of doing a really good job and being committed and dedicated to what I do.

In summary, personal motivation appeared more linked to extrinsic motivators (nonmonetary recognition) and intrinsic motivators (worth ethic, self fulfillment, gratification in helping others be successful) than to any financial motivators linked to the merit pay system. It may be legitimacy decreased because individuals perceived the incongruence of the management innovation with personal motivation and that loose coupling of the innovation with personal motivation decreased perceived coupling.

*Summary: Qualitative Question 2.* In short, the data analysis associated with the second question confirmed that perceived coupling of the merit pay system to the innovation's goal, the university's historic mission, the university's existing evaluation process, or to personal goals increased the perceived legitimacy of the merit pay system. As illustrated in Table 17, three respondents, who affirmed the merit pay system was tightly coupled to at least one of these areas, labeled the merit pay system as legitimate. Conversely, perceived legitimacy decreased with the five interviewees that viewed the merit pay system as loosely coupled to the innovation's goal or to personal motivation. One of the interviewees (13) who viewed the merit pay system as tightly coupled did not perceive the merit pay system as legitimate.

On the whole, the interview data confirmed that perceived coupling of the merit pay system increased perceived legitimacy of the merit pay system. The data further explained coupling by identifying the importance of tight linkages with (1) the innovation's goal, (2) the university's historic mission, (3) the university's existing evaluation process, (4) personal motivation, and (5) personal goals. The analysis associated with coupling did not yield any new causal paths.

Table 17

*Interview Responses to Coupling and Perceived Legitimacy*

| Interview | Perceived Legitimacy | Coupling |
|-----------|----------------------|----------|
| 1 | Yes | + |
| 2 | Yes/No | +/- |
| 3 | No | - |
| 4 | Yes | +/- |
| 5 | Yes/No | +/- |
| 6 | No | - |
| 7 | Yes | + |
| 8 | No | - |
| 9 | No | - |
| 10 | Yes/No | + |
| 11 | No | - |
| 12 | Yes | + |
| 13 | No | + |
| 14 | Yes/No | + |
| 15 | Yes/No | +/- |

+=   more tightly coupled than loose; increased legitimacy
-=   more loosely coupled than tight; decreased legitimacy

*Qualitative Question 3. How did participants view ambiguity of the merit pay system and its influence on legitimacy?*

The first three interviewees were asked to identify inputs, processes, and outputs associated with their work units. None of the respondents could identify inputs or processes. Hence, interview questions were modified to focus on unit outputs.

All fifteen interviewees responded to questions related to identifying or defining unit outputs. However, as highlighted in the quotes below, many of these responses

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included unit processes rather than outputs, potentially indicating unit outputs were more ambiguous than definable. Specific comments included:

- I do requisitions for several different people, travel for a few. . . . I do a lot of things that you can't see.

- It is to create a learning environment and a co-curricular environment where our students can excel and where we can support the academic mission of the institution.

- In [the area I supervise] there has been so much ups and downs and changes of folks over there, I don't know that I can really answer that question for them.

- Good teaching is students succeeding, high teaching evaluations, students getting accepted to graduate school, successful in their jobs. Service, I do not agree with the way they defined the service. . . . Research, I have always wanted to see a little bit more research. . . . I do think that it helped to include all the things that we do in those three categories so that we could get more rewarded for the work we do.

- Products are graduates who are highly functioning and who get good jobs and who feel like they have been well served by the school. They [Faculty] should be good teachers. They should be able to mentor those students through the process of becoming professional business people. They should be active professionally in organizations that provide access for students.

- They are not easily defined. Teaching is hard, but the document we have produced makes teaching kind of easy, I think. . . . Research becomes one in which I think that because of the nature of the college it is very easy for me to

evaluate scholarship, even if it is not my field. Grants are real easy. There are

clear objectives standards.

- I would hope that the major product would be that you have well-educated, well

  prepared graduates who would be competitive in professional areas, that

  students who graduate feel really good about their educational experience, feel

  good about the University, and that we would feel good about our graduates who

  are out in the professional community, or whatever they are doing in the

  community that they would be contributing members of society and maybe that

  we had some part in that. . . . It would be that students are going on to graduate

  programs, that they are being successful there, that they are well prepared

  educationally. I would hope that we are contributing something to the body of

  knowledge at some larger levels.

- I think that the outputs are teaching, effective teaching. I think that is one of our

  outcomes. . . . I think that undergraduate research and grants are the other pretty

  strong output from the college.

- Graduates who are successful in the field that they have been trained in.

Additionally, interviewees were asked to describe the degree to which outcomes

could be measured. Four of the fifteen interviewees noted outputs were more

measurable than ambiguous. Six of the participants indicated outputs were more

ambiguous than measurable, and the remaining individuals indicated outputs had both

ambiguous and measurable characteristics.

Within these comments, four themes emerged regarding the measurability of

outcomes. First, six interviewees noted clear benchmarks increased legitimacy, and

conversely, the lack of clear benchmarks decreased legitimacy. As noted by one of the participants, "I think benchmarks are critical." The interviewee then elaborated,

It was difficult to identify benchmarks. At first they [faculty] didn't even want benchmarks, but then they saw how all of that could lead to unfairness. So they had to go ahead and do benchmarks. Once we got an agreement on the benchmarks, I think that's when things started to appear much more fair.

Furthermore, one staff interviewee noted benchmarks were not easily measured. The participant commented, "I do a lot of things that you can't see. I think that I was evaluated on my loyalty and willingness to work to do whatever it takes to get my work done. Maybe I mean things that the ordinary person could not see." Then the participant confirmed, "It would be easier for them [supervisors] to have it to judge [the things that you can see]. Doing them [requisitions] in a timely manner, getting things done. That is something that you can see."

Expressing the impact of unclear benchmarks, one interviewee commented on the process by which faculty had to apply to be awarded exceptional merit. The interviewee noted,

Either you have a set of standards that you meet, or you don't have. To just say that you've met the threshold and now you have to apply. . . . If we have to have an analysis after the fact, then we did not clearly define the standards. That is the problem that I have had with this all along. I felt like we never clearly defined the standards. If we did, it would not even be an issue. It should be in black-and-white. If it is not, if there is ambiguity in there, then we did not do the job we needed to do.

The interviewee was concerned about the threshold, or trigger, for determining

exceptional merit. The interview data consistently highlighted difficulty in establishing

triggers linked to levels of performance, more specifically "bright lines" that

distinguished merit from exceptional merit.  As noted by one interviewee, "I think that

fundamentally I agree with merit; however, I think that it is difficult to determine what

is above and beyond." Interviewees noted that identifying these bright lines was equally

challenging for faculty and staff. On the faculty side, one interviewee noted,

> The president said over and over again, "a bright line." This marks going from
>
> merit to exceptional merit. . . . Even with our experience, I think we had real
>
> difficulty drawing those bright lines in which we thought we were creating clear
>
> demarcation between merit and exceptional merit. . . . The one area where we
>
> had the least applications was in teaching. . . . As a school that prides itself on
>
> being an institution about teaching, it was a bit troubling that we were giving
>
> more merit for research than for teaching.

The interviewee then discussed similar difficulties associated with determining

exceptional merit for staff. The interviewee shared,

> For staff members, especially take support staff, their job starts at eight in the
>
> morning. They get a lunch hour, and it ends at five o'clock. Even when they do
>
> things that are above the 8 to 5 scope, we have in place mechanisms about comp
>
> time. . . . Quite frankly, I don't want my administrative assistants working
>
> beyond 8 to 5 trying to find things to do other than their job. I want them to
>
> perfect doing their job. . . . For some professional staff, you could see some
>
> parameters of above and beyond, but still even there, we still want professional

staff doing their job. If beyond their job, they are thinking about better ways to do their job that innovate for us, we need some mechanism to reward them for that idea. Within the context of their job, we don't want them searching for new things to do that may take away from their job.

A second theme that emerged was the importance of processes used to establish benchmarks. More specifically, ten interviewees communicated the importance of an iterative process that involved key stakeholders in defining benchmarks. Participants seemed to indicate that these iterative dialogues provided opportunities to increase measurability and to develop common understandings. Comments further indicated the importance of these interactions at the institutional level and at the individual level. At the institutional level, the data appeared to reflect that legitimacy increased as more stakeholders were involved in defining measures and as the institution collectively had opportunities to experiment with the measures and then to refine those measures. One interviewee discussed the importance of the institutional process in establishing benchmarks for faculty. The participant reflected,

> . . . working through faculty Senate and the committee, we came up with that plan for the first year of 2006-2007, which was sort of jointly negotiated between faculty Senate and academic administrators as to what would constitute a merit evaluation. We met that summer at great lengths working on the document. We came up finally with a document that basically pleased no one and had some serious problems in it. We went through the process. The end result was not workable that first year. So, that first year we backed off. In 2006 – 2007, we did a cost-of-living increase as you remember. Then, we went back

to work the following summer, the summer of 2007, and really did create a merit

pay document for faculty that had some genuine triggers and marks in it that

were workable. That is what we finally implemented and have continued to

refine.

While not reflecting the same collaborative process as others identified, the following

statement, nonetheless, underscored perceived importance of a collaborative process.

When the [faculty senate] committee writes the plan and gives it to the

administration . . . , then it becomes something different than what we wrote,

and it is not implemented in a way that we anticipated it to be implemented. We

felt really good about what we had done, but then when it turned out to be

altogether something different in which the faculty had very little say. For

example, the thing about if you were to get meritorious teaching you had to have

a score on your teaching evaluations of some number. . . . It's just a silly number

that someone pulled out. . . . It should change, but apparently it is not changing. .

. . It became very closed off. They did not want to talk about it anymore. They

were just done debating with the faculty about it.

While the faculty benchmarks, to some degree, seemed to have been developed through

collaborative processes that included key stakeholders, the development of staff

standards was driven primarily by a few senior level administrators with little or no

input from staff. One respondent noted, " . . . it's easier with the staff to push it. You can

just say we're implementing it. So it is not the same as with the faculty where you get

buy-in. So we just implemented it. It was a top-down approach." The data seemed to

indicate that this lack of staff involvement decreased legitimacy. As shared by one interviewee,

> With the staff, they did not know anything about it until it was already done. There was no staff input to the document at any point, I don't believe. Certainly I don't think my secretary had any input. The document was kind of created off - base and imported in. . . . I think the staff were very suspicious.

While the respondents indicated that staff were not involved in establishing the initial benchmarks and that this lack of involvement decreased legitimacy of the merit pay system, another interviewee discussed the importance of a collaborative process that did involve staff which occurred in the spring of 2009 prior to the third implementation cycle of the staff merit pay system. The respondent noted,

> Last week [we] went to the staff counsel, and we told the staff counsel you will be evaluated again, and we will use the form. . . . Where is their real rub with the staff? Without question, they don't mind being evaluated. The rub was that there were three options: (1) doesn't meet; (2) meets; or (3) exceeds. The rub was that somehow it all got tied to $200. Here's what they said, "Yes, we want to be evaluated. What we would like for you to do is drop that third category, and make that an additional competition." So that's all it took. Now they can help us design a system with markers that they all buy in. . . . And then they suggested that we meet, and then they want to take it before all the staff and have an afternoon meeting to go over what we all have agreed on. . . . There is a solution that is legitimate.

Interviewees also communicated the importance of collaborative processes at the individual level. Interviewees consistently communicated the value of working with their supervisors to define benchmarks and expectations related to those benchmarks. As noted by one interviewee,

> He [my supervisor] has very specific and measurable things that I am working toward. I think that he also understands that taking all that time up front and laying those out makes it easier when you go to evaluate someone.

When asked how the evaluation measures were set, the interviewee noted, "I wrote up a list, and then met with him about it. We then worked through each item. . . . He said, 'Well, how are you going to measure this?' So I had to go back and think about how to measure that." Then the respondent shared, "I think he [my supervisor] has done the most thorough evaluation that I have ever had."

The third theme associated with developing clear benchmarks was the importance of linking benchmarks to specific job functions.  Eleven interviewees mentioned the importance of benchmarks being tied to specific job junctions. The data seemed to indicate legitimacy increased when benchmarks were linked to specific job functions, and conversely, legitimacy decreased when benchmarks were not linked to job functions. As noted by one interviewee, "I think the [merit pay] form is better. It reflects a lot of the important work that we are doing in a way that was not done before. I think that is good."  One supervisor noted, "It will force us to make sure our job descriptions are detailed and articulated because how can you evaluate if you're not sure what your job is." The importance of linkages to specific job functions was further underscored by an interviewee who noted, "[my merit evaluation] was more general

terms, general type things. I think that if there was more specificity to details of my job, it might be a little better." And as shared by one respondent, "many people have so many different jobs here on campus, I don't think it is really easy to put everybody on the same kind of scale. I think it may need to be more individualized by department or positions."

Perhaps most telling of the importance of benchmarks being linked to job specific functions, were the events shared by one interviewee related to the disconnect between the benchmarks and their actual job. The interviewee noted,

The second year was a little more thorough, and I perceived at that point that [my supervisor] did not know what the heck I had done during that year, and it was very demoralizing for me. I really had a hard time because I felt like I had done many things above and beyond the call. [My supervisor] did not even recognize that those things had been done. I felt like I had been sucker punched at that point. . . .Undoubtedly, she had not perceived that same thing, or not even recognized the effort that had gone into those things or perhaps did not even know that I had been doing those particular things. So I really felt . . . I started looking for a job basically is what I did at that point.

Consistency was the fourth theme associated with clear benchmarks. Nine interviewees shared that benchmarks increased the legitimacy of the merit pay system when implementation processes (1) consistently defined benchmarks across the organization; (2) evaluated individuals using consistent processes; and (3) consistently supported opportunities for faculty and staff to earn merit. As noted by one individual, "I just think it helps across campus to know that everyone is being judged basically on

the same terms." Another participant described the challenges in implementing consistent evaluation process, "The challenge I see in merit pay is that you have to evaluate people fairly and accurately and really put a lot of effort into how you evaluate performance." As noted by one participant, the lack of consistency led to decreased legitimacy. The participant noted, "I don't think there was a consistency of understanding. This is obviously a whole lot of levels removed from the president on down, but I don't think there was a consistency of understanding about the merit pay in general."

One surprising area discussed by interviewees was the importance of consistent support and opportunities for individuals to earn merit. A staff member was the first to discuss this importance. The participant noted, "My job calls for me to work from 8 to 5. There isn't something that causes me to work after that, and I am being judged against people who may see that their job requires that." Another interviewee elaborated,

> When the other people go to the symposiums, conventions, and things that is part of their work. I just sense that it gets measured in a different way, or at least they feel that it does. . . . I think it just doesn't make it as much of an incentive as it would probably if it meant something. . . .Maybe something could be put into place for the underdogs to improve it, and I don't know what it would be. You know I can't go to national conventions. I can't go to very many things at all. I don't know what I can do except try to improve in everything. I do try to do that.

As shared by one participant, this lack of constancy increased ambiguity and decreased legitimacy of the merit pay system. The interviewee shared,

> I think, with some justification, a good many staff believe that they come in and do their job and it is really hard for some staff to perform above and beyond what their job is. There just is not the opportunity to do that. As a result, staff have become very negative about what we did.

*Summary: Qualitative Question 3.* In answer to the third question, data analysis confirmed clearly defined outputs that included measurable benchmarks linked to job-specific functions and implemented consistently increased perceived legitimacy of the merit pay system. As illustrated in Table 18, four respondents who labeled outputs as more defined than ambiguous perceived increased legitimacy of the merit pay system. Conversely, five of the interviewees who shared outputs were more ambiguous than defined perceived the merit pay system as less legitimate.

On the whole, the qualitative analysis confirmed that clearly defined outputs increased legitimacy of the merit pay system. The data further explained the role of outputs by identifying the importance of (1) measurable outputs; (2) job-related outputs; and (3) clear benchmarks, or bright lines, linked to those outputs. The interview data also warranted the expansion of the causal model to include two additional paths: (1) development processes→ambiguity; and (2) implementation processes→ambiguity. Interviewees characterized the development process as: (1) dialogue; (2) collaborative; (3) experimental; (4) iterative; and (5) occurring at the individual and organizational level. With regard to the implementation processes, interviewees noted the importance

of (1) consistent evaluation processes; (2) consistent definitions tied to benchmarks; and

(3) consistent support of opportunities for faculty and staff to earn merit.

Table 18

*Interview Responses to Ambiguity of Outputs and Perceived Legitimacy of the Merit Pay System*

| Interview | Perceived Legitimacy | Ambiguity of Outputs |
| --- | --- | --- |
| 1 | Yes | More defined than ambiguous |
| 2 | Yes/No | Elements of both |
| 3 | No | More ambiguous than defined |
| 4 | Yes | More defined than ambiguous |
| 5 | Yes/No | Elements of both |
| 6 | No | More ambiguous than defined |
| 7 | Yes | More defined than ambiguous |
| 8 | No | More ambiguous than defined |
| 9 | No | More ambiguous than defined |
| 10 | Yes/No | More ambiguous than defined |
| 11 | No | More ambiguous than defined |
| 12 | Yes | More defined than ambiguous |
| 13 | No | Elements of both |
| 14 | Yes/No | Elements of both |
| 15 | Yes/No | Elements of both |

*Qualitative Question 4. How did participants view administrator use of power to influence the adoption of the merit pay system and how did that use of power influence the perceived legitimacy of the merit pay system?*

Consistent with the Phase I model, the qualitative analysis confirmed the perceived use of referent, expert, and coercive power by administrators influenced the perceived legitimacy of the merit pay system.

*Referent power.* Nine interviewees confirmed that administrators used referent power to influence the adoption of the merit pay system. Interviewees often discussed the use of referent power in terms of the willingness of administrators to have conversations about the merit pay system. As noted by one interviewee,

> He explained it very well. He told me exactly how it would be used, and where I would fall, and kind of gave me the criteria for doing what is expected and not doing what is expected. He even gave me examples of what he would consider below expected performance and then also went on to explain what would be above and beyond that would qualify for higher merit pay.

The interviewee continued,

> I think that because he was positive about it and his feelings towards it were positive, it would have taken away from any negative that I felt towards it. With him explaining it to me, [it] made me a lot more comfortable and took away any doubts and questions that I may have had about it. I think that has positive feelings about it reflected back on me.

One administrator shared how he tried to "engender trust" with his staff by "allowing them a safe place to express their frustration." He then elaborated,

What I use with my staff is, 'are you talking to Bob, or are you talking to Dr.

Smith?' When you talk to Dr. Smith, you're talking with me in my role as your

supervisor. When you're talking to Bob, you're talking to me, as much as is

possible, as a colleague in a safe place.

Respondents indicated that administrators had these types of conversations with

individuals and groups. When asked how administrators influenced the adoption, one

respondent replied,

[through] meetings with groups explaining what the process was going to do. I

know that he met with the entire faculty. He met with faculty senate. He met at

least with the departments for my college. He met with individuals. I think those

things are important.

These dialogues were characterized as "open," "honest," "calming," "good faith,"

"continuing discussions," "personable," and "trying to support them." Respondents

described their administrators as "very fair," "positive," "responsive,"

"understanding," "reasonable," "upfront," and "accessible." Respondents also

explained that these administrators listened, discussed issues, and then responded based

on the discussion. An interviewee shared, "He [my supervisor] always listened to me.

He never cut off the discussion. . . . As a result of our continuing discussions, he

changed his mind."

Interviewees indicated these conversations most often focused on clarifying

processes and providing detailed information. As noted by one interviewee,

I think success, at least within my college, was that my supervisor kept talking

about it as a process. It was not a finished product. I tried to keep conveying to

faculty that we are all learning together. Whatever successes we had came from

everyone trying to understand that it was a process. It was not an end.

Another supervisor noted,

I could go to my staff and try to frame this in a positive way, but also be open

with them about what I perceived to be the negatives. There is lots of literature

out there on merit pay, positive and negative. I know what it says. He [my

supervisor] mainly influenced me through just talking and through sharing his

beliefs.

As noted in the previous two quotes, these conversations facilitated meaning making

and the development of shared beliefs, which appeared to increase the legitimacy of the

merit pay system. These conversations, as will be discussed later, also encouraged

administrators to develop and share their knowledge and understanding to influence

how individuals perceived the legitimacy of the merit pay system; thus dialogue also

facilitated the use of expert power.

The interview data also indicated that legitimacy of the merit pay system

decreased when these conversations were absent. One individual clearly indicated how

the absence of conversation adversely impacted the individual's perception of the merit

pay system. The participant explained,

I did not even read my evaluation. I assumed it was going to be what it was

going to be. I did not buy into the process that we were involved in. He handed

me a letter. I signed it. I did not read it because it did not matter what I thought

at that point. Once those perceptions are made by your supervisors you can

argue the point, you can push the point, but does that affect you positively or

negatively when you do that? You have to make that decision. I made the
decision with him that if I argue the point it would be perceived negatively, and
I did not read my letter. I signed it. I cannot tell you to this day what it was. . . .
All I heard from him was his perception of me.

To summarize, the data seemed to indicate that administrators through
conversations with individuals and groups developed mutual understandings of the
merit pay system and its measures. These development and implementation processes
facilitated the use of referent power by administrators which increased the perceived
legitimacy of the merit pay system.

*Expert Power.* Second, seven interviewees confirmed that administers used
expert power to influence the adoption of the merit pay system. Two common themes
emerged related to expert power.

Expert power was used when administrators shared personal knowledge and
details about the implementation of the merit pay system. Interviewees noted the
following:

- [My supervisor] knew exactly what he was doing.

- [My supervisor] explained it very well. He told me exactly how it would be
  used, and where I would fall, and kind of gave me the criteria for doing what is
  expected and not doing what is expected. He even gave me examples of what he
  would consider below expected performance and then also went on to explain
  what would be above and beyond that would qualify for higher merit pay.

- [My supervisor] did come to a couple of meetings and answered some questions.
  "How is this going to go? What happens if there is no money? You know we set

ourselves up to get these bonuses and then there's no money, what do we do?"

In those meetings he appeared to be very open to questions and reasonable about it. He was also very upfront. I remember what one faculty member asked him if he thought that this was an unethical system. He said, "No, I don't. You work hard. You get money." The meetings were really effective and calmed a lot of fears about the system.

- He has very specific and measurable things that I am working toward. I think that he also understands that taking all that time up front and laying those out makes it easier when you go to evaluate someone.

Two interviewees noted that the lack of supervisor knowledge related to the merit pay system decreased legitimacy of the merit pay system. One interviewee who had not received a favorable merit review indicated the administrator did not know what he was doing or did not care what he was doing. When asked which influenced the supervisor's decision, the interviewee noted,

I think both. I think she had forgotten to think about some of them. I just think that when she looked at my job description and what she expects of me. Yes, I do all of those things I think that she expects of me, which means I am doing my job. Okay. I think that when she was thinking about that she did not think around the edges. She did not think about what other things that I was involved in. I think both of those would be true.

Another interviewee expressed frustration with administrators who were unable to tell her consistently how to complete the evaluation form. She noted, "I just think that it is so unclear about what goes where because that seems to be a big deal. 'What goes

where?' 'This really belongs here and this really belongs there.' Well, tell me it belongs here."

Second, interviewees noted that administrators used expert knowledge when they shared research and literature related to the merit pay system. One interviewee noted the administrator "would provide us with literature about the evaluation process from other institutions, from sort of the academic side of studying the evaluation." Another noted, ". . . he did research to point out other models that had been tried. He talked about some of the successes."

In summary, administrators used personal knowledge to provide details related to the merit pay system and also shared knowledge gained from research literature to increase understanding of the merit pay system. In other cases, some interviewees indicated administrators lacked knowledge related to the details for the merit pay system or lacked knowledge related to actual job performance. From the interview data, it appeared that perceived use of expert power of administrators to answer questions and provided details related to implementation of the merit pay system increased legitimacy of the merit pay system, and conversely, perceived lack of knowledge decreased perceived legitimacy.

*Reward and Coercive Power.* Before examining data related to the administrator use of coercive power, it is important to understand how interviewees discussed the use of reward power. As communicated by one interviewee a "merit pay system is a reward system that individuals who are willing to work toward extending our standings will receive a higher reward than those who are not willing to do so." Similarly, another interviewee indicated, "Well, I think it [the merit pay system] was an attempt to try to

reward faculty for going the extra mile and to not reward faculty that obviously were falling short of their responsibilities and probably the latter more than the former." All fifteen interviewees identified this two prong purpose of the merit pay system: to reward those who are performing well and to not reward, or punish, those who are underperforming.

It is within this two-prong purpose that respondents discussed the influence of reward and coercive power. First, thirteen of the respondents shared that the rewards were minimal, nonexistent, or never a reality. Specific comments included:

- . . . we weren't even able to give out the money in that system very well because of the little amount of money we had.

- I think the biggest problem we have with the merit system right now is no money. Some people are saying, 'What does it matter if I'm evaluated high or in the middle or even towards the bottom. As long as they don't fire me, there is no money.' So, there is no reward. If you put in a merit system, you've got to have a reward system.

- The second year when we had the new document and really went through the process and determined, as it turned out, that a third of the faculty hit the exceptional merit trigger, then we came back and did not have money to put into it. . . . The decision was made to just simply do stipends based upon whether you did not meet standards: you got nothing; met the standards: you got an amount; were exceptional: you got more. That was a stipend. It did not stay in your salary. It was pretty minimal. I think that may have had the most negative effect upon continuing perceptions and doing evaluations to lead to merit pay. I have

heard from [some individuals] that it was a stupid, horrible process that did not lead to more money, which is what they wanted out of it.

- It was a real killer of morale both on the faculty side and the staff side in that great promises were made that merit would reward people and there were no real tangible rewards.

- I don't think it [the merit pay system] is very effective because obviously there has not been any money. If you're connecting evaluation to pay or reward or to whatever you want to say, I do not think it achieves that.

- I don't think that we can do a merit evaluation every year without money. . . . I feel like you have to put some real money into it. I think it would be much easier that if you did not have much money to put into it to just give across-the-board raises. I think people would be far more accepting of that situation then they would setting up standards for them to meet and then the value degraded as a result.

- From what I've seen in higher education given the fact that there is always a limited pool of money, I'm not sure how you build a merit pay system that is going to work. I think maybe in an industry model – where I'm not sure they have unlimited money, but maybe money is not quite so tight – that kind of reward system will work. AIG will give their people bonuses whether it bankrupts the company or not. I am sure they were meritorious. If we have a limited piece of pie and you don't have enough to really do any cost-of-living raises, how can you justify spending more money to do merit pay particularly if you're not convinced that money affects change in people?

- I also think that in higher education, particularly in a state-supported institution

  where limited funding is available, unless you have a true meaningful reward

  that you can attach to merit pay, I'm not sure that it fits very well in the system

  that we have.

Interviewees also emphasized the importance of reward from a nonmonetary

perspective. They often noted the importance of recognition by administrators and

peers. As noted by one administrator, "I don't think they were motivated by money.

They just saw that 'Wow, they really are paying attention to me.'" In another

conversation, the importance of administrator recognition was also discussed; however,

in this conversation, the lack of recognition became a disincentive.

Interviewee:    I am not an extrinsic person. The intrinsic reward of being

                recognized for a job well done was far more important than any

                amount of money.

Interviewer:    Can you talk about intrinsic reward? Was some of that tied to

                your supervisor?

Interviewee:    Yes, absolutely tied to her because she is very important in my

                world. Because I do always function with such great loyalty and

                service, I always try to do everything I do as quickly as I can do it

                and as well as I can do it. Now understand there are some things

                that are just part of the job, but I had also been called on to do

                huge projects that were not anywhere related to my job. I think

                that is what got me the second time around, but it wasn't whether

                I got merit or no merit or some merit, it was the fact that she did

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not perceive what I was doing. It was personal. Okay, it got

personal at that point.

In essence, the interview data appeared to confirm the absence of monetary and nonmonetary rewards and the absence of administrator use of reward power adversely influenced the legitimacy of the merit pay system and its subsequent adoption.

Second, the discussion of coercive power occurred within the context of the two prong purpose of the merit pay system: to reward those who are performing well and to punish those who are underperforming. Thirteen interviewees indicated the perceived use of coercive power by administrators adversely influenced legitimacy of the merit pay system. Within these responses, two themes emerged. Respondents often discussed the use of coercive power in terms of the removal of an entitlement, cost-of-living adjustments, and they indicated the loss of the entitlement was seen as coercive in that the only way to receive pay increases was to participate in the merit pay system. Interviewees shared the following comments:

- On the staff side, the problem I think is that they're getting paid, a lot of them, especially at our university, so low. The salaries are so low that a lot of people say, 'I just need a living wage. Why are you messing with me, and saying I don't get more money.' They don't understand that if you work harder you could make more money, and so do that. They're saying 'Hey, I've got to feed my family."

- I think it is exactly what was needed at the time, and I'm just disappointed that, as everyone is, about the economy that it really doesn't have the rewards. I mean it is a reward system but, when you have no rewards it makes it hard to push people forward. Why do you want to evaluate someone poorly other than if you

wanted to terminate that person if you can't reward those who are doing well?

- This [the merit pay system] was just striking at people's hearts and their wallets, which is even worse. If perhaps, he had waited. It was kind of like he [my administrator] came in and said, "Oh well, this is not working, and you're not of value. Why are you getting paid?" It was almost like, I felt like he was doing it because he thought we were not good enough. I think a lot of people had that feeling. . . . It seems like he thought the reason we were doing it was because we were lame, and he needed to pump us up a little bit.

- The real crux and opposition at whatever level and rank, junior or senior rank, to doing merit pay was that it was all merit pay or nothing. The traditional cost-of-living increase was set aside. That is what offended or upset many faculty, whether they were junior faculty or senior faculty, more than anything at all.

- I believe the administrator was less interested in merit and was more interested in the no merit side. I think he was interested in having a mechanism in which he could say there were large numbers of people who were not doing their jobs. I think he was quite shocked to discover how many people were doing more than their job.

- I think both sides [faculty and staff] actually saw it as an insult at one level. That somehow, somewhere, someone was thinking that they were not doing their job. That will be a struggle that we face for a long time-sort of an "us versus them" mentality with the administration being the "them."

- It was a real killer of morale both on the faculty side and the staff side in that great promises were made about merit would reward people and there were no

real tangible rewards.

- My perception was that it was implemented, and I did attend quite a few of those meetings, so kind of my perception was that it was almost implemented to address personnel issues that were not being addressed because that was something I kept hearing, "We can identify the dead wood and to put in measures to try to help people improve their performance because we have not done a very good job of doing that."

- My problem with the merit system is that that we do not put enough money into the merit on a consistent basis. I don't see us being able to do that on a consistent basis. I think we are whipping a lot of horses and not getting anywhere.

- People are tired of doing the same thing and getting paid less, less effectively in that the cost of living has gone up and perhaps inflation. People might feel justified in doing less quality work because of that. People might be less motivated to come to work, or to try something new if her supervisor asked them to do it, or they might leave.

- Everybody that is doing a good job should be making a living wage, or a decent wage. If the only way that you can reward people for merit is to reduce what you're doing for others, then I think the limited pot of money that education seems to get regardless of where you at, that seems to be one of the sticking points I think, certainly one of the problems with implementing it.

- They are upset with the university. They're upset with the college because we are having to do this. They do not feel it is right. They did not like the track that

we were taking. They were afraid. They thought it was wasted time because all of them knew going in that universities don't have any money. Why are we doing this for $500? It does not make any sense. We are putting people against each other. Being forced to go out and do professional development activities that we are not even supported to do. We have a very limited travel budget. We have very limited time. We have a small faculty that have to do already so many other things, and now we're being told that that if we don't do these other things, we might not even get the little cost-of-living increases that we used to get.

Interviewees repeatedly discussed being coerced into adopting the merit pay system through conflicting statements made by administrators. For example, one interviewee noted, "I think we got mixed messages all along the way. 'Everyone can achieve merit,' but 'Merit means merit.' He [the administrator] would say that sometimes in the same meeting." The interviewee continued, "With those two mixed messages coming from the very top, faculty, depending upon what they wanted to hear, came into the process with very different expectations."

The adverse impact of these conflicting messages was perhaps most reflected in a conversation with one of the staff members.

> Interviewer: Let's say that everyone across campus did the best they could to score the highest they could on the merit pay system. What do you think the impact would be on the University?
>
> Interviewee: Well, the university would think there is something wrong.
>
> Interviewer: Why?

Interviewee:   I don't think that you are allowed to score that high, to get an

evaluation that would put you at the top. I just don't know. You'd

have to be perfect to do that, and that is not me.

The second theme that emerged was the use of specific terminology that

reflected coercion. Common phrases that reflected the use of coercive power included:

"top-down," "terminated," "push people forward," "retribution," "hurtful," "get rid

of," "unfair," "striking at people's hearts and wallets," "lame," "not good enough,"

"suspicion," "fictitious competition," "bully pulpit," "beaten," "imposed,"

"resented," "shoved at you," "whipping a lot of horses," "having to do this," and

"forced." Specific interviewee comments included:

- . . . with the staff there is less difficulty because it's a top-down arrangement.

  You know, it's more like a business. We are going to do this. We would like for

  you to buy into it, but if you don't too bad. I hate to say it that way, but the

  bottom line is there is a top-down relationship in the staff. People can be

  terminated for insubordination if they don't go along with the system.

- I mean it is a reward system, but when you have no rewards it makes it hard to

  push people forward. Why do you want to evaluate someone poorly other than if

  you wanted to terminate that person if you can't reward those who are doing

  well?

- It [the merit pay system] was not being seen as a positive. It was being seen as a

  negative. It was being seen as – retribution is too strong of a word, but I can't

  think of another one right now – that it was hurtful.

- I think there were some staff who thought that this was a way to get rid of them.

They did not have a standard that they knew that they were supposed to be working toward. "How can you judge me and then base my raise, which was very limited anyway, on what I did not know I was supposed to be doing. It is unfair to tell me now when you did not tell me in the front end.

- This was just striking at people's hearts and their wallets, which is even worse. . . . It was almost like I felt like he was doing it because he thought we were not good enough. . . . It seems like he thought the reason we were doing it was because we were lame, and he needed to pump us up a little bit.

- I think that the document to me appeared to come from a place of suspicion. "We're going to ferret out every last thing you're doing. We're going to make you put it on a form."

- It [the merit pays system] created an atmosphere of a fictitious competition that was never to exist.

- . . . a bully pulpit is not always bad, but I would not have beaten the people down.

- It [the merit pay system] was imposed so quickly without getting the populace ready for what was about to happen or why it was being done. That ruined the effectiveness of it. Also, people resented it.

- I think because there were so many different ideas about really what it was. I think it made it difficult to implement because I don't think there was a lot of support for it. I think that made it difficult. I think the lack of support ends up with the idea that this is being shoved at you. So, then it does become resistance.

- My problem with the merit system is that that we do not put enough money into

the merit on a consistent basis. I don't see us being able to do that on a consistent basis. I think we are whipping a lot of horses and not getting anywhere.

- They are upset with the university. They're upset with the college because we're having to do this. They do not feel it is right. They did not like the track that we were taking. They were afraid. They thought it was wasted time because all of them knew going in that universities don't have any money. Why are we doing this for $500? It does not make any sense. We are putting people against each other. Being forced to go out and do professional development activities that we are not even supported to do. We have a very limited travel budget. We have very limited time. We have a small faculty that have to do already so many other things, and now we're being told that that if we don't do these other things, we might not even get the little cost-of-living increases that we used to get.

In short, individuals indentified a two prong purpose of the merit pay system: to reward and to punish. The analysis indicated administrators had limited opportunity to use reward power due to a lack of funding. In the absence of funding, interviewees perceived the use of coercive power as the primary means of implementing the merit pay system. The analysis further suggested the perceived use of coercive power by administrators adversely impacted the perceived legitimacy of the merit pay system.

*Summary: Qualitative Question 4.* In summarizing the qualitative analysis associated with the fourth question, the interview data indicated that administrator use of power influenced the perceived legitimacy of the merit pay system. As illustrated in Table 19, the four respondents who affirmed legitimacy of the merit pay system also

indicated the use of referent, expert, and reward power by administrators contributed to increased legitimacy. One of the interviewees also indicated the use of coercive power decreased the legitimacy but overall maintained that the merit pay system was a good fit for the university. Of the six respondents who indicated that the merit pay system was not legitimate, one interviewee noted the negative influence of referent, expert, and coercive power outputs; one interviewee noted the negative influence of referent, coercive, and reward power; two interviewees noted the negative influence of coercive and reward power; and two interviewees noted the positive influence of referent and/or expert power and the negative influence of coercive and reward power. In essence, the data appeared to indicate the negative influence of coercive and reward power on the perceived legitimacy of the merit pay system, and hinted that the negative use of coercive and reward power had a greater influence on perceived legitimacy than referent and expert power.

On the whole, the interview data confirmed that the perceived use of referent and expert power by administrators increased perceived legitimacy of the merit pay system. The data also confirmed that the perceived use of coercive power by administrators decreased perceived legitimacy of the merit pays system. The interview data further explained coercive power through associations with (1) removal of entitlements to cost-of-living increases; and (2) failure to deliver monetary rewards. The qualitative analysis associated with power warranted the addition of one new variable: reward power; and four paths: (1) development process→expert power; (2) development process→referent power; (3) implementation process→expert power; and (4) reward power→legitimacy.

Table 19

*Interview Responses Related to the Perceived use of Power by Administrators and Perceived Legitimacy of the Merit Pay System*

| Interview | Perceived Legitimacy | Referent Power | Expert Power | Coercive Power | Reward Power |
|---|---|---|---|---|---|
| 1 | Yes | + | + | | +/- |
| 2 | Yes/No | - | | - | - |
| 3 | No | - | - | - | - |
| 4 | Yes | + | + | - | + |
| 5 | Yes/No | | | - | - |
| 6 | No | | | - | - |
| 7 | Yes | + | + | - | + |
| 8 | No | | | - | - |
| 9 | No | + | | - | - |
| 10 | Yes/No | + | + | - | - |
| 11 | No | - | | - | - |
| 12 | Yes | + | + | | + |
| 13 | No | + | + | - | - |
| 14 | Yes/No | + | | - | - |
| 15 | Yes/No | + | - | - | - |

+ =     type of power discussed in terms of increasing legitimacy
- =     type of power discussed in terms of decreasing legitimacy
Blank = no response

*Summary: Phase II Qualitative Analysis*

Thematic analysis qualitatively confirmed, explained, and expanded the Phase I causal model. The analyses confirmed (1) perceived legitimacy influenced the adoption of the merit pay system; (2) legitimacy of the merit pay system increased as individuals perceived greater coupling of the merit pay system to the innovation's goal, the

university's mission, existing processes, personal motivation, and personal goals; (3) legitimacy of the merit pay system increased as individuals perceived increased clarity of outputs; (4) increased perceived use of referent power and expert power by administrators increased the perceived legitimacy of the merit pay system; and (5) increased perceived use of coercive power by administrators decreased perceived legitimacy of the merit pay system.

Qualitative analysis further explained the Phase I causal model by identifying three new variables and 20 characteristics. Table 20 summarizes the new variables and characteristics added to the model.

Table 20

*Characteristics Added to the Causal Model Based on Qualitative Analysis*

| New Variable | Existing Variable | Characteristics Added |
|---|---|---|
| | Coupling | Linkage to innovation's goal |
| | | Linkage to existing mission |
| | | Linkage to existing processes |
| | | Linkage to personal goals |
| | | Linkage to personal motivation |
| | Ambiguity | Measurable outputs |
| | | Job-related outputs |
| | | Clear benchmarks |
| | Coercive Power | Removal of entitlement |
| | | Failure to deliver |
| Reward Power | | Monetary |
| | | Nonmonetary |

| Development process | Dialogue |
| --- | --- |
| | Collaborative |
| | Experimental |
| | Iterative |
| | Individual & Organizational |
| Implementation Process | Consistent processes |
| | Consistent definitions |
| | Consistent support |

Finally, the Phase I causal model was expanded as a result of qualitative analysis. Specifically, eight paths were added to the model. Table 21 summarizes the paths added to the model.

Table 21

*Summary of Paths Added to the Causal Model Based on Qualitative Analysis*

| Path Added | Variable |
| --- | --- |
| Development Processes → | Referent Power |
| Development Processes → | Expert Power |
| Development Processes → | Ambiguity |
| Development Processes → | Coupling |
| Implementation Processes → | Ambiguity |
| Implementation Processes → | Expert Power |
| President Influence → | Development Process |
| Reward Power → | Legitimacy |

In summary, the qualitative analyses of Phase II yielded a model that supported the use of ambiguity, coupling, referent power, coercive power, reward power, and expert power to predict perceived legitimacy of a management innovation, became

significant predictors of innovation adoption. Figure 22 highlights the model that

integrates findings from Phase I quantitative analysis and Phase II qualitative analysis.

*Figure 22.* Final model integrating quantitative and qualitative analysis

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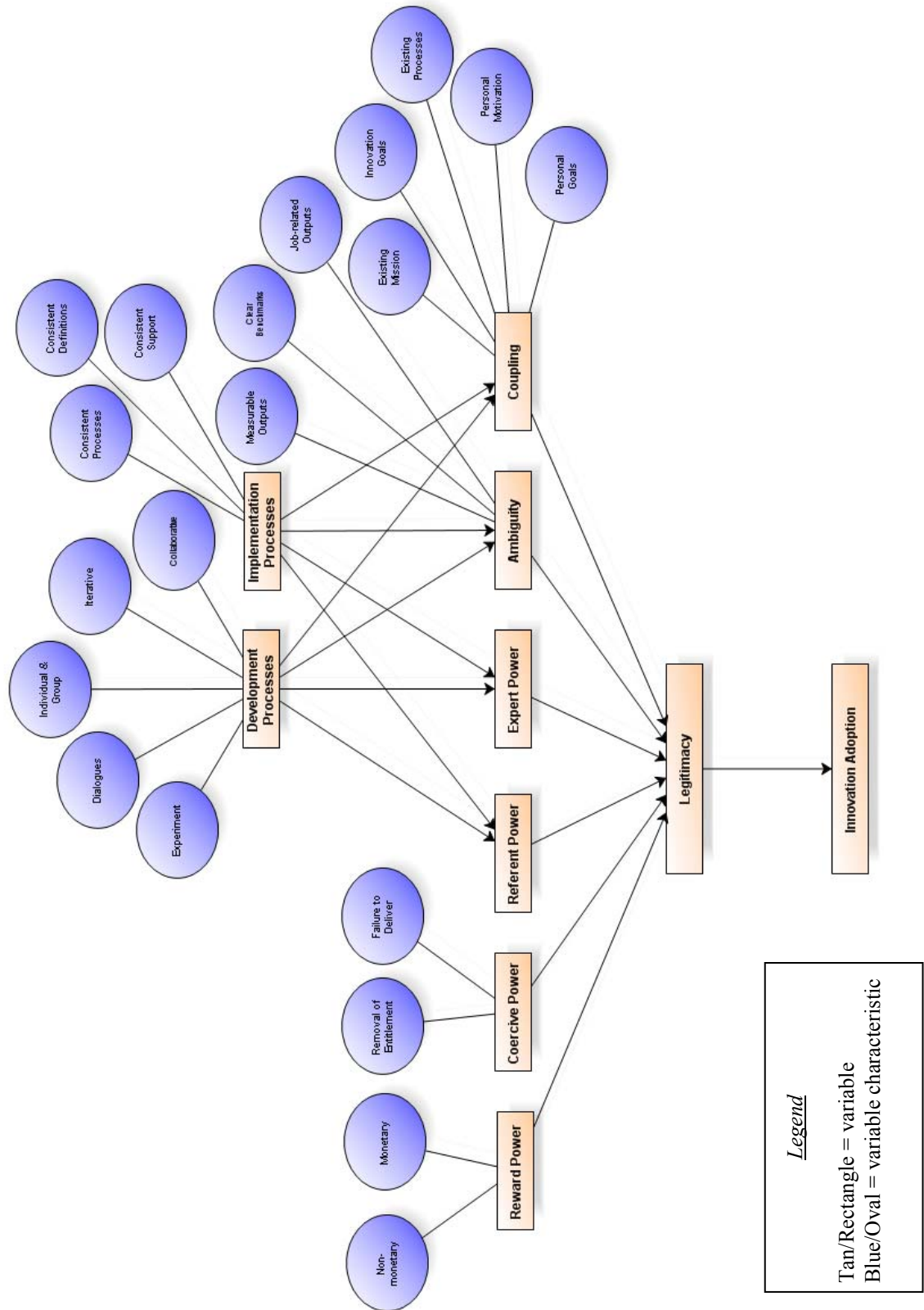
CHAPTER V

*Introduction and Organization*

The purpose of this study was to broaden our understanding of how power, coupling, ambiguity, and subsystems influenced the perceived legitimacy and subsequent adoption or rejection of a management innovation within the context of a higher education organization. To accomplish this purpose and to answer the project's six research questions, a two-phase, mixed method, sequential explanatory research design was used. In Phase I, a researcher-designed survey was used to collect quantitative data from 191 faculty, administrators, and staff at a university implementing a management innovation. Correlation, partial correlation, multiple regression, and path analyses provided answers to the study's research questions and yielded a causal model reflecting the interaction of the hypothesized variables. In Phase II, data from 15 face-to-face interviews confirmed, further explained, and expanded quantitative findings resulting in a causal model that integrated quantitative and qualitative results.

Accordingly, Chapter V highlights results, conclusions, and suggestions related to the study. More specifically, the chapter will provide a discussion of (1) results linked to each research question; (2) conclusions linked to the study's variables, relationships, and relevant literature; (3) recommendations for practice; and (4) recommendations for future research.

*Results*

The results section summarizes findings related to the study's six research questions.

*Research Question 1. Did perceived legitimacy of a management innovation influence individuals (administrators, faculty, and staff) to adopt or reject a management innovation within higher education?*

Quantitative and qualitative data supported the role of legitimacy as a predictor of innovation adoption. Regression analysis revealed legitimacy was a significant predictor of knowledge formation, opinion formation, planned change, and actual change related to the management innovation with *p* values ranging between <.0005 and .021. Also, decomposition of effects within the path analysis confirmed legitimacy had significant effects on knowledge formation, opinion formation, and planned change with *p* values ranging from <.001 and .035. Qualitatively, six of the fifteen interviewees indicated they had changed behaviors to align with merit pay system, and the remaining nine interviewees indicated they had made no changes in behaviors. Interestingly, of the six interviewees who said they had changed behaviors, four described the management innovation as "legitimate," "very legitimate," "fair," or a "good fit." Of the nine who indicated they had not changed behaviors to align with the merit pay system, six specifically indicated the management innovation was not legitimate. In essence, the quantitative and qualitative data indicated perceived legitimacy was a significant predictor of knowledge, option formation, planned behavior change, and actual behavior change related to the management innovation.

In association with Research Question 1, the study examined the innovation-decision process path proposed by Rogers (1995). Correlation, partial correlation, and multiple regression analyses indicated that (1) formation of knowledge was a significant predictor of opinion formation ($R^2$=.106; *p*<.0005; $F_{1,186}$=22.082); (2) opinion formation

was a significant predictor of planned change in behavior or activities ($R^2$=.034; $p$=.012; $F_{1,182}$=6.494); and (3) planned change was a significant predictor of actual change ($R^2$=.149; $p$<.0005; $F_{1,182}$=31.905). While $R^2$ statistics indicated the independent variables had a small to medium effect on the dependent variables, the effects were significant with $p$ values ranging between <.0005 and .012. Additionally, the path analysis generally supported the innovation-decision process. Decomposition of effects supported causal paths between (1) knowledge and understanding of the merit pay system and opinion formation; and (2) planned change and actual change; however, the decomposition of effects did not confirm the path between opinion formation and planned change. Overall, and with some caution, the quantitative data appeared to confirm the innovation-decision process.

*Research Question 2. Did perceived legitimacy of a management innovation vary based on the organizational subsystem (technical and administrative) in which individuals worked?*

Quantitative data yielded mixed results with regard to variance of perceived legitimacy based on organizational subsystem. Data from the regression analyses indicated an individual's position within the organization accounted for a small, but significant ($R^2$=.036; $F_{1,187}$=*6.969, p*=.009, β=.423) amount of variation within one of the legitimacy variables (L2); however, position accounted for no significant amount of variation within the second legitimacy variable (L4). Additional regression analyses associated with Research Questions 3-6 yielded no significant results when position was included as an independent variable within step-wise models. Finally, partial correlations conducted as part of the path analysis indicated that position did not

maintain a significant relationship with legitimacy (L2) when controlling for coupling

(C1) and ambiguity (A4, A5). In the end, an individual's position within an organization

only appeared to have significant covariate relationships (p<.05) with coupling

(*r*=.*182)*, ambiguity (*r*=.187), and expert power (*r*=.185) indicating that perhaps staff

and administrators within the technical subsystem had a stronger relationship with

coupling, ambiguity, and the use of expert power than faculty within the technical

subsystem. Overall, the quantitative data indicated position within the organizational

subsystem had no, or at least very limited, influence on perceived legitimacy, and

therefore, was not included as a predictive variable in the final causal model.

*Research Question 3: Did perceived use of power by administrators to facilitate*

*the adoption of a management innovation influence how individuals perceived*

*legitimacy of a management innovation?*

In general, quantitative and qualitative data analysis of the study indicated the

perceived use of expert, referent, coercive, and reward power by administrators

influenced perceived legitimacy of the management innovation.

Regression analysis indicated perceived use of *referent power* had a significant

effect (p<.0005) on perceived legitimacy. Decomposition of effects within the path

analysis further confirmed perceived use of referent power by administrators had a

significant direct effect ($\beta$=.246, p<.001) on legitimacy. With regard to qualitative data,

nine of fifteen interviewees confirmed administrators used referent power to influence

the legitimacy of the management innovation. The interview data indicated that,

through conversations with individuals and groups, administrators developed mutual

understandings of the management innovation, which increased the perceived

legitimacy of the merit pay system. In summary, data analysis indicated that perceived use of referent power by administrators increased perceived legitimacy of the management innovation.

Quantitative analyses yielded mixed results related to the influence of expert power on perceived legitimacy. Regression analysis indicated perceived use of *expert power* had a significant effect (p<.05) on perceived legitimacy. On the other hand, decomposition of effects within the path analysis revealed perceived use of expert power by administrators did not have a significant direct effect (p=.269) on legitimacy. In part this inconsistency, may be explained by interaction between legitimacy and the other variables of interest that were included initially in the causal model. While the quantitative data appeared inconsistent, results from the qualitative analysis were clear. The qualitative data substantiated that the use of expert power positively influenced perceived legitimacy. Seven interviewees confirmed administrators used expert power to influence the perceived legitimacy of the management innovation.  The data highlighted how administrators used personal knowledge to provide detailed information about the merit pay system. The data also indicated that administrators shared personal knowledge gained from research to increase legitimacy of the merit pay system. Failure of administrators to use expert power appeared to adversely influence perceived legitimacy of the merit pay system. On the whole, the integrated analysis supported perceived use of referent power by administrators as a predictor of perceived legitimacy.

On the other hand, quantitative and qualitative appeared to indicate that the perceived use of *coercive power* adversely influenced the perceived legitimacy of the

management innovation. Regression analysis indicated perceived use of coercive power was a significant predictor (p<.01) of perceived legitimacy. Decomposition of effects within the path analysis revealed perceived use of coercive power by administrators had a significant direct effect with (p<.01) on legitimacy. While significant beta statistics ($\beta$=-.364, .395, -.287, -.214, .153, -.211) generated by regression and path analyses provided mixed results with regard to positive or negative influence, the qualitative data clearly indicated the negative influence of coercive power on perceived legitimacy. More specifically, thirteen of the fifteen interviewees noted the negative impact of perceived use coercive power by administrators on the perceived legitimacy of the management innovation. These individuals associated the removal of cost-of-living raises and the failure to provide meaningful and promised pay raises with the use of coercive power by administrators. Overall, data analysis associated with this study indicated perceived use of coercive power by administrators adversely influenced the legitimacy of the merit pay system.

Finally, qualitative data suggested that the perceived failure of administrators to use *reward power* adversely influenced perceived legitimacy. This adverse effect, at least to some degree, appeared linked to the two prong purpose of the management innovation as identified by all fifteen interviewees: (1) to reward individuals who performed their jobs well; and (2) not to reward, or punish, those who were underperforming. Thirteen of the fifteen interviews shared that the use of monetary and nonmonetary rewards associated with the management innovation was minimal, nonexistent, or never a reality. In essence, the data analysis appeared to indicate that the absence of rewards and the subsequent absence of the perceived use of reward power by

administrators was perceived as a failure of the management innovation to fulfill one of

its purposes, which ultimately led to decreased legitimacy of the merit pay system and

subsequent decisions by individuals to not change behaviors or activities to align with

the management innovation.

Overall, data analysis from the study substantiated that perceived use of referent

and expert power increased perceived legitimacy of the management innovation while

the perceived use of coercive power decreased perceived legitimacy. The absence of

reward power within the context of the stated purpose of the management innovation

also contributed to decreased legitimacy. Most notably, the quantitative data and

qualitative data revealed that the negative effect of reward and coercive power on

perceived legitimacy had greater influence than any positive influence linked to referent

and expert power.

*Research Question 4. Did the perceived degree of coupling of a subsystem to a*

*proposed management innovation influence how individuals perceived the*

*legitimacy of a management innovation?*

On the whole, data analysis confirmed coupling of a subsystem to the proposed

management innovation influenced perceived legitimacy.

Regression analyses indicated coupling was found to account for a large amount

of variation in perceived legitimacy with $R^2$ statistics equaling .313 and .445, and

correspondingly, was identified as a significant predictor of legitimacy ($p < .0005$).

Decomposition of effects within the path analysis further confirmed coupling had a

significant direct effect on legitimacy ($\beta = .296, .351, .271; p < .001$). The qualitative data

also indicated perceived coupling of a subsystem to the proposed management

innovation influenced perceived legitimacy. More specifically, legitimacy increased when individuals perceived the innovation was tightly coupled to the innovation's goal, the university's historic mission, the university's existing evaluation system, personal goals, and personal motivation. Further, qualitative data indicated legitimacy was influenced by processes used to develop or refine the management innovation. Development processes increased perceived coupling when those processes occurred among individuals and groups; incorporated collaborative strategies; encouraged dialogue among stakeholders; facilitated experimentation with the innovation; and allowed for the development of iterative versions of policies and procedures. In short, data analysis of the study verified that when individuals identified the management innovation as tightly coupled to the innovation's goal, the university's historic mission, the university's existing evaluation system, personal motivation or personal goals, perceived legitimacy of the management innovation increased.

*Research Question 5. Did the perceived ambiguity of inputs, processes, and outputs influence how individuals perceived the legitimacy of a management innovation?*

Generally, quantitative and qualitative analysis indicated ambiguity of outputs influenced perceived legitimacy of the management innovation. The data were inconclusive regarding the influence of ambiguity of inputs and processes on perceived legitimacy.

Regression analyses indicated ambiguity accounted for a large amount of variation in perceived legitimacy with $R^2$ statistics for the various models equaling .215 and .479, and correspondingly, was identified as a significant predictor of legitimacy

(p<.0005). Decomposition of effects within the path analysis further confirmed

ambiguity had a significant direct effect (β=.436; p<.001) on legitimacy. The qualitative

data further substantiated that legitimacy increased when outputs were clearly defined;

included measurable bench marks; were linked to job-specific functions; and were

implemented consistently. Essentially, data analysis associated with the study

substantiated that increased clarity with which outputs were defined and measured as

well as linked to job specific functions and consistently measured, increased perceived

legitimacy of the management innovation.

> *Research Question 6. Did the factors of power, coupling and ambiguity interact*
>
> *to influence how individuals perceived the legitimacy of a management*
>
> *innovation?*

Generally, the study indicated power, coupling, and ambiguity influenced how

individuals perceived legitimacy of the management innovation. More specifically,

decomposition of effects within the path analysis confirmed coupling (β=.296, .351,

.271; p<.001), ambiguity (β=.436; p<.001), referent power (β=.246; p<.001), and

coercive power (β=-.214, -.211, .153; p<.001, <.001, .005) had the greatest total effect

on perceived legitimacy when accounting for interactions among all variables. As

previously noted in the conclusions for Research Questions 1-5, qualitative data

consistently confirmed the quantitative findings. In addition, the qualitative data further

explained these interactions by identifying ten specific characteristics associated with

these variables (see Table 20, Chapter IV). The qualitative data also warranted the

addition of three new variables (reward power, development processes, and

implementation processes), ten characteristics associated with these variables, and eight

new paths (see Tables 20 and 21, Chapter IV).  In summary, the data analysis associated

with this study confirmed that ambiguity, coupling, referent power, coercive power,

reward power, and expert power influenced perceived legitimacy of the management

innovation, which in turn influenced innovation adoption. Ultimately, this study yielded

a causal model that integrated these findings (see Figure 23).

*Figure 23.* Final causal model without variable characteristics
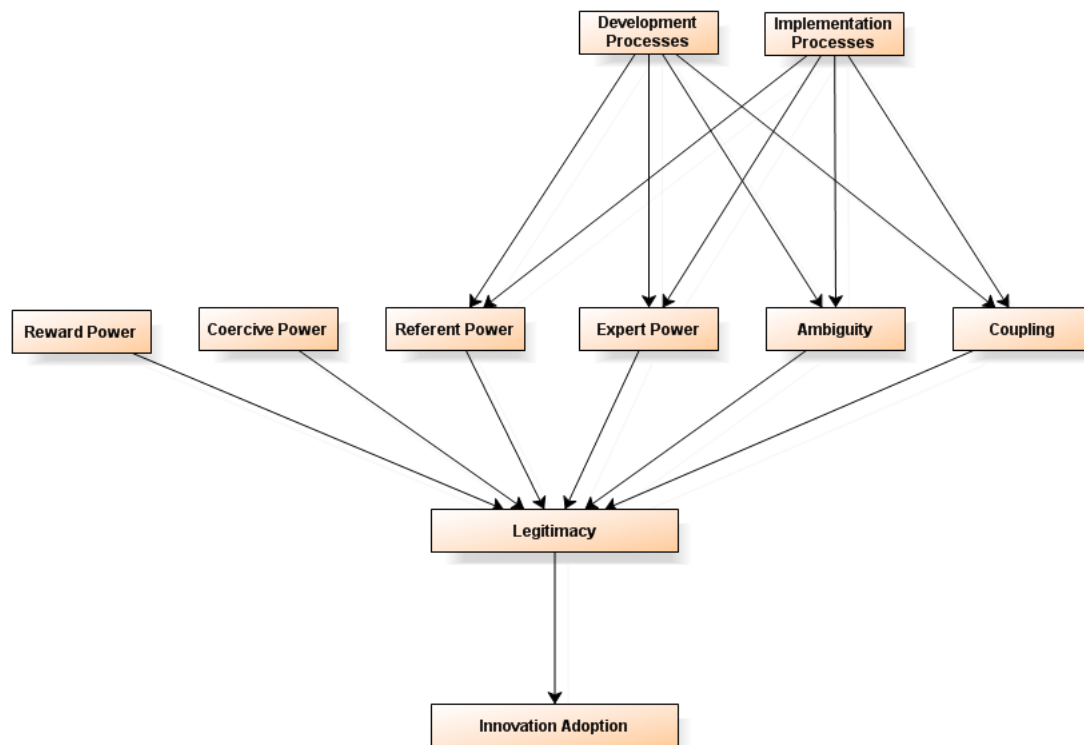


*Conclusions*

The purpose of this study was to broaden our understanding of how power,

coupling, ambiguity, and subsystems influenced the perceived legitimacy and

subsequent adoption or rejection of a management innovation within the context of a

higher education organization. In light of this purpose, this section will provide a

discussion of conclusions linked to the study's variables, relationships, and relevant literature.

*Innovation Adoption*

Initially, the literature pointed to the work of Rogers (1995) as a possible framework to understand the cycle of rejection identified by Birnbaum (2001). The pattern of adoption found within this study appeared consistent with Rogers' (1995) innovation-decision process model. First, individuals developed knowledge and understanding related to the management innovation. Knowledge and understanding then became a significant predictor of opinion formation where individuals formed either positive or negative opinions about the management innovation. In turn, opinion formation was found to be a significant predictor of planned change in behaviors or activities, which ultimately predicted whether individuals adopted the management innovation as demonstrated through changed behaviors or activities to align with the management innovation. In short, the study yielded findings consistent with the innovation-decision process model developed by Rogers.

*Legitimacy and the Relationship with Innovation Adoption*

Next, the study sought to understand how legitimacy influenced the adoption of the management innovation. Birnbaum (2001) hinted that management innovations were introduced into higher education organizations as a means to increase perceived legitimacy of the organization and its leaders with external constituents. Indeed, the introduction of the management innovation in this study appeared to be introduced by the president as a potential means to increase legitimacy among individuals within and external to the organization.

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Further, Birnbaum (2001) suggested that perceived legitimacy of a management innovation by individuals and subsystems within the organization played a role in the eventual adoption or rejection of the management innovation. Legitimacy was defined using three characteristics. First, legitimacy was defined as a label assigned by individuals to identify the validity of the management innovation. The study appeared to support this characteristic of the definition. Within the interview data, individuals consistently described the management innovation as "legitimate," "very legitimate," "fair," and "a good fit."

Second, based on the work of French and Raven (1959), legitimacy was defined as a positive-neutral-negative perception of the management innovation. However, individuals participating in the interviews mostly discussed legitimacy using dichotomous terms with the use of more neutral terms noticeably absent. Hence, the study did not yield results consistent with the anticipated positive-neutral-negative response and might be an area for future exploration.

Third, legitimacy was defined as a label that emerged as the result of an evaluative process used by individuals to determine the alignment of the innovation with internalized norms and values. The study appeared to support that individuals used an evaluative process to determine the legitimacy of the merit pay system. The basis of this evaluative process appeared to be internalized norms manifested as beliefs and values associated with power, coupling, and ambiguity related to the specific management innovation. Consistent with the literature, these internalized norms appeared to be constructed individually and socially within the context of the development and implementation processes associated with the adoption of the merit

pay system (French & Raven, 1959; Linton, 1945; Pfeffer, 1982; Yukl, 2001). The role of development and implementation processes will be discussed later in this chapter.

With regard to the influence of legitimacy on innovation adoption, the results of the study indicated perceived legitimacy of a management innovation influenced individuals to adopt or reject the management innovation. Individuals who perceived the innovation as legitimate were more likely to change behaviors and activities to align with the management innovation. Conversely, those who did not perceive the innovation as legitimate were less inclined to change behaviors and activities to align with the management innovation.

In summary, findings partially supported the study's definition of legitimacy in that it was a label assigned by individuals to identify the validity of the management innovation, and it resulted from evaluation processes linked to internalized norms and values. The findings did not support legitimacy being defined as a positive-neutral-negative perception of the management innovation. Finally, the study's findings appeared consistent with assertions made by Birnbaum (2001) who suggested that legitimacy of a management innovation played a role in the adoption of management innovations given that individuals who perceived the management innovation as more legitimate were more likely to change behaviors than those who perceived the innovation as less legitimate. The study clearly supported the use of legitimacy as a predictor of innovation adoption.

Rogers (1995) also established that innovations, when introduced to organizations, followed paths toward diffusion. Diffusion is the process through which innovations spread through an organization and is the process used by members of the

organization to develop mutual understandings of the innovation. Hence, acceptance or rejection of a management innovation was examined as a social process. If social processes linked to organizational context influence innovation adoption, it seemed logical that those characteristics that distinguish higher education from business organizations may influence the eventual adoption or rejection of a management innovation.  Accordingly, this study examined literature and identified three characteristics that distinguished higher education organizations from business organizations: (1) plurality of power (Baldridge et al., 1977; Birnbaum, 1988; Cohen & March, 1986); (2) ambiguity tied to the production function (Birnbaum, 1988, 2001; Brock & Harvey, 1993; Cohen & March 1986); and (3) coupling of subsystems (Birnbaum, 1988; Besse, 1973; Corson, 1960; Etzioni, 1964; Mintzberg, 1979). Conclusions related to these characteristics are highlighted in the next three sections of this chapter.

*Power and the Relationship with Legitimacy*

The study indicated perceived use of power by administrators influenced perceived legitimacy of the management innovation. The study revealed four types of power that influenced perceived legitimacy of the merit pay system: referent, expert, coercive, and reward. The perceived use of referent and expert power increased perceived legitimacy of the merit pay system, while the perceived use of coercive power and the failure of administrators to use reward power decreased legitimacy.

The positive influence of referent and expert power is consistent with the literature. Consistent with the suggestions of French and Raven (1959) and Yukl (2002), interviewees noted administrators were engaged in dialogues and were accessible

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during the development and implementation of the management innovation. These activities (i.e., the use of referent power) increased desire of individuals to identify with leaders' opinions and insights related to the management innovation. Interviewees also noted administrators used expert power to influence perceived legitimacy of the management innovation by sharing detailed knowledge, information, experiences, and literature about the management innovation (French & Raven, 1959; Hickson et al., 1971; Patchen, 1974).

Higher education organizations are often characterized as normative organizations. The works of Etzioni (1961), Mintzberg (1983), Patchen (1974), and Pfeffer (1981) underscore the positive impacts linked to the use of referent and expert power in normative organizations, where social relationships, individual choice, and a desire for autonomy govern the context in which individuals make decisions related to management innovations. Therefore, it was not surprising to find the negative effects of coercive and reward power, which are often more associated with utilitarian or coercive organizations such as businesses or prisons.

Increased diffusion and sustainability of the management innovation is another aspect highlighted in the literature. French and Raven (1974), Thambian and Gemmill (1974), Yukl and Falbe (1991), and Warren (1968) noted that change in behavior linked to the use of reward and coercive power may be short lived. Conversely, change in behavior linked to administrator use of referent and expert power may be sustainable and may increase diffusion of the innovation within the organization. The study examined this phenomenon as a single snapshot in time only two years after the adoption of a management innovation. Given the short time period from the

introduction of the innovation until when the study was conducted, findings do not reflect any long-term effects of power on changed behavior. Therefore, future research in this area may want to seek increased understanding related to the longitudinal effect on perceived legitimacy and behavior change of individuals, units, and subsystems where leaders primarily use referent and expert power to influence the adoption of management innovations.

Finally, the study suggested that the use of power may be consistent with two additional themes supported in the literature. First, the willingness of administrators to use power appeared linked to perceived benefits of the innovation for the administrators and their followers (Blau, 1974; Hollander, 1958; Jacobs, 1970; Kelman, 1958). Those administrators who saw mutual benefits appeared more willing to use power. Administrators discussed benefits in terms of alignment with personal goals, unit goals, and critical need.

Second, the study indicated that the willingness of administrators to use power was linked to organizational hierarchy. Higher level administrators were perhaps more willing to use power to influence the adoption of the management innovation than administrators at lower levels (Birnbaum, 2001; French & Raven, 1959; Mintzberg, 1979). The qualitative data suggested the president, vice presidents, and academic deans strategically used referent power to influence adoption of the innovation with groups and individuals. The majority of these efforts focused on shaping policies and procedures related to development and implementation processes. Beyond this handful of senior administrators, interviewees indicated that the use of power by administrators was minimal. Within the faculty subsystem, interviewees had difficulty describing the

influence of administrators beyond the president, vice president, and deans. (However, it is important to note that interview data were not specifically collected from any midlevel administrators.) Potentially, some administrators at lower levels were not willing to use power to influence the adoption of the management innovation because of tensions between the needs, beliefs, and values of followers and the demands of the organization (Mintzberg, 1979). This conflict may be particularly true within the faculty subsystem where department chairs may view their faculty role as more important than their administrator role, especially on issues where the conflict is more pronounced.

Finally, willingness of administrators to use power to influence the adoption of management innovations may possibly be linked to how administrators perceived coupling of the subsystem to the management innovation and the degree to which ambiguity of unit outputs could be minimized. Understanding the factors that influence the willingness of administrators to use power to influence the adoption of management innovations may be an important area for future research.

Overall, the study supported three findings related to power: (1) perceived use of referent and expert power by administrators increased perceived legitimacy of the merit pay system; (2) perceived use of coercive power decreased legitimacy; and (3) failure of administrators to use reward power decreased legitimacy. The study also suggested the willingness of administrators to use power might be linked to perceived benefit and organizational hierarchy.

*Ambiguity and the Relationship with Legitimacy*

Ambiguity is a second characteristic that distinguished higher education institutions from business organizations. More specifically, the relevant literature for this study suggested four ambiguities tied to the production function: goal ambiguity; ambiguity of inputs, outputs, and technical processes; ambiguity in measuring inputs and outputs; ambiguity tied to technical processes that convert inputs to outputs (Birnbaum, 1988, 2001; Boyer, 1990; Brock & Harvey, 1993; Cohen & March, 1986; Gross & Grambsch, 1974; Jones & Taylor, 1990; Kerr, 2001).

The results of the study appeared consistent with the literature with regard to ambiguity of goals, inputs, and processes. Interviewees consistently described goals within the ambiguous context of the university's historic mission of teaching, research, and service. Perhaps most notably, the study highlighted the difficulty individuals had identifying inputs and processes to the point that interview questions related to identifying inputs and processes were suspended after the third interview.

While the interview data indicated individuals had difficulty defining goals, inputs, and processes, individuals appeared to find it easier to define and measure outputs. As a result, the study confirmed that legitimacy of the management innovation increased when individuals perceived outputs that were more clearly defined. More specifically, the study substantiated that outputs that were clearly defined, consistently measured, and linked to job specific functions increased perceived legitimacy of the management innovation. Further, it appeared that development and implementation processes played an important role in identifying and measuring outputs and facilitating

linkages with job specific functions. Conclusions related to the influence of development and implementation processes will be discussed later in this chapter.

Within the context of defining, measuring, and linking outputs to job specific functions in the faculty subsystem, individuals often discussed specific difficulties related to the teaching, research, and service mission of the university. Individuals often contrasted degrees of ambiguity and clarity tied to the three-fold mission. Some interviewees discussed the difficulty of defining and measuring teaching while others discussed the same for research, which lead to several questions. If individuals perceived differing levels of ambiguity related to outputs, how was perceived legitimacy impacted? Did individuals deconstruct management innovations and perhaps view its parts with differing levels of legitimacy based on ambiguity of outputs that were linked, or coupled, to a specific component of the innovation and thereby influenced individuals to change behaviors or activities to align with that component? Indeed some of the qualitative data hinted at this possibility and may be an area worthy of future research.

Overall, the study yielded findings consistent with the literature with regards to goal, input, and process ambiguity. On the other hand, the study appeared to support that outputs could be defined and measured within a higher education organization, and that development and implantation processes potentially played an important role in defining and measuring outputs. Most notably, the results of the study indicated perceived legitimacy increased when outputs were defined, consistently measured, and linked to specific job functions.

*Coupling and the Relationship with Legitimacy*

Subsystems that tend to be more loosely coupled than tightly coupled were the third characteristic that distinguished higher education from business organizations. The study indicated perceived legitimacy of the merit pay system increased when individuals identified that the management innovation was tightly coupled to the subsystem, and more specifically, when the management innovation was tightly coupled to how individuals within the subsystem perceived the linkage to the innovation's goal, the university's historic mission, and the subsystem's existing evaluation system. If the management innovation was linked to these three areas, perceived legitimacy seemed to increase, and conversely, if the management innovation was perceived as not aligning with these three areas, legitimacy decreased. The innovation's goal, the university's historic mission, and the subsystem's existing evaluation system appeared to be the three critical elements common to the management innovation and the organization's administrative and faculty subsystems. This finding seemed to align with Birnbaum's (1988) thought that tight and loose coupling manifests based on the perceived linkages common to the innovation and the subsystem.

In addition, perceived legitimacy of the merit pay system appeared to increase when individuals identified that the management innovation was tightly coupled to an individual's personal motivation or personal goals. Personal motivation, at least for this study, was discussed in terms of extrinsic (i.e., nonmonetary recognition) and intrinsic motivation (i.e., worth ethic, self fulfillment, gratification in helping others be successful). Personal goals were most often discussed in terms of an individual's leadership goal (i.e., the management innovation helped achieve a personal leadership

goal). In essence, the linkage of legitimacy to both personal and organizational elements appeared supportive of Birnbaum's cybernetic assumption that coupling is influenced by contextual factors. Basically, the study confirmed that the beliefs and values of individuals influenced perceived coupling to the management innovation, which in turn influenced how they perceived legitimacy of the merit pays system. Birnbaum also noted that influence of contextual elements made it difficult to predict how an innovation would be received by individuals. Essentially, the study confirmed contextual elements influenced legitimacy and the subsequent adoption of the innovation. The study also confirmed the influence of developmental processes on coupling. Therefore, it would appear, at least from a practical perspective, that leaders could increase probability of innovation adoption when care is given to facilitate developmental processes that include characteristics highlighted in this study.

In summary, the research findings for this study indicated perceived legitimacy of the merit pay system increased when the management innovation was perceived as tightly coupled to the innovation's goal, the university's historic mission, the subsystem's existing evaluation system, personal motivation, and personal goals.

Basically, the study appeared to indicate that the three factors that distinguished business organizations from higher education influenced perceived legitimacy of the merit pay system. The perceived use of referent and expert power by administrators increased perceived legitimacy of the merit pay system. The use of coercive power and the failure to use reward power decreased perceived legitimacy. Perhaps most influential in predicting perceived legitimacy, was the degree to which outputs could be defined, measured consistently, and linked to specific job functions and the degree to

which individuals perceived the purpose of the management innovation was tightly

coupled to  the innovation's goal, the university's historic mission, the subsystem's

existing evaluation system, personal motivation, and personal goals.

*Organizational Subsystem and the Relationship with Legitimacy*

Also of interest in this study was to broaden our understanding of the degree to

which an individual's position within a given organizational subsystem influenced

perceived legitimacy of a management innovation.  The study indicated an individual's

position within the organizational subsystem had no, or at least very limited, influence

on perceived legitimacy. This finding was a bit surprising, at least initially, especially in

light of Birnbaum (1998, 2001) who suggested that adoption failed as the management

innovation moved from the administrative subsystem to the faculty subsystem. It was

anticipated that perceived legitimacy of the management innovation would have been

lower among the faculty subsystem. It was thought that the innovation's attempt to

impose centralized controls was incompatible with values, beliefs, decision making

processes, and power structures of the faculty subsystem, which are generally more

normative and support autonomy of faculty (Birnbaum, 1988, 2001; Besse, 1973;

Corson, 1960; Etzioni, 1964; French & Raven, 1959; Mintzberg, 1979). It was also

anticipated that perceived legitimacy of the management innovation might have

increased among the administrative subsystem due to the congruence with its values,

beliefs, decision making processes, and power structures that are more utilitarian than

the normative aspects of the faculty subsystem (Birnbaum, 1988, 2001; Besse, 1973;

Corson, 1960; Etzioni, 1964; French & Raven, 1959; Mintzberg, 1979). Given the

literature, why then did position within the organizational subsystem not influence

perceived legitimacy? Answers to three additional questions may assist in understanding this issue.

First, did the management innovation seek to create organizational controls that centralized and formalized organizational structures (Birnbaum, 2001; Mintzberg, 1979)? Indeed, the management innovation was an attempt by the organization to adopt a merit pay system that rewarded salary increases to individuals who performed at higher levels while not rewarding, or punishing, those that performed at lower levels. Inherent in this innovation was the need for the organization to centralize and formalize processes necessary to consistently determine level of job performance and to determine reward or punishment.

Second, did characteristics of subsystems at Compass Point University align with characteristics identified in the literature? It appeared that CPU was made up of two fairly distinct subsystems: a faculty subsystem and an administrative subsystem. From the interview data and participant observer knowledge, the faculty subsystem seemed to reflect values, beliefs, decision making processes, and power structures that were more normative than deterministic or utilitarian. However, the interview data did not reflect an administrative subsystem that aligned with characteristics identified in the literature in that interviewees consistently described the importance of normative decision making processes in the adoption of the management innovation. Although there was an expectation of shared governance within the administrative subsystems, a culture of shared governance with corresponding structures, processes, and procedures to facilitate shared governance did not exist. Given that the adoption of the management innovation within the administrative subsystem appeared to be more autocratic than

normative, there is a potential that actual development and implementation processes within the administrative subsystem contributed to administrator use of coercive power, increased ambiguity, and decreased coupling which in turn decreased legitimacy of the merit pay system. There is also a potential that the development and implementation processes were influenced by the absence of a shared governance culture within the administrative subsystem as well as the beliefs and values held by key administrators as related to the actual management innovation and shared governance.

Correspondingly, did development or implementation processes within the faculty subsystem increase perceived legitimacy of the merit pay system? While the management innovation was introduced to each subsystem by the president of the university, development processes were quite divergent. As reflected in the interview data and based on participant observer knowledge, the processes used to develop and implement the management innovation were unique to each subsystem. While the development and implementation processes within the administrative subsystem were more autocratic, the processes within the faculty subsystem were more normative. Within the faculty subsystem, the management innovation was developed and implemented using collaborative processes that involved faculty and academic administrators. It was implemented using iterative processes that provided opportunity for experimentation and refinement. It was clearly linked to the historic teaching, research, and service mission, and a great deal of time and energy focused on developing clear benchmarks linked to job specific functions: teaching, research, and service. Essentially, the development process within the faculty subsystem clearly aligned with the values and expectations associated with shared governance of the

faculty subsystem, all of which, as reflected in the quantitative and qualitative data, increased coupling and decreased ambiguity which in turn increased perceived legitimacy of the management innovation.

In summary, the study indicated an individual's position within the organizational subsystem had no, or very limited, influence on perceived legitimacy. Initially, this finding appeared inconsistent with the literature which suggested individuals within the administrative subsystem might perceive the legitimacy of the management innovation at higher levels than individuals within the faculty subsystem. In part, it appeared development and implementation process may have contributed to this inconsistency and underscored the importance related to the congruence of the innovation's purpose as well as the congruence of the innovation's development and innovation processes with the values, beliefs, decision making processes, and power structures of the organizational subsystem. In other words, the organizational subsystem within which an individual is employed, whether the administrative subsystem or the faculty subsystem, may not be of importance in predicting perceived legitimacy and subsequent adoption of the management innovation. Instead, it appeared that alignment of the innovation's purpose and adoption processes with the subsystem's values and beliefs may be more predictive of perceived legitimacy.

Given this finding and in light of the literature, it may be important for future research to further explore the degree to which an individual's position within the technical and administrative subsystems and the values of those subsystems interact to influence perceived legitimacy and adoption of a management innovation. Additional

understanding may also be gleaned by breaking down the unit of analysis into smaller subsystems within the administrative and technical subsystems.

*Development and Implementation Processes*

Up to this point, this section has highlighted conclusions within the study that support (1) the use of referent power, expert power, coercive power, reward power, ambiguity, and coupling to predict the degree to which individuals perceive legitimacy of a management innovation; and (2) the use of perceived legitimacy of a management innovation to predict subsequent adoption or rejection of the innovation. The discussion section has also highlighted how an individual's position in a given subsystem within an organization did not necessarily influence how that individual perceived the legitimacy of a merit pay system. Next, the discussion of conclusions will focus on two findings that emerged from the qualitative data that were not tied directly to the literature reviewed in preparation for this study or to the study's research questions, but none the less, were equally important in understanding those factors that influenced the adoption of the management innovation.

First, the study appeared to highlight the importance of processes used to develop the management innovation. Development processes, as supported by the qualitative data, are those activities facilitated by administrators to contextualize the management innovation to a higher education setting from the point of introduction of the innovation to the organization through the first implementation and subsequent reimplementation of the management innovation. Contextualizing the management innovation appeared to involve refinement of the innovation to align with the existing beliefs, values, processes, and resources of the organization. These development

processes increased perceived coupling, decreased ambiguity, and facilitated the use of referent and expert power when those processes occurred at individual and group levels; incorporated collaborative strategies; encouraged dialogue among stakeholders; facilitated experimentation with the innovation; and allowed for the development of iterative versions of policies and procedures related to the management innovation.

Second, the study underscored the importance of implementation processes. Implementation processes were those activities used by administrators to facilitate implementation of the management innovation, and more specifically, those activities that encouraged individuals to change behaviors or activities to align with the management innovation. While these processes contained many of the same characteristics as the normative processes associated with development phase, the innovation processes also focused on consistency of implementation as related to macro processes. In effect, the study highlighted importance of (1) consistently defining benchmarks across the organization; (2) using consistent processes to determine successes related to the innovation; and (3) consistently providing opportunities and support for individuals to experience success related to the innovation.

While the importance of development and implementation processes were not anticipated findings of the study, the importance is consistent with the literature. First, it appeared that such processes provided opportunities for individuals, among other things, to examine compatibility of the innovation with current values and experiences, to experiment with the innovation, and to observe results, all of which were processes necessary for diffusion as advocated by Rogers (1995). Second, such processes provided opportunities for leaders to encourage individuals and the organization to

evolve, solve problems, develop a shared vision related to the innovation, and learn about the management innovation (Birnbaum, 1998; Johnson, 1998; Senge, 2000). These types of interactions also provided a means to increase richness of observations, perspectives, and solutions related to the management innovation and ultimately supported greater access to the organization's potential, increased organizational intelligence and wisdom, and a provided a wider understanding of the organization's environment (Senge, 2000; Wheatly, 1999), or as noted by Senge, such interactions achieved "more accurate, more insightful, and more empowering views of reality." (p. 292). Finally, development and implementation processes allowed administrators to become transformational leaders in that these processes provided opportunities for leaders to influence followers' emotions and values in a variety of individual and group settings (Bass, 1985, 1996; Burns, 1978).

While the literature appeared supportive of the development and implementation processes that emerged from the study, there is additional significance related to these processes. Prior to this study, the literature certainly substantiated that such processes helped organizations to learn, make meaning of problems, and develop dynamic solutions to these problems. However, the literature seemed unclear as to why organizational learning and meaning making facilitated changed behavior. This study potentially provided a clearer understanding of intermediate variables connecting learning and meaning making processes to adoption. In essence, the study indicated development and implementation processes influenced coupling and ambiguity, which influenced perceived legitimacy and ultimately changed behavior. Hence, as an extension of this study, future research may want to focus on exploring if these

processes have the same effect on other innovations, solutions to problems or threats, or strategic planning effort faced by business, higher education and governmental organizations. In other words, do processes described in this study increase coupling and decrease ambiguity related to other innovations, solutions, or strategic plans across organizational sectors? Subsequently, does legitimacy of the innovation, solution, or plan increase? And then as a result, do behaviors and activities change to align with the innovation, solution, or plan?

The potential linkage of the study's findings to the business sector is significant. This linkage may broaden our understanding of the adoption of management innovations within complex business organizations. These complex organizations have emerged over the past two decades due to acquisitions, mergers, and other strategies that have led to even larger conglomerates and multi-national corporations. Indeed, a modern corporation may reflect a montage of histories, cultures, goals, purposes, values, beliefs, and understandings (Lipman-Blumen, 1998). In many cases, these diversities may lead to organizational characteristics that are more representative of higher education organizations (dispersion of power, loosely coupled subsystems, and ambiguity tied to the production function, specifically ambiguity of process) than characteristics associated with the historic business organization. Indeed, the use of traditional business and leadership strategies, like vertical integration, within these complex business organizations have been found to be detrimental to organizational learning (Sorenson, 2003). Therefore, the findings of this study may be useful in understanding the adoption of management innovations within complex business organizations, and is certainly an area that warrants future research.

*Leadership within the Cybernetic Model*

Generally, the study appeared consistent with many of Birnbaum's (1988) suggestions for effective cybernetic leaders.

First, the study confirmed the role of transactional and transformational leadership in the adoption of management innovations. The role of transaction leadership was diminished considerably in that administrators were unable to effectively use reward power due to limited resources. It also appeared that the monetary rewards associated with the management innovation either diminished or obscured the potential influence of nonmonetary rewards, and as a result, use of nonmonetary reward power was used minimally, if at all, by administrators even though several interviewees underscored the importance of nonmonetary rewards. As discussed previously, the study also confirmed the role of transformational leadership in the adoption of management innovations. Leaders appeared to influence individuals to change behaviors and activities to align with the management innovation primarily through the use of expert and referent power, which focused on working with followers to identify linkages of the management innovation with beliefs and values held by individuals within a given subsystem. However, one area seemingly overlooked by many administrators was the linkage of the management innovation to personal goals or personal motivation. It appeared that additional linkages with these areas would have increased adoption of the management innovation. In short, the study supported a balanced role of transactional and transformational leadership in the adoption of a management innovation.

Second, Birnbaum (1988) indicated that the successful adoption of a management innovation was linked to the capacity of leadership within the various subsystems of an organization. Such an approach would disperse power and increase capacity of administrators within subsystems to influence adoption of the innovation. In this study, administrator involvement within subsystems, beyond the president, vice presidents, and deans, was limited. The study was inconclusive as to exactly why this occurred, but three possibilities exist. First and as discussed earlier, there was an unwillingness of lower level administrators to use power to influence the adoption due to loose coupling of the innovation to the administrator's subsystem and lack of perceived benefits. A second possibility may be timing related to the adoption of the innovation. The mandate to implement perhaps did not provide an adequate amount of time to involve administrators at lower levels. Finally, these administrators may not have had time to cultivate knowledge and understanding related to the adoption of the innovation. Several interviewees noted that formal training opportunities for administrators to develop skills and knowledge related to the management innovation were limited or nonexistent. In summary, evidence within the study suggested that administrator influence at lower levels within the organization was absent, and appeared at some level, to adversely impact the adoption of the management innovation.

Next, Birnbaum (1988) suggested that the role of administrators and subsystems was to monitor and respond to inputs as a means to maintain equilibrium within the subsystem. As noted previously, individuals within the study were unable to identify inputs of the organization. Absent of ability to identify inputs, monitoring of inputs appeared impossible. Hence, the results of the study, at least initially, appeared

inconsistent with Birnbaum's cybernetic model and one of his proposed roles for leaders. But, what if the adoption of the management innovation actually was an input? Looking closer at the cybernetic model, Birnbaum noted that when new inputs, perhaps innovations in this case, move outside acceptable system limits, leaders look to historical processes that have been successful, such as an ad hoc committee or blue ribbon task force, to return stability to the system. The focus is on stabilizing the input not the output or the technical process. What often emerges from the ad hoc committee is a new subsystem in response to the new input.

Given Birnbaum's description, the study seemed to suggest that the management innovation introduced to the system was responded to as a new input, and the new input was outside of acceptable limits. As a result, several ad hoc committees and task forces were formed. Since the innovation was in the early stage of adoption, no new subsystems had emerged at the time of the study, but certainly, this idea of innovation as input may be an area of interest worthy of future exploration.

Consistent with Birnbaum's (1988) suggestion, the study underscored the importance of interpreting a management innovation within the contextual beliefs and values of subsystems. As previously noted, the adoption took two divergent paths linked to the two subsystems. Within the faculty subsystem, the process was decentralized and stakeholders, absent administrators from lower levels, were allowed to develop linkages with the subsystems beliefs, values, historic mission, and existing processes. Within the administrative subsystem, the process was centralized and more autocratic than normative. In fact, the development process hardly reached beyond core involvement of the senior administrators, and as a result, the management innovation did not

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incorporate values and beliefs consistent with the administrative subsystem, which somewhat inconsistent with the literature, valued normative decision making processes. In essence, the study underscored the importance of decentralized processes that allowed administrators to use referent and expert power to develop and implement a management innovation that was consistent with the values and beliefs of the subsystem thereby increasing perceived coupling and decreasing ambiguity.

Finally, the literature suggested that adoption of a management innovation was contingent upon the capacity of leadership to introduce the innovation as a response: a response to a crisis; a response to a problem that had been identified through data collection procedures; a response to a successfully adopted innovation in another subsystem; a response to improve selected activities within a specific subsystem. Based on interview data and knowledge of the participant observer, the management innovation was introduced as a response to a perceived problem that had been identified by the chief executive officer of the organization. The problem was identified as the lack of a merit pay system. Inconsistent with Birnbaum, the problem was identified as a lack of system and was not supported by data. Subsequently, qualifiers were added to the problem: across-the-board, cost-of-living raises are not fair in that they provide no means to reward performance and no means to financially punish those who do not perform. Still later, the lack of a merit pay system was qualified through linkages with salary inequities across campus. (It is important to note that in response to this qualifier a consultant was hired to perform a salary study. The consultant found less than ten individuals across campus who were paid above or below anticipated salary ranges based on internal and external comparisons.) Finally, the lack of a merit pay system was

qualified by noting that the system would put in place consistent job descriptions and an evaluation system for nonfaculty. In essence, it appeared that although the innovation was introduced as a problem, it was not introduced as a problem resulting from the institution's data collection procedures and that qualifiers were added to substantiate the problem. It is possible that legitimacy of the management innovation was adversely impacted by the failure to introduce the innovation in response to a problem that was linked to data generated within one of the organizational subsystems. On the other hand, the innovation adoption within the faculty subsystem was introduced as a response to improve evaluation activities within the subsystem. The study indicated that this linkage contributed, at some level, to increased coupling. Hence, it appeared that the importance of introducing the merit pay system extended beyond the organizational level and into subsystems further supporting one of Birnbaum's primary assumptions of cybernetic organizations: balance between centralized and decentralized elements. Given the consistency of these two tangential findings with Birnbaum's cybernetic model, future research related to the specifics of how innovations are introduced to organizations as well as to subsystems may provide increased understanding related to the adoption of management innovations.

*Summary of Conclusions*

In summary, this study yielded findings in five areas. First, the study further substantiated Rogers' (1995) innovation adoption process. Second, the study substantiated that as perceived legitimacy of a management increased changed behaviors or activities to align with that management innovation increased. Third, this study confirmed that those characteristics that distinguish higher education institutions

from business organizations (plurality of power; ill-defined goals, input, outputs and technical processes; and subsystems that are loosely coupled) influenced how individuals perceived legitimacy of the management innovation. More specifically, legitimacy increased when (1) outputs were defined, measurable, and linked to specific job descriptions; (2) the purpose of the management innovation was tightly coupled to the innovation's goal, the university's mission, the university's existing processes, individual goals, and individual motivation; and (3) administrators used referent or expert power. Fourth, this study indicated that the use of normative processes in developing and implementing innovations increased perceived coupling and decreased perceived ambiguity related to the management innovation while encouraging administrator use of referent and expert power. Finally, the study yielded results that were consistent with Birnbaum's (1998) suggestions for effective leadership within a cybernetic organization.

*Recommendations for Practice*

In light of the results and conclusions, the study supported several recommendations for higher education policy makers and administrators. With regard to policy makers, the study suggested:

- Policy makers exercise diligent thought and restraint before establishing policies or positions that encourage chief executive officers to adopt management innovations or before affirming recommendations from chief executive officers that their institutions adopt a management innovation – ideally, policy makers should hold to the understanding that the success of a management innovation increases when the innovation bubbles up from a subsystem within an

organization rather than being imposed on the organization by an administrator or a policy maker;

- Policy makers understand the time and resources required to develop and implement management innovations and to establish policies and procedures that require chief executive officers to allocate required time and resources necessary to ensure successful adoption of the management innovation; and

- Policy makers develop policies and procedures and allocate resources to increase the leadership capacity of administrators throughout the hierarchy of an organization, especially those in lower levels of the hierarchy.

With regard to administrators, the study suggested:

- Administrators exercise diligent thought and restraint before implementing a management innovation;

- Administrators allocate time and resources required to introduce, develop, and implement the management innovation;

- Administrators introduce the management innovation as a response based on Birnbaum's guidelines and that careful consideration go into creating language and processes that introduce the management innovation;

- Administrators develop professional development programs to increase leadership capacity within all subsystems and subunits of the organization;

- Administrators use development processes at the organization and subsystem levels that:

  o Incorporate collaborative strategies,

- o Encourage dialogue among stakeholders (faculty, staff, and administrators),

- o Facilitate experimentation with the innovation,

- o Accommodate development of iterative versions of policies and procedures related to the innovation, and

- o Primarily rely on administrators using referent and expert power; and

- Administrators use implementation processes at the organization and subsystem levels that:

  - o Incorporate collaborative strategies,

  - o Encourage dialogue among stakeholders (faculty, staff and administrators),

  - o Facilitate experimentation,

  - o Accommodate development of iterative versions of policies and procedures related to the innovation,

  - o Primarily rely on administrators using referent and expert power, and

  - o Ensure consistency of processes, definitions, and support and access to resources to support implementation of the innovation.

Figure 23 provides a potential model that incorporates administrator recommendations supported by this study.

*Figure 24.* Suggested leadership model for the adoption of management innovations within higher education.
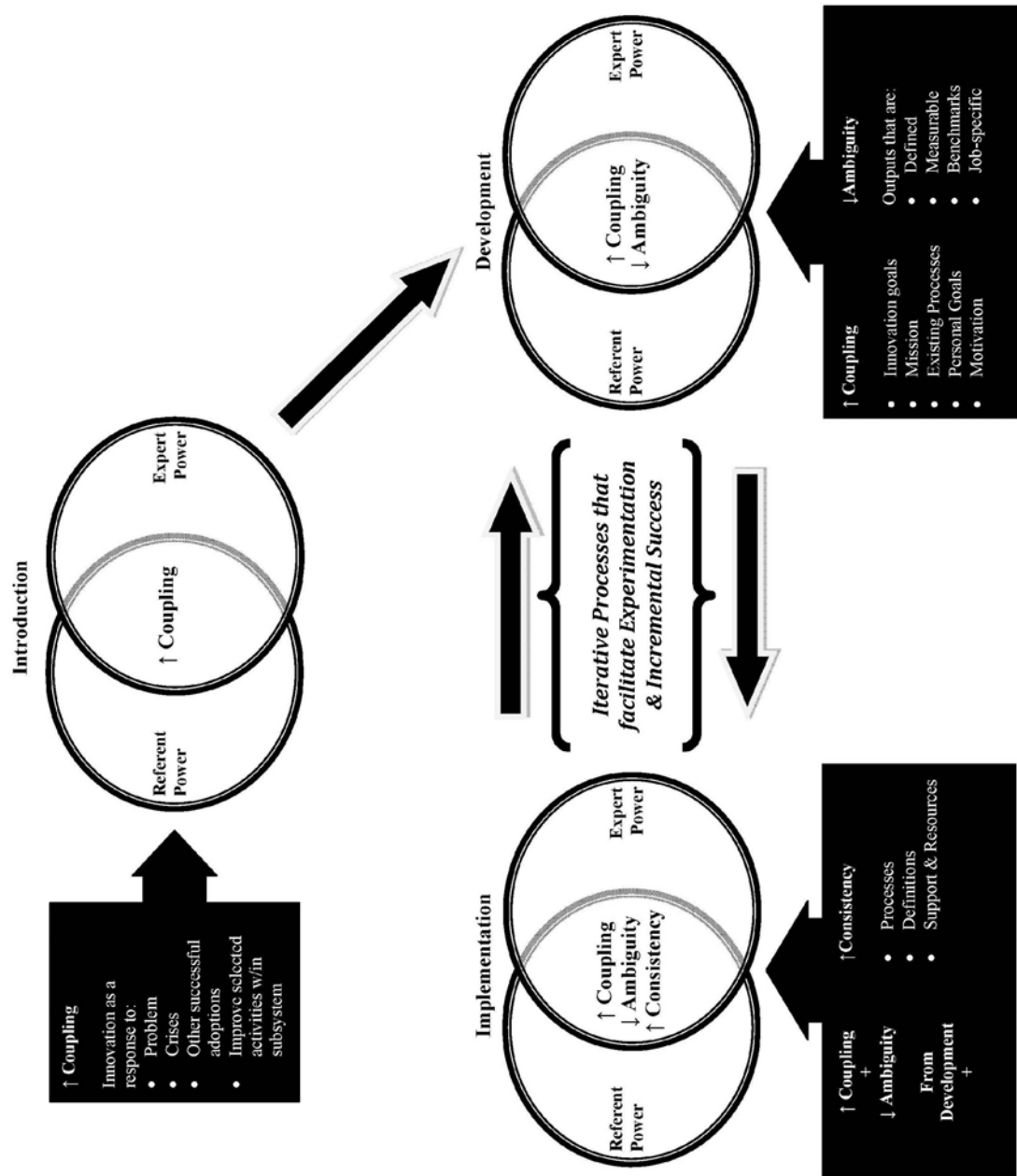
*Recommendations for Research*

As highlighted throughout this chapter, several topics emerged as potential areas of research. Those topics are restated in the following bulleted statements.

- Legitimacy, for this study, was defined as a positive-neutral-negative perception of the management innovation based on the work of French and Raven (1959). Individuals participating in the interviews mostly discussed legitimacy using dichotomous terms with the use of more neutral terms noticeably absent. Hence, the study did not yield results consistent with the anticipated positive-neutral-negative responses and might be an area for future exploration.

- French and Raven (1974), Thambian and Gemmill (1974), Yukle and Falbe (1991), and Warren (1968) noted that changes in behavior linked to the use of reward and coercive power may be short lived, while changes in behavior linked to administrator use of referent and expert power may be sustainable and may increase diffusion of the innovation within the organization. This study examined the phenomenon as a single snapshot in time two years after the adoption of the management innovation. Given the short time period from the introduction of the innovation until when the study was conducted, findings do not reflect any long-term effects. Therefore, future research in this area may want to seek increased understanding related to the longitudinal effect on perceived legitimacy and behavior change of individuals, units and subsystem in which leaders primarily use referent and expert power.

- Understanding the specific factors that influence the willingness of administrators to use power, particularly administrators within lower levels of

the organization, to influence the adoption of management innovations may be an important area for future research.

- Within the context of defining, measuring, and linking outputs to job specific functions in the faculty subsystem, individuals often discussed specific difficulties related to the teaching, research, and service mission. Some interviewees discussed the difficulty of defining and measuring teaching while others discussed the same for research. If individuals perceived differing levels of ambiguity related to outputs, how did this difference impact perceived legitimacy? Did individuals deconstruct management innovations and perhaps view its parts with differing levels of legitimacy based on ambiguity of outputs that may be linked, or coupled, to a specific component of the innovation and thereby influenced individuals to change behaviors or activities to align with that component? Indeed some of the qualitative data suggested this possibility, and it may be an area worthy of future research.

- While the literature appeared supportive of the development and implementation processes that emerged from the study, there is additional significance related to these processes. Prior to this study, the literature substantiated that such processes helped organizations to learn, make meaning of problems, and develop dynamic solutions to these problems. However, the literature seemed unclear as to why organizational learning and meaning making facilitated changed behavior. This study potentially provided a clearer understanding of intermediate variables connecting learning and meaning making processes to adoption. In essence, the study indicated development and implementation

processes influenced coupling and ambiguity, which influenced perceived

legitimacy and ultimately changed behavior. Hence, as an extension of this

study, future research may want to focus on exploring if these processes have

the same effect on other innovations, solutions to problems or threats, or

strategic planning effort faced by the organization including business, higher

education and governmental organizations. In other words, do processes

described in this study increase coupling and decrease ambiguity related to other

innovations, solutions, or strategic plans across organizational sectors?

Subsequently, does legitimacy of the innovation, solution, or plan increase? And

then as a result, do behaviors and activities change to align with the innovation,

solution, or plan?

- Birnbaum noted that when new inputs, perhaps innovations in this case, move

  outside acceptable system limits, leaders look to historical processes that have

  been successful, such as an ad hoc committee or blue ribbon task force, to return

  stability to the system. The focus is on stabilizing the input not the output or the

  technical process. What often emerges from the ad hoc committee is a new

  subsystem in response to the new input. Given Birnbaum's description, the

  study seemed to suggest that the management innovation introduced to the

  system may have been responded to as a new input, and the new input was

  outside of acceptable limits. As a result, several ad hoc committees and task

  forces were formed. Unfortunately, the innovation was in the early stage of

  adoption, so no new subsystems had emerged at the time of the study, but

certainly, this idea of innovation as input may be an area of interest worthy of future exploration.

- It may be important for future research to further explore the degree to which an individual's position within the technical and administrative subsystems and the values of those subsystems interact to influence perceived legitimacy and adoption of a management innovation. Additional understanding may also be gleaned by breaking down the unit of analysis into smaller subsystems within the administrative and technical subsystems.

- Future research related to the specifics of how innovations are introduced, imposed or as a response, to organizations as well as to subsystems within the organization may provide increased understanding related to the adoption of management innovations.

*Summary*

Throughout the twentieth century there was a growth in research related to understanding organizational structure and function. Organizational theory emerged in concert with the prevailing organizational paradigm – Frederick Taylor's scientific management theory. Organizational theory grew from the simple, mechanistic view to today's perspective where higher education institutions are viewed as dynamic organizations made up of complex networks of formal and informal subsystems.

In the last part of the twentieth century, several management innovations were introduced into higher education that appeared to be incongruent with this dynamic and complex organizational perspective. Such efforts continue today. Nationally, the Higher Education Opportunity Act (2008) included increased accountability provisions. In

response, accrediting bodies in higher education have increasingly incorporated linear, outcome-based measures into accreditation standards.

In general, such efforts seek to increase effectiveness and efficiency through standardization of the production function. Standardization of the production function appeared to be incompatible with at least three characteristics that distinguish higher education organizations from businesses: power that is more dispersed than centralized; subsystems that are more loosely coupled than tightly coupled; and multiple organizational goals that tend to be ambiguous and at times conflicting.

In 2001, Birnbaum identified a cycle of adoption and rejection associated with the adoption of management innovations. Birnbaum noted that leaders continued to introduce management innovations into higher education for a number of reasons in spite of these documented cycles of rejection. As demonstrated in this study, the failed implementation of a management innovation is costly, time consuming, and can lead to devastating morale among faculty, staff, and administrators as well as disenfranchisement. As noted by one individual in this study "I felt like I had been sucker punched."

In spite of such negative consequences, Birnbaum concluded that the adoption of management innovations provided a number of benefits to organizations, and theorized that increased legitimacy tied to the innovation, the organization, and its leaders played an important role in the adoption of management innovations. However, before this study, there did not exist a clear understanding of what factors influenced the adoption of a management innovation within higher education. Additionally, there did not exist a clear understanding of how perceived legitimacy of a management

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innovation influenced the adoption of that innovation nor did there exist a clear understanding of the factors that contributed to the development of perceived legitimacy within the context of higher education.

Therefore, the results of this study were significant in that the study confirmed Birnbaum's suspicion that legitimacy played a role in the adoption of a management innovation. In addition, the study identified through literature and confirmed through data analysis several factors that influenced perceived legitimacy of the merit pay system including coupling, ambiguity, and power. Perhaps most important, the results of the study were incorporated into a practical model that can be used by policy makers and administrators to increase successful adoptions of management innovations and minimize adverse effects associated with wasted time, wasted resources, and disenfranchised individuals, thus providing a means to break the failed cycle of adoptions identified by Birnbaum.

REFERENCES

Alderfer, C. (1979). Consulting to underbounded systems. In C. Alderfer and C. Cooper (Eds.), *Advances in Environmental Social Process* (pp. 267-295). New York: Wiley.

Allen, R., Madison, D., Porter, L., Renwick, P., & Mayes, B. (1979). Organizational politics: Tactics, and characteristics of its actors. *California Management Review*, *22*, 77-83.

American Association of State Colleges and Universities. (2008). Retrieved July 19, 2008 from the World Wide Web: http://www.aascu.org/association/members/index.htm.

Carnegie Foundation for the Advancement of Teaching. (2008). Peer group data set. Retrieved July 19, 2008 from the World Wide Web: www.carnegiefoundation.org/classifications/index.asp?key=807.

*American Heritage Dictionary* (2nd ed.). (1982). Berube, M. et al.,(Eds.). Boston, MA: Houghton-Mifflin.

Ary, D., Jacobs, L., & Razavieh, A. (2002). *Introduction to research in education* (6th ed.). Belmont, CA: Wadsworth/Thomsen Learning.

Astin, A. (1985). *Achieving educational excellence*. San Francisco: Jossey-Bass.

Bacharach, S., & Lawler, E. (1980). *Power and politics in organizations: The social psychology of conflicts, coalitions, and bargaining.* San Francisco: Jossey-Bass.

Baldridge, J., Curtis, D., Ecker, G., & Riley, G. (1977). Alternative models of governance in higher education. In. M. Brown II & J. Ratcliffe (Eds.), *Organization and governance in higher education* (5th ed.) (pp. 16-35). Boston, MA: Pearson Custom Publishing.

Ball, S. (1997). Participant observation. In. J. Keeves (Ed.), *Educational research, methodology, and measurement: An international handbook* (2nd ed.) (pp. 310-314). Tarrytown, NY: Elsevier.

Barnard, C. (1938). The economy of incentives. In J. Shafritz & J. Ott (Eds.), *Classics of organization theory* (4th ed.) (pp. 101-111). Fort Worth, TX: Harcourt Brace.

Bass, B. (1960). *Leadership, psychology, and organizational behavior.* New York: Harper.

Bass, B. (1985). *Leadership and performance beyond expectation.* New York: Free Press.

Bass, B. (1996). *A new paradigm of leadership: An inquiry into transformational leadership.* Alexandria, VA: US Army Research Institute.

Bass, B., & Avolio, B. (1990). Developing transformational leadership: 1992 and beyond. *Journal of European Industrial Training, 14,* 21-27.

Baumol, W. (1970). *Economic theory and operations analysis* (2nd ed). New Jersey: Prentice Hall.

Bemowski, K. (1991, October). Restoring pillars of higher education. *Quality Progress*, *24*(10), 37-42.

Bergson, H. (1907). *Creative Evolution* (A. Mitchell, Trans.). New York: Holt and Company. (Original work published 1911).

Bertalanffy, L. (1956). General systems theory. *General Systems: Yearbook of the Society for the Advancement of General Systems Theory, 1*, 1-10.

Bertalanffy, L. (1968). *General systems theory: Foundations, development applications.* New York: George Braziller Press.

Besse, R. (1973). A comparison of the university with the corporation. In J. Perkins (Eds.), *The University as an Organization* (pp. 107-120). New York: McGraw-Hill.

Best, J. (2006). From fad to worse. *The Chronicle of Higher Education*, *52*(32), B6.

Birnbaum, R. (1988). *How colleges work: The cybernetics of academic organization and leadership*. San Francisco, CA: Jossey-Bass.

Birnbaum, R. (2001). *Management fads in higher education.* San Francisco, CA: Jossey-Bass.

Blau, P. (1974). *Exchange and power in social life.* New York: Random House.

Bleakley, F. (1993, July 6). The best laid plans: Many companies try management fads, only to see them flop. *Wall Street Journal*, pp. A1, A66.

Bohl, D., & Luthans, F. (1996, Winter). To our readers. *Organizational Dynamics, 24*(3), 2-3.

Bolman, L., & Deal, T. (1997). *Reframing organizations: Artistry, choice and leadership* (2nd ed.). San Francisco: Jossey-Bass.

Boyer, E. (1990). *Scholarship reconsidered: Priorities of the professoriate.* Princeton, NJ: Carnegie Foundation for the Advancement of Teaching.

Brigham, S. (1993). Lessons we can learn from industry. *Change, 25*(3), 42-48.

Brigham, S. (1995). CQI Successes: Fourteen examples of how campuses have applied CQI to solve problems and improve processes. *AAHE Bulletin, 45*(8), 6-9.

Brock, D., & Harvey, W. (1993). The applicability of corporate strategic principles to diversified university campuses. In. M.  Brown II & J. Ratcliffe (Eds.), *Organization and governance in higher education* (5th ed.) (pp. 16-35). Boston, MA: Pearson Custom Publishing.

Brown, L. (1983). *Managing conflict at organizational interfaces.* Reading, MA: Addison-Wesley.

Brown, L. (1986). Power outside organizational paradigms: Lessons from community partnerships. In S. Srivastva, *The functioning of executive power: How executives influence people and organizations.* San Francisco: Jossey-Bass.

Burns, J. (1978). *Leadership.* New York: Harper.

Byrne, J. (1997, June 2). Management theory – or fad of the month?. *Business Week,* pp. 47.

Caracelli, V. & Greene, J. (1993). Data analysis strategies for mixed-method evaluation designs. *Educational evaluation and policy analysis, 15*(2). 195-207.

Cartwright, D. (1965). Leadership, influence, and control. In J. March (Ed.), *Handbook of organizations* (pp. 1-47). Chicago: Rand McNally.

Chaffee, E. (1985). The concept of strategy: From business to higher education. In J. C. Smart (Ed.), *Higher education handbook of theory and research: Vol. 1* (pp. 133-172). New York: Agathon Press.

Chaffee, E., & Sheer, L. (1992). *Quality: Transforming postsecondary education.* ASHE-ERIC Higher Education Report No. 3. Washington, DC: George Washington University.

Cheit, E. (1971). *The new depression in higher education.* New York: McGraw-Hill.

Coffey, A. (1999). *The ethnographic self: Fieldwork and the representation of identity.* Thousand Oaks, CA: Sage Publications.

Cohen, J., Cohen, P., West, S., & Aiken, L. S. (2003). *Applied multiple regression/correlation analysis for the behavioral sciences* (3rd Ed.). Mahwah, NJ: Lawrence Erlbaum.

Cohen, M., & March, J. (1986). Leadership in an organized anarchy. In. M. Brown II & J. Ratcliffe (Eds.), *Organization and governance in higher education* (5th ed.) (pp. 16-35). Boston, MA: Pearson.

Corson, J. (1960). *Governance of colleges and universities.* New York: McGraw-Hill.

Coughlin, M. (2005). Applied multivariate statistics. In. M. Coughlin (Ed.), *Applications of intermediate/advanced statistics in institutional researcher* (pp. 169-214.

Couper, M., Traugott, M., Lamias, M. (2001, Summer). Web survey design and administration. *The public opinion quarterly, 65*(2), 230-253.

Creswell, J. (1999). Mixed-method research: Introduction and application. In G. Cizek (Ed.), *Handbook of educational policy* (pp. 455-472). Amsterdam: Elsevier.

Creswell, J. (2003). *Research design: qualitative, quantitative, and mixed methods approaches*. Thousand Oaks, CA: Sage Publications.

Creswell, J., Clark, V., Gutmann, M., & Hanson, W. (2003). Advanced mixed methods research designs. In A. Tashakkori & C. Teddlie (Eds.), *Handbook of mixed methods in social and behavioral research* (pp. 209-240). Thousand Oaks, CA: Sage Publications.

Cyert, R., & March, J. (1963). *A behavioral theory of the firm*. Englewood Cliffs, NJ: Prentice-Hall.

Darwin, C. (1964). *Origin of the species* (7th ed.). Cambridge, MA: Harvard University Press.

Dillman, D. A. (2007). *Mail and internet surveys: the tailored design method*. Hoboken, N.J.: Wiley.

Doll, W. (1993). *A post-modern perspective on curriculum*. New York, NY: Teachers College Press.

Downey, J. (1996). The university as trinity: Balancing corporation, collegiums, and community. *Innovative Higher Education*, *21*(2), 73-85.

Edelman, M. (1967). *The symbolic uses of power.* Urbana: University of Illinois Press.

El-Khawas, E. (1993). *Campus trends 1993.* Washington, DC: American Council on Education. (ERIC Document Reproduction Service No. ED359911).

Entin, D. (1993). Boston: Less than meets the eye. *Change, 25*(3), 28-31. (ERIC Document Reproduction Service No. EJ465624).

Etzioni, A. (1961). *A comparative analysis of complex organizations*. New York: Free Press.

Etzioni, A. (1964). *Modern organizations*. Englewood Cliffs, NJ: Prentice-Hall.

Fayol, H. (1916). General principles of management. In J. Shafritz & J. Ott (Eds.), *Classics of organization theory* (4th ed.) (pp. 52-65). Fort Worth, TX: Harcourt Brace.

Ferguson, A. (1998, November 16). Goodbye, brave newtworld. *Time, 152*(20), 134.

Fleener, M. (2002). *Curriculum dynamics: Recreating heart*. New York, NY: Peter Lang Publishing, Inc.

Fox, R., Crask, M., & Kim, J. (1988, Winter). Mail survey response rate: A meta-analysis of selected techniques for inducing response. *The public opinion quarterly, 52*(4), 467-491.

French, J., & Raven, B. (1959). The bases of social power. In J. Shafritz & J. Ott (Eds.), *Classics of organization theory* (4th ed.) (pp. 375-383). Fort Worth, TX: Harcourt Brace.

Gay, L. (1987). *Educational research: Competencies for analysis and application* (3rd ed). Columbus, OH: Merrill Publishing.

Glasser, B., & Strauss, A. (1967). *The discovery of grounded theory: Strategies for qualitative research*. Chicago: Aldine.

Gleick, J. (1987). *Chaos: Making a new science*. New York, NY: Penguin Books.

Golden, C., & Katz, L. (1999). The shaping of higher education: The formative years in the United States, 1890 to 1940. *The Journal of Economic Perspectives, 13*(1), 37-62.

Greene, J., Caracelli, V., & Graham, W. (1989). Toward a Conceptual Framework for Mixed-Method Evaluation Designs. *Educational Evaluation and Policy Analysis, 11*, 255 - 274.

Gross, E., & Grambsch, P. (1974). *Changes in university organization, 1974-1971*. New York: McGraw-Hill.

Gulick, L. (1937). Notes on the theory of organization. In J. Shafritz & J. Ott (Eds.), *Classics of organization theory* (4th ed.) (pp. 86-95). Fort Worth, TX: Harcourt Brace.

Hackman, J. (1976). Group influences on individuals. In M. Dunnette (Ed.), *Handbook of industrial and organizational psychology* (pp. 1455-1525). Chicago: Rand McNally.

Hackman, J., & Oldham, G. (1980). *Work redesign.* Reading, MA: Addison-Wesley.

Hampton, W., & Norman, J. (1987, March 16). General motors: What went wrong – eight years and billions of dollars haven't made its strategy succeed. *Business Week*, p. 102.

Harari, O. (1993). Ten reasons why TQM doesn't work. *Management Review, 82*(1), 33-38.

Henderson, L. (1935). *Pareto's general sociology*. Cambridge: Harvard Press.

Hickson, D., Butler, R., Axelsson, R., & Wilson, D. (1976). Decisive coalitions. In J. Shafritz & J. Ott (Eds.), *Classics of organization theory* (4th ed.) (pp. 412-419). Fort Worth, TX: Harcourt Brace.

Hickson, D., Hinnings, C., Lee, C., Schneck, R., & Pennings, J. (1971). A strategic contingencies theory of intra-organizational power. *Administrative Science Quarterly, 16,* 226-229.

Higher Education Opportunity Act. (2008). Public Law 110-315. Washington, DC: U.S. Government Printing Office.

Hollander, E. (1958). Conformity, status, and idiosyncrasy credit. *Psychological Review, 65,* 117-127.

Holusha, J. (1989, January 29). No utopia, but to workers, it's a job. *New York Times*, section 3, p. 1.

Homans, G. (1950). *The human group*. San Diego, CA: Harcourt Brace Jovanovich.

Homans, G. (1961). *Social behavior: Its elementary forms.* San Diego, CA: Harcourt Brace Jovanovich.

Huberman, A., & Miles, M. (2002). *The qualitative researcher's companion.* Thousand Oaks, CA: Sage Publications.

Jacob, R. (1993, November 18). TQM: More than a dying fad. *Fortune, 128*(9), 66-72.

Jacobs, T. (1970). *Leadership and exchange in formal organizations.* Alexandria, VA: Human Resources Research Organization.

Jelinek. S., Forster, R., & Sauser, W. (1995). A rose by any other name: Applying total quality management to higher education. In S. Sims and R. Sims (Eds.), *Total quality management in higher education.* New York: Praeger.

Johnson, B., & Turner, L. (2003). Data collection strategies in mixed methods research. In A. Tashakkori & C. Teddlie (Eds.), *Handbook of mixed methods in social and behavioral research* (pp. 297-319). Thousand Oaks, CA: Sage Publications.

Johnson, J. (1998). Embracing change: A leadership model for the learning organization. *International Journal of Training and Development, 2*(2), pp. 141-150.

Jones, J., & Taylor, J. (1990). *Performance indicators in higher education.* Oxford: SRHE [in association with] Oxford University Press.

Kanter, R. (1979). Power failure in management circuits. In J. Shafritz & J. Ott (Eds.), *Classics of organization theory* (4th ed.) *(*pp. 400-411). Fort Worth, TX: Harcourt Brace.

Kaplin, W., & Lee, B. (1995). *The law of higher education* (3rd ed.). San Francisco, CA: Jossey-Bass.

Kast, F., & Rosenzweig, J. (1972). General systems theory: Application for organization and management. In J. Shafritz & J. Ott (Eds.), *Classics of organization theory* (4th ed.) (pp. 302-315). Fort Worth, TX: Harcourt Brace.

Katz, R. & Kahn, D. (1966). The social psychology of organizations. In J. Shafritz & J. Ott (Eds.), *Classics of organization theory* (4th ed.) (pp. 274-286). Fort Worth, TX: Harcourt Brace.

Keeves, J., & Snowden, S. (1997). Analysis of descriptive data. In J. Keeves (Ed.), *Educational research, methodology, and measurement: An international handbook* (pp. 296-306). Tarrytown, NY: Elsevier Science.

Keller, G. (1992). Increasing quality on campus: What should colleges do about the TQM mania?. *Change, 24*(3), 48-51.

Kelman, H. (1958). Compliance, identification, and internalization: Three processes of attitude change. *Journal of Conflict Resolution, 2*, 51-56.

Kemper, E., Stringfield, S., & Teddlie, C. (2003). Mixed methods sampling strategies in social science research. In A. Tashakkori & C. Teddlie (Eds.), *Handbook of*

*mixed methods in social and behavioral research* (273-296). Thousand Oaks, CA: Sage Publications.

Kerr, C. (2001). *The uses of the university* (5th ed.). Cambridge, MA: Harvard University Press.

Kipnis, D. (1974). *The powerholders*. Chicago, IL: Chicago University Press.

Kotter, J. (1982). *The general managers*. New York: Free Press.

Kotter, J. (1985). *Power and influence: Beyond formal authority.* In J. Shafritz & J. Ott (Eds.), *Classics of organization theory* (4th ed.) (pp. 127-137). Fort Worth, TX: Harcourt Brace.

Lawler, E. (1986). *High-involvement management: Participative strategies for improving organizational performance.* San Francisco: Jossey-Bass.

Lawrence, A., & Weckler, D. (1990, Spring). Can NUMMI's team concept work for you? Part I: A bicultural experiment. *Northern California Executive Review,* pp. 12-17.

Lincoln, Y., & Guba, E. (1985). *Naturalistic inquiry.* Beverly Hills, CA: Sage

Lincoln, Y., & Guba, E. (1990). Judging the quality of case study reports. *International Journal of Qualitative Studies in Education, (3),* 53-59.

Linton, R. (1945). *The cultural background of personality*. New York: Appleton-Century-Crofts.

Lipman-Blumen, J. (1998). Connective leadership: What business needs to learn from academe. *Change, 30*(1), 49-53.

Leslie, L., & Johnson, G. (1974). The market model and higher education, *The Journal of Higher Education, 45*, 1-20.

Lomax, R. (2001). *An introduction to statistical concepts for education and behavioral sciences.* Mahwah, NJ: Lawrence Erlbaum Associates, Publishers.

Mangan, K. (1992, August 12). TQM: Colleges embrace the concept of 'Total Quality Management'. *Chronicle of Higher Education*, pp. A25-A26.

March, J. (1962). The business firm as a political coalition. *Journal of Politics, 24*, 662-678.

March, J. (1966). The power of power. In D. Easton (Ed.), *Varieties of political theory* (pp. 39-70). Englewood Cliffs, NJ: Prentice Hall.

March, J., & Simon, H. (1958) *Organizations*. New York: Wiley.

Marchese, T. (1991, November). TQM reaches the academy. *AAHE Bulletin*, *44*(3), 3-9. (ERIC Document Reproduction Service No. ED340271).

Marchese, T. (1996). Bye, bye CQI for now. *Change, 25*(3), 10-13.

Maslow, A. (1943). A theory of human motivation. In J. Shafritz & J. Ott (Eds.), *Classics of organization theory* (4th ed.) (pp. 163-175). Fort Worth, TX: Harcourt Brace.

Mason, J. (2002). *Qualitative researching* (2nd ed.). Thousand Oaks, CA: Sage Publications.

Matheson, J. (2007). The voice transcript technique: Use of voice recognition software to transcribe digital interview data in qualitative research. *The Qualitative Report, 12*(4), 547-560.

Mathews, J. (1993, June 6). Totaled quality management: Consultants flourish helping firms repair the results of a business fad. *Washington Post*, pp. H1, H16.

Mayo, G. (1933). *The human problems of an industrial civilization*. Boston, MA: Harvard Business School.

Mazzoni, T. (1991). Analyzing state school policy making: An arena model. *Education Evaluation and Policy Analysis, 13*(2), 115-138.

McCallum, D. (1856). Superintendent's report. In J. Shafritz & J. Ott (Eds.), *Classics of organization theory* (4th ed.) (pp. 46-47). Fort Worth, TX: Harcourt Brace.

McGregor, D. (1957). A human side of enterprise. In J. Shafritz & J. Ott (Eds.), *Classics of organization theory* (4th ed.) (pp. 176-182). Fort Worth, TX: Harcourt Brace.

McGregor, D. (1960). *The human side of enterprise*. New York: McGraw-Hill.

Melissaratos, A., & Arendt, C. "TQM: The Westinghouse Experience." In A. M. Hoffman and D. J. Julius (eds.), *Total Quality Management: Implications for Higher Education* (pp. 17-30). Maryville, MO: Prescott, 1995.

Merriam, S. (1998). *Qualitative research and case study applications in education*. San Francisco: Jossey-Bass.

Mertler, C. & Vannatta, R. (2005). *Advanced and multivariate statistical methods: Practical applications and interpretation* (3rd ed.). Glendale, CA: Pyrczak Publishing.

Metcalfe, H. (1885). The cost of manufactures and the administration of workshops, public and private. New York: Wiley.

Michealsen, J. (1981). A theory of decision making in the public schools: A public school choice approach. In S. B Bacharach (Ed.) *Organizational behavior in school and school districts* (pp. 208-241). New York: Praeger Publishers.

Millett, J. (1962). *The academic community: An essay on organization.* New York: McGraw-Hill.

Mintzberg, H. (1979). The professional bureaucracy. In. M. Brown II & J. Ratcliffe (Eds.), *Organization and governance in higher education* (5th ed.) (pp. 16-35). Boston, MA: Pearson Custom Publishing.

Mintzberg, H. (1983). *Power in and around organizations*. Englewood, NJ: Prentice-Hall.

Morse, J. (2003). Principles of mixed methods and multimethod research design. In A. Tashakkori & C. Teddlie (Eds.), *Handbook of mixed methods in social and behavioral research* (pp. 189-208). Thousand Oaks, CA: Sage Publications.

Oldham, G. (1976). Job characteristics and internal motivation: The moderating effect of interpersonal and individual variables. *Human Relations, 29*, 559-569.

Onwuegbuzie, A., & Teddlie, C. (2003). A framework for analyzing data in mixed methods research. In A. Tashakkori & C. Teddlie (Eds.), *Handbook of mixed methods in social and behavioral research* (pp. 351-382). Thousand Oaks, CA: Sage Publications.

Onwuegbuzie, A., & Johnson, R. (2006). The validity issue in mixed research. *Research in schools (13)*1, 48-63.

Park, J., & Zeanah, A. E. (2005). An evaluation of voice recognition software for use in interview-based research: A research note. *Qualitative Research, 5*(2), 245-251.

Parsons, T. (1960). *Structure and process in modern societies.* New York: Free Press.

Patchen, M. (1974). The locus and basis of influence on organizational decision. *Organizational Behavior and Human Performance, 11,* 195-221.

Patton, M. (2002). *Understanding research methods: An overview of the essentials* (3rd ed.). Los Angeles, CA: Pyrczak Publishing.

Pedhazur, E. (1997). *Multiple regression in behavioral research: Explanation and prediction* (3rd ed.). Fort Worth, TX: Harcourt Brace College Publishers.

Pfeffer, J (1978). *Organizational design.* Arlington Heights, IL: AHM Publishing.

Pfeffer, J. (1981). *Power in organizations.* In J. Shafritz & J. Ott (Eds.), *Classics of organization theory* (4th ed.) (pp. 359-374). Fort Worth, TX: Harcourt Brace.

Rigby, D. (1998). *Management tools and techniques*. Boston: Bain and Company.

Rogers, E. (1995). *Diffusion of innovations* (4th ed.). New York: Free Press.

Sanchez-Jankowski, M. (2002). Representation, responsibility, and reliability in participant-observation. In T. May (Ed.), *Qualitative Research in Action,* (pp. 144-160). Thousand Oaks, CA: Sage Publications.

Sanders, I. (1973). The university as community. In J. Perkins (Ed.), *The university as an organization*. New York: McGraw-Hill.

Scheff, T. (1970). Control over policy by attendants in a mental hospital. In H. Polsky, D. Claster, & C. Goldberg (Eds.), *Social system perspectives in residential institutions.* (pp. 240-258). East Lansing, MI: Michigan State University Press.

Schmidt, W., & Finnigan, J. (1992) *The race without a finish line: America's quest for total quality.* San Francisco: Jossey-Bass.

Schumacker, R. & Lomax, R. (2004). *A beginner's guide to structural equation modeling* (2nd ed.). Mahwah, NJ: Lawrence Erlbaum Assoiciates.

Schwandt, T. (2001). *Dictionary of qualitative inquiry.* Thousand Oaks, CA: Sage Publications.

Schwartz, M. & Schwartz, C. (1955). Problems in participant observation. *The American journal of sociology, 60*(4), 343-353.

Scott, W. (1961). Organizational theory: An overview and an appraisal. *Academy of Management Journal, 4,* 7-26.

Selznick, P. (1948). The foundations of the theory of organization. In J. Shafritz & J. Ott (Eds.), *Classics of organization theory* (4th ed.) (pp. 127-137). Fort Worth, TX: Harcourt Brace.

Senge, P. (1990). *The fifth discipline: The art and practice of the learning organization.* New York: Doubleday.

Senge, P. (2000). Building learning organizations. In M. C. Brown II and J. L. Ratcliffe (Eds.), *Organization and governance in higher education* (5th ed.), (pp. 287-304). Boston, MA: Pearson Custom Publishing.

Seymour, D. (1991, November). TQM on campus: What the pioneers are finding. *AAHE Bulletin, 44*(3), 14-27.

Seymour, D. (1992). *On Q: Causing quality in higher education.* New York: Macmillan.

Shadish, W., Cook, T., & Campbell, D. (2001). *Experimental and quasi-experimental designs for generalized causal inference.* Boston: Houghton Mifflin.

Shafritz, J., & Ott, J. (1996). *Classics of organization theory* (4th ed.). Fort Worth, TX: Harcourt Brace.

Simon, H. (1946). The proverbs of administration. In J. Shafritz & J. Ott (Eds.), *Classics of organization theory* (4th ed.) (pp. 112-126). Fort Worth, TX: Harcourt Brace.

Simon, H. (1957). *Administrative behavior* (2nd ed.). New York: Macmillan.

Smith, A. (1776). Of the division of labor. In J. Shafritz & J. Ott (Eds.), *Classics of organization theory* (4th ed.) (pp. 40-45). Fort Worth, TX: Harcourt Brace.

Sorenson, O. (2003, April). Interdependence and adaptability: Organizational learning and the long-term effect on integration. *Management Science, 49*(4), 446-463.

Stake, R. (1995). *The art of case study research.* Thousand Oaks, CA: Sage Publications.

Steinbruner, J. (1974). *The cybernetic theory of decision.* Princeton: Princeton University Press.

Strauss, A., & Corbin, J. (1998). *Basics of qualitative research: Techniques and procedures for developing grounded theory.* Thousand Oaks, CA: Sage.

Taylor, F. (1916). The principles of scientific management. In J. Shafritz & J. Ott (Eds.), *Classics of organization theory* (4th ed.) (pp. 52-65). Fort Worth, TX: Harcourt Brace.

Teddlie, C., & Yu, F. (2007, January). Mixed methods sampling: A typology with examples. *Journal of mixed methods research, 1*(1), 77-100.

Teddlie, C., & Tashakkori, A. (2003). Major issues and controversies in the use of mixed methods in social and behavioral sciences. In A. Tashakkori & C. Teddlie

(Eds.), *Handbook of mixed methods in social and behavioral research* (pp. 3-50). Thousand Oaks, CA: Sage Publications.

Thambain, H., & Gemmill, G. (1974). Influence styles of project managers: Some project performance correlates. *Academy of Management Journal*, *17*, 216-224.

Thompson. J. (1967). Organizations in action. In J. Shafritz & J. Ott (Eds.), *Classics of organization theory* (4th ed.) (pp. 412-419). Fort Worth, TX: Harcourt Brace.

Thuckman H., & Chang, C. (1988). Conflict, congruence and generic university goals. *Journal of Higher Education*, *59*, 611-633**.**

Towne, H. (1886). The engineer and the economist. In J. Shafritz & J. Ott (Eds.), *Classics of organization theory* (4th ed.) (pp. 48-51). Fort Worth, TX: Harcourt Brace.

United States. (1983). *A nation at risk: The imperative for educational reform : A report to the Nation and the Secretary of Education, United States Department of Education.* Washington, DC: National Commission on Excellence in Education.

United States Department of State. (1999, March). Toward the 21st Century. In *An Outline of American History* (chap. 13). Retrieved March 17, 2005, from http://usinfo.state.gov/products/pubs/history/ch13.htm.

Urwick, L. (1956). *The golden book of management.* In J. Shafritz & J. Ott (Eds.), *Classics of organization theory* (4th ed.). Fort Worth, TX: Harcourt Brace.

Wallen, N., & Fraenkel, J. (2001). *Educational research: A guide to the process* (2nd ed.)*.* Mahwah, NJ: Lawrence Erlbaum Associates.

Walton, R., & McCredie, R. (1965). *A behavioral theory of labor negotiations*. New York: McGraw-Hill.

Warren, D. (1968). Power, visibility and conformity in formal organizations. *American Sociological Review, 6*, 951-970.

Weatherly, R., & Lipsky, M. (1977). Street-level bureaucrats and institutional innovation: Implementing special education reform. *Harvard Educational Review, 47*(2), 171-197.

Weber, M. (1922). Bureaucracy. In J. Shafritz & J. Ott (Eds.), *Classics of organization theory* (4th ed.) (pp. 80-85). Fort Worth, TX: Harcourt Brace.

Weick, K. (1976). Educational organizations as loosely coupled systems. *Administrative Science Quarterly, 21*, 1-19.

Weiner, N. (1948). *Cybernetics.* Cambridge, MA: MIT Press

Wheatley, M. (1999). *Leadership and the new science: Discovering order in a chaotic world.* San Francisco, CA.: Barrett-Koehler.

Wuensch, K. (2006). *Conducting a path analysis with SPSS/AMOS.* Retrieved January 6, 2009, from http://core.ecu.edu/psyc/wuenschk/MV/SEM/Path-SPSS-AMOS.doc.

Yin, R. (2003). *Case study research design and methods.* Thousand Oaks, CA: Sage Publications.

Yukl, G. (2002). *Leadership in organizations* (5$^{th}$ ed.). New Jersey: Prentice Hall.

Yukl, G., & Falbe, C. (1991). The importance of different power sources in downward and lateral relations. *Journal of Applied Psychology, 76*, 416-423.

APPENDIX A: INNOVATION ADOPTION SURVEY

**Section I. Demographic Information**
Please select one response for each of the following items.
1.    Gender
   ❑ Male
   ❑ Female

2.    Age: _____

3.    Highest degree earned
   ❑ Less than a high school diploma
   ❑ High school diploma
   ❑ Associate's degree
   ❑ Bachelor's degree
   ❑ Master's degree (M.Ed., MBA)
   ❑ First-Professional Degree (J.D., M.D.)
   ❑ Doctoral degree (Ph.D., Ed.D., D.P.A., etc.)

4.    Years of continuous full-time employment at CPU (if less than 1 year, enter "0"):
_____

5.    Please identify your position and the campus unit with which you are most closely affiliated.
   ❑ Faculty (not including deans or department chairs).
      ❑ College of Education and Psychology
      ❑ College of Health and Sciences
      ❑ College of Liberal Arts and Social Sciences
      ❑ School of Business
      ❑ Library
   ❑ Non-Faculty
      ❑ President's Office
      ❑ Academic Affairs
      ❑ Student Development
      ❑ Administration and Finance
      ❑ Advancement and Development
      ❑ Athletics
      ❑ Communications and Marketing
  If non-faculty, please select one of the following job classifications.
      ❑ Senior-level administrator (president, vice presidents, associate and assistant vice presidents, dean of students, athletic director, communications and marketing director)
      ❑ Mid-level administrator (all other administrators **who directly supervise full-time employees** including academic deans, academic department chairs, unit directors, program directors, etc.)
      ❑ Professional staff
      ❑ Support staff

| Section II. Merit Pay Perceptions | | | | | | |
|---|---|---|---|---|---|---|
| This section seeks to understand your views about the merit pay system that was implemented at CPU and to understand how those views may be influencing your attitudes and behaviors related to the merit pay system. Over the past two years, supervisors at CPU have used a merit pay system to rank employee job performance in one of three categories: (1) exceeds expectations or exceptional merit; (2) meets expectations or base merit; and (3) does not meet expectations or no merit. Salary increases or stipends have been distributed based on these categories. Please use your experiences with the merit pay system and its related processes as a basis for responding to the following statements. | | | | | | |
| *Instructions: On a scale of 1 to 5, please rate the level at which you disagree or agree with each of the following statements: 1 = Strongly Disagree (SD); 2 = Disagree (D); 3 = Neutral (N); 4 = Agree (A); 5 = Strongly Agree (SA). If the item is not applicable to you, please leave blank.* | | SD | D | N | A | SA |
| 6. | I understand the level at which I must perform in order to meet "exceptional merit". | 1 | 2 | 3 | 4 | 5 |
| 7. | On my most recent evaluation, I feel my performance was accurately quantified and reflected my actual performance. | 1 | 2 | 3 | 4 | 5 |
| 8. | I can change or adjust how I work – my work processes – to achieve a higher level of performance expected in the merit pay system. | 1 | 2 | 3 | 4 | 5 |
| 9. | The merit pay system is a fair and objective method to evaluate my job performance at CPU. | 1 | 2 | 3 | 4 | 5 |
| 10. | CPU's merit pay system provides an incentive for me to increase my work productivity. | 1 | 2 | 3 | 4 | 5 |
| 11. | I feel that if I improve my work performance, I will receive a corresponding salary increase based on the way the merit pay system is supposed to work. | 1 | 2 | 3 | 4 | 5 |
| 12. | On my most recent evaluation, the merit pay system proved to be a valid approach for evaluating my performance as an employee. | 1 | 2 | 3 | 4 | 5 |
| 13. | I know and understand how the merit pay system works. | 1 | 2 | 3 | 4 | 5 |
| 14. | I know and understand the evaluation criteria used in the merit pay system (i.e., I understand the level at which I must perform in order to receive the corresponding level of evaluation). | 1 | 2 | 3 | 4 | 5 |
| 15. | I have formed a clear opinion (positive or negative) about the potential benefits of the merit pay system to me. | 1 | 2 | 3 | 4 | 5 |
| 16. | I plan to change behaviors or activities as an employee to align my job performance with the evaluation criteria of the merit pay system. | 1 | 2 | 3 | 4 | 5 |
| 17. | What would you say has been your percent of actual change (0% to 100%) in your behavior or activities related to the criteria of the merit pay system? | _____ % of change in actual behaviors or activities | | | | |

| | | No Influence | | | | Significant Influence |
|---|---|---|---|---|---|---|
| *Regarding your response to question 17, please indicate the degree to which the following factors influenced your percent of actual change on a scale from 1 to 5 with 1 = No Influence and 5 = Significant Influence. If the item is not applicable to you, please leave blank.* | | | | | | |
| 18. | The merit pay system is a good fit for me and for CPU or the merit pay system makes sense. | 1 | 2 | 3 | 4 | 5 |
| 19. | The influence of the president. | 1 | 2 | 3 | 4 | 5 |
| 20. | The influence of senior administration. | 1 | 2 | 3 | 4 | 5 |
| 21. | The opportunity to increase my salary. | 1 | 2 | 3 | 4 | 5 |
| 22. | The opportunity for increased recognition as an CPU employee. | 1 | 2 | 3 | 4 | 5 |
| 23. | Negative consequences for not changing (i.e., no salary increase, negative comments by peers, negative evaluation by supervisor). | 1 | 2 | 3 | 4 | 5 |
| 24. | Lack of employee production benchmarks, or production benchmarks that are difficult to measure. | 1 | 2 | 3 | 4 | 5 |
| 25. | My lack of understanding and knowledge of the merit pay system. | 1 | 2 | 3 | 4 | 5 |
| 26. | Lack of my supervisor(s)' understanding and knowledge of the merit pay system | 1 | 2 | 3 | 4 | 5 |
| 27. | Please list any additional factors that have influenced your percent of actual change reflected in your answer to question 17. | | | | | |

| | | SD | D | N | A | SA |
|---|---|---|---|---|---|---|
| *Questions 28-31 seek to understand the degree to which you and your unit can define its inputs and outputs. For example, cotton is milled to produce fabric. Cotton is the input. Fabric is the output. In a higher education setting, students complete courses to earn a degree. Students are the inputs. Graduates are the outputs. Please leave blank if you do not have an answer or if the item is not applicable to you.* | | | | | | |
| 28. | I can **identify** the inputs and outputs for my work unit. | 1 | 2 | 3 | 4 | 5 |
| 29. | I can **measure** the inputs and outputs for my work unit. | 1 | 2 | 3 | 4 | 5 |
| 30. | The merit pay system **identifies** my work outputs. | 1 | 2 | 3 | 4 | 5 |
| 31. | The merit pay system **measures** my work outputs and rewards me for it. | 1 | 2 | 3 | 4 | 5 |

| **Section III. Administrator Role** | | | | | |
|---|---|---|---|---|---|
| Section III seeks to understand your perceptions of how the administrator over your unit has influenced your attitudes and behaviors related to the merit pay system. Please consider any changes in your attitude and behaviors at this point in time as compared to when you first learned about the merit pay system. What has been the influence of your administrator on those changes? When the term administrator is used, it is referencing the person who is responsible for completing your merit pay evaluation. | | | | | |
| *Instructions: Please indicate your rating for each of the following items. Please leave blank if the item is not applicable to you.* | No Influence | | | | Significant Influence |
| 32. | On a scale of 1 to 5, please rate the extent to which the administrator(s) in your area have influenced your attitudes and behaviors of the merit pay system. | 1 | 2 | 3 | 4 | 5 |
| *With regard to your response to question 32, please indicate the degree to which each of following situations contributed to your attitudes and behaviors of the merit pay system.* | SD | D | N | A | SA |
| 33. | I appreciated the leadership authority of my administrator(s) and followed their leadership. | 1 | 2 | 3 | 4 | 5 |
| 34. | I knew the administrator(s) would reward a change in my attitude or behavior related to the merit pay system. | 1 | 2 | 3 | 4 | 5 |
| 35. | I wanted to avoid any negative consequences that might result from my unwillingness to align my attitudes and behaviors with the expectations of my administrator(s). | 1 | 2 | 3 | 4 | 5 |
| 36. | I trusted my administrator(s) and knew that they would do good things for me if I followed their leadership related to the merit pay system. | 1 | 2 | 3 | 4 | 5 |
| 37. | I knew the administrator(s) had knowledge and expertise with regard to the merit pay system, and I chose to follow their leadership on this issue. | 1 | 2 | 3 | 4 | 5 |
| 38. | I did not want to risk the relationship with my administrator(s) and therefore conformed to their expectations with regard to the merit pay system. | 1 | 2 | 3 | 4 | 5 |
| 39. | My administrator(s)' positions within the organization influenced my attitudes and behavior with regard to the merit pay system. | 1 | 2 | 3 | 4 | 5 |
| 40. | I anticipated that incentives would be provided by my administrator(s) if I conformed to their expectations reflective in the merit pay system. | 1 | 2 | 3 | 4 | 5 |
| 41. | When I have followed the administrator(s)' judgment and experience in the past, I have been pleased with the outcome for me. Therefore, I followed the administrator(s)' lead on the merit pay system. | 1 | 2 | 3 | 4 | 5 |
| 42. | I thought I might be penalized by my administrator(s) for not following their leadership related to the merit pay system. | 1 | 2 | 3 | 4 | 5 |

43.    Please indicate the merit rating you received on your most recent evaluation.
- ❏ No Merit – Does not meet expectations
- ❏ Base Merit – Meets expectations
- ❏ Exceptional Merit – Exceeds expectations
- ❏ I am a recent employee and have not yet been evaluated

44.    From your perspective, did this rating accurately reflect your level of employee performance for the evaluation period?
- ❏ Yes
- ❏ No
- ❏ I am a recent employee and have not yet been evaluated

45.    If no, please provide information as to why you think it did not accurately reflect your employee performance.

46.    What future changes would you suggest be made to the merit pay system?

APPENDIX B: INTERVIEW GUIDES

*Formal Interview Questions – Interview 1*

*General*
   A. Why do you perceive the merit pay system was put in place?
   B. What did you hope the merit pay system would accomplish within the university? To what degree has that been accomplished?

*Legitimacy*
   A. What are your perceptions regarding the legitimacy (the use) of a merit pay system at The university? How does it fit? Why?
   B. What are your perceptions about the use of a merit pay system to evaluate employee performance?

*Organizational subsystems*
   A. What are the differences that you perceive, if any, in the use of a merit pay system to evaluate faculty versus nonfaculty employees?

*Power*
   A. As president, how did you try to influence the implementation of the merit pay system?
   B. What impact did your influence have on individuals your direct reports? Indirect reports?
   C. What types of leadership activities were more successful than others in implementing the merit pay system?
   D. I suspect there were some across the university that responded well and some that didn't. Why do you think there were these differences?

*Coupling*
   A. Based on your perceptions, how would you describe linkages between the merit pay system and the University?
   B. How did you perceive the University would be impacted if everyone aligned their work production with the criteria of the merit pay system?
   C. How did your perceptions about the linkage between the University and the merit pay system impact your overall perceptions about the legitimacy of the merit pay system?

*Ambiguity*
   A. At the point you implemented the merit pay system, did you perceive that the University's inputs and outputs were easily defined? What about measured?
   B. How did that perception change as you implemented the merit pay system?
   C. How do you think the ambiguity or clarity of these inputs and outputs impacted how you perceived the legitimacy of the merit pay system? What about how others in your unit perceived the legitimacy of the system?

*Willingness to adopt*
   A. What changes in work production/behaviors have changed since the merit pay system was implemented?
   B. What types of questions did your direct reports ask you about implementing the merit pay system? What were the major issues that had to be worked through?

*Confirming/Exploring Questions*
   A. Overall, what have been the successes of the merit pay system?
   B. Can you perhaps limit that list to the one or two things that contributed most to that success?
   C. Overall, what have been the not so successful aspects of the merit pay system?
   D. Again, what do you think contributed to the not so successful aspects?
   E. Knowing what you know now, how might you approach the implementation of the merit pay system differently if you had a chance to start over?
   F. What are the next steps that you think the University needs to take with regard to the merit pay system?

*General*
    A.  Why do you perceive the merit pay system was put in place?
    B.  Can you talk a little bit about how the merit pay system was implemented within the university and more specifically within your unit?

*Legitimacy*
    A.  What are your perceptions regarding the legitimacy (the use) of a merit pay system at The university? How does it fit? Why?
    B.  What are your perceptions about the use of a merit pay system to evaluate employee performance?

*Organizational subsystems*
    A.  What are the differences that you perceive, if any, in the use of a merit pay system to evaluate faculty versus nonfaculty employees?
*Power*
    A.  As vice president, how did you try to influence the implementation of the merit pay system?
    B.  What impact did your influence have on your direct reports? Indirect reports?
    C.  What types of leadership activities were more successful than others in implementing the merit pay system?
    D.  I suspect there were some across your unit that responded well and some that didn't. Why do you think there were these differences?

    <u>Switch to you as an employee</u>
    A.  What is your perception of the president-your supervisor- as related to the implementation of the merit pay system?
    B.  How do you perceive that the president would use the merit pay system?
    C.  Based on your perceptions, what has the president done to facilitate change in your understanding, attitudes and behavior as related to the merit pay system?
    D.  Based on your perceptions, how did the president use power to facilitate your adoption and your unit's adoption of the merit pay system?
    E.  How have these perceptions about the president and his use of power impacted your perception about the legitimacy of the merit pay system?
*Coupling*
    A.  Based on your perceptions, how would you describe linkages between the merit pay system and your unit?
    B.  How did you perceive your unit would be impacted if everyone aligned their work production with the criteria of the merit pay system?
    C.  How did your perceptions about the linkage between your unit and the merit pay system impact your overall perceptions about the legitimacy of the merit pay system?

*Ambiguity*
   A. At the point you implemented the merit pay system, did you perceive that your unit's outputs were easily defined?  What about measured?
   B. How did that perception change as you implemented the merit pay system?
   C. How do you think the ambiguity or clarity of these outputs impacted how you perceived the legitimacy of the merit pay system? What about how others in your unit perceived the legitimacy of the system?

*Willingness to adopt*
   A. What changes in work production/behaviors have changed since the merit pay system was implemented?
   B. What types of questions did your direct reports ask you about implementing the merit pay system? What were the major issues that had to be worked through?
   C. What were the major issues did you and the president worked through during the implementation of the merit pay system?

*Confirming/Exploring Questions*
   A. Overall, what have been the successes of the merit pay system?
   B. Can you perhaps limit that list to the one or two things that contributed most to that success?
   C. Overall, what have been the not so successful aspects of the merit pay system?
   D. Again, what do you think contributed to the not so successful aspects?
   E. Knowing what you know now, how might you approach the implementation of the merit pay system differently if you had a chance to start over?
   F. What are the next steps that you think the University needs to take with regard to the merit pay system?

*General*
   A.  Why do you perceive the merit pay system was put in place?
   B.  Can you talk a little bit about how the merit pay system was implemented within the university and more specifically within the School of Business?

*Legitimacy*
   A.  What are your perceptions regarding the legitimacy (the use) of a merit pay system at The university? How does it fit? Why?
   B.  What are your perceptions about the use of a merit pay system to evaluate employee performance?

*Organizational subsystems*
   A.  How would your perceptions of the merit pay system change, if you were a <u>faculty/nonfaculty</u> (insert other subsystem than the subsystem of the subject) member.
   B.  What are the differences that you perceive, if any, in the use of a merit pay system to evaluate faculty versus nonfaculty employees?

*Power*
   A.  As Dean of the School of Business, how did you try to influence the implementation of the merit pay system?
   B.  What impact did your influence have on individuals your direct reports? Indirect reports?
   C.  What types of leadership activities were more successful than others in implementing the merit pay system?
   D.  I suspect there were some across your unit that responded well and some that didn't. Why do you think there were these differences?

   <u>Switch to you as an employee</u>
   E.  What is your perception of the vice president-your supervisor- as related to the implementation of the merit pay system?
   F.  How do you perceive that the vice president would use the merit pay system?
   G.  Based on your perceptions, what did the vice president do to facilitate change in your understanding, attitudes and behavior as related to the merit pay system?
   H.  Based on your perceptions, how did the vice president use power to facilitate your adoption and your unit's adoption of the merit pay system?
   I.  How have these perceptions about the vice president and his use of power impacted your perception about the legitimacy of the merit pay system?

*Coupling*
   A.  Based on your perceptions, how would you describe linkages between the merit pay system and the goals of your unit, or the university?
   B.  How did you perceive your unit would be impacted if everyone aligned their work production with the criteria of the merit pay system?

C. How did your perceptions about the linkage between your unit and the merit pay system impact your overall perceptions about the legitimacy of the merit pay system?

*Ambiguity*
A. What are the inputs and outputs within the School of Business?
B. At the point you implemented the merit pay system, did you perceive that your units inputs and outputs were easily defined? What about measured?
C. How did that perception change as you implemented the merit pay system?
D. How do you think the ambiguity or clarity of these inputs and outputs impacted how you perceived the legitimacy of the merit pay system? What about how others in your unit perceived the legitimacy of the system?

*Willingness to adopt*
A. What changes in work production/behaviors have changed since the merit pay system was implemented?
B. How has your own work production changed?
C. What types of questions did your direct reports ask you about implementing the merit pay system? What were the major issues that had to be worked through?
D. What were the major issues that you and the vice president worked through during the implementation of the merit pay system?

*Confirming/Exploring Questions*
A. Overall, what have been the successes of the merit pay system?
B. What contributed most to that success?
C. Overall, what have been the not so successful aspects of the merit pay system?
D. Again, what do you think contributed to the not so successful aspects?
E. Knowing what you know now, how might we approach the implementation of the merit pay system differently if you had a chance to start over?
F. What are the next steps that you think the University needs to take with regard to the merit pay system?

*General*
    A.  Why do you perceive the merit pay system was put in place?
    B.  Can you talk a little bit about how the merit pay system was implemented within the university and more specifically within your school?

*Legitimacy*
    A.  What are your perceptions regarding the legitimacy (the use) of a merit pay system at The university? How does it fit? Why?
    B.  What are your perceptions about the use of a merit pay system to evaluate employee performance?

*Organizational subsystems*
    A.  What are the differences that you perceive, if any, in the use of a merit pay system to evaluate faculty versus nonfaculty employees?
    B.  What about implementation of the merit pay system, was it implemented differently for faculty vs. nonfaculty?
    C.  If so, what do you perceive contributed to these differences?
    D.  Are there other differences between that faculty and nonfaculty perceptions of the merit pay system?

*Power*
    A.  As Dean, how did you try to influence the implementation of the merit pay system?
    B.  What impact did your influence have on individuals your direct reports? Indirect reports?
    C.  What types of leadership activities were more successful than others in implementing the merit pay system?
    D.  I suspect there were some across your unit that responded well and some that didn't. Why do you think there were these differences?

    <u>Switch to you as an employee</u>
    E.  What is your perception of the vice president-your supervisor- as related to the implementation of the merit pay system?
    F.  How do you perceive that the vice president would use the merit pay system?
    G.  Based on your perceptions, what did the vice president do to facilitate change in your understanding, attitudes and behavior as related to the merit pay system?
    H.  Based on your perceptions, how did the vice president use power to facilitate your adoption and your unit's adoption of the merit pay system?
    I.  How have these perceptions about the vice president and his use of power impacted your perception about the legitimacy of the merit pay system?

*Coupling*
    A.  Based on your perceptions, how would you describe linkages between the merit pay system and the goals of your unit, or the university?

B.  How did you perceive your unit would be impacted if everyone aligned their work production with the criteria of the merit pay system?

C.  How did your perceptions about the linkage between your unit and the merit pay system impact your overall perceptions about the legitimacy of the merit pay system?

*Ambiguity*

A.  What are the inputs and outputs of the College?

B.  At the point you implemented the merit pay system, did you perceive that your units inputs and outputs were easily defined? What about measured?

C.  How did that perception change as you implemented the merit pay system?

D.  How do you think the ambiguity or clarity of these inputs and outputs impacted how you perceived the legitimacy of the merit pay system? What about how others in your unit perceived the legitimacy of the system?

*Willingness to adopt*

A.  What changes in work production/behaviors have changed since the merit pay system was implemented?

B.  How has your own work production changed?

C.  What types of questions did your direct reports ask you about implementing the merit pay system? What were the major issues that had to be worked through?

D.  What were the major issues that you and the vice president worked through during the implementation of the merit pay system?

*Confirming/Exploring Questions*

A.  Overall, what have been the successes of the merit pay system?

B.  What contributed most to that success?

C.  Overall, what have been the not so successful aspects of the merit pay system?

D.  Again, what do you think contributed to the not so successful aspects?

E.  Knowing what you know now, how might we approach the implementation of the merit pay system differently if you had a chance to start over?

F.  What are the next steps that you think the University needs to take with regard to the merit pay system?

*General*
    A. Why do you perceive the merit pay system was put in place?
    B. Can you talk a little bit about your understanding of how the merit pay system was implemented.

*Legitimacy*
    *A.* What are your perceptions regarding the legitimacy of a merit pay system at The university? How does it fit? Why?
    *B.* There are two components of the merit pay system: the evaluation component and the merit component. What are your perceptions about the legitimacy of each component? Are they equally legitimate? Is one more legitimate than the other? Why?

*Years of Service:*
    A. How did senior faculty who had been here 15 or 20 years responded differently to the merit pay system than perhaps junior faculty would only been here three or four or five years? Did you see differences? If so, what were they?
    B. How much more quickly or more slowly did the senior faculty come to conclusions about the system than perhaps the younger faculty?

*Organizational subsystems*
    A. How would your perceptions of the merit pay system change if you were a nonfaculty, a staff member?
    B. What are the difference that you perceive, if any, in the use of a merit pay system to evaluate faculty versus nonfaculty?

*Power*
    A. When we first started implementing the merit pay system, how did you perceive that your supervisor would use the merit pay system?
    B. Is that how it was used?
    C. Based on your perceptions, what has your supervisor done to facilitate the alignment of your attitudes and behaviors with the merit pay system?
    D. Based on your perceptions, how has the supervisor used their power to facilitate changes in your attitudes and behaviors of the merit pay system?
    E. How has your supervisor impacted your perception about the legitimacy of the merit pay system?

*Coupling*
    A. Based on your perceptions, how would you describe the linkage between the merit pay system and the teaching, research and service mission of the university?
    B. How did this linkage between the merit pay system and the mission of the university impact your overall perceptions about the legitimacy of the merit pay system?

*Ambiguity*
    A. At the point we implemented the merit pay system, did you perceive that your units outputs as related to teaching, research and service were easily defined? Did you think that they would be easily measured? What are the differences in measuring the three: teaching, research and service?
    B. How did that perception change as you implemented the merit pay system?
    C. How do you think the ambiguity or clarity of these outputs impacted how you perceived the legitimacy of the merit pay system? What about how others in your unit perceived the legitimacy of the system?

*Willingness to adopt*
    A. How has your own work production changed since the merit system was implemented?
    B. What types of questions did you ask your supervisor as the merit pay system was being implemented? What were some of the major issues that you had to work through?
    C. What changes to your work production are you planning to make in the future?

*Confirming/Exploring Questions*
    A. Overall, what have been the successes of the merit pay system?
    B. What contributed most to that success?
    C. Overall, what have been the not so successful aspects of the merit pay system?
    D. Again, what do you think contributed to the not so successful aspects?
    E. Knowing what you know now, how might we approach the implementation of the merit pay system differently if you had a chance to start over?
    F. What are the next steps that you think the University needs to take with regard to the merit pay system?

*General*
    A. Why do you perceive the merit pay system was put in place?

*Legitimacy*
    A. What are your perceptions regarding the legitimacy (the use) of a merit pay system at The university? How does it fit? Why?
    B. What are your perceptions about the use of a merit pay system to evaluate employee performance?

*Years of service*
    A. How were people's attitudes, opinions and behavior toward the merit pay system impacted by their years of service at the institution?

*Organizational subsystems*
    A. What are the differences that you perceive, if any, in the use of a merit pay system to evaluate faculty versus nonfaculty employees?
    B. What about implementation of the merit pay system, was it implemented differently for faculty vs. nonfaculty?
    C. If so, what do you perceive contributed to these differences?
    D. Are there other differences between that faculty and nonfaculty perceptions of the merit pay system?

*Power*
    A. As Dean, how did you try to influence the implementation of the merit pay system?
    B. What impact did your influence have on your direct reports?
    C. What types of leadership activities were more successful than others in implementing the merit pay system?

Switch to you as an employee
    A. What is your perception of the vice president-your supervisor- as related to the implementation of the merit pay system?
    B. How do you perceive that the vice president would use the merit pay system?
    C. Based on your perceptions, how did the vice president use power to facilitate your adoption and your unit's adoption of the merit pay system?
    D. How have these perceptions about the vice president and his use of power impacted your perception about the legitimacy of the merit pay system?

*Coupling*
    A. Based on your perceptions, how would you describe linkages between the merit pay system and the teaching, research and service mission of the university?
    B. How did you perceive your unit would be impacted if everyone aligned their work production with the criteria of the merit pay system?

C. How did your perceptions about the linkage between your unit and the merit pay system impact your overall perceptions about the legitimacy of the merit pay system?

*Ambiguity*
    A. What are the outputs of the College?
    B. At the point you implemented the merit pay system, did you perceive that your units outputs as related to teaching, research and service were easily defined? What about measured?
    C. How did that perception change as you implemented the merit pay system?
    *D.* How do you think the ambiguity or clarity of these outputs impacted how you perceived the legitimacy of the merit pay system?

*Willingness to adopt*
    A. In general, what changes in work production/behaviors have changed since the merit pay system was implemented?
    B. How has your own work production changed?
    C. What types of questions did your direct reports ask you about implementing the merit pay system? What were the major issues that had to be worked through?
    D. What were the major issues that you and the vice president worked through during the implementation of the merit pay system?

*Confirming/Exploring Questions*
    A. Overall, what have been the successes of the merit pay system?
    B. What contributed most to that success?
    C. Overall, what have been the not so successful aspects of the merit pay system?
    D. Again, what do you think contributed to the not so successful aspects?
    E. Knowing what you know now, how might we approach the implementation of the merit pay system differently if you had a chance to start over?
    F. What are the next steps that you think the University needs to take with regard to the merit pay system?

*Legitimacy*
    A. What are your perceptions regarding the legitimacy of a merit pay system at The university? How does it fit? Why?
    B. What are your perceptions about the use of a merit pay system to evaluate employee performance?

*Organizational subsystems*
    A. How would your perceptions of the merit pay system change if you were a faculty member?
    B. What are the difference that you perceive, if any, in the use of a merit pay system to evaluate faculty versus nonfaculty?

*Power*
    A. What is your perception of your supervisor as related to the implementation of the merit pay system?
    B. When we first started implementing the merit pay system, how did you perceive that your supervisor would use the merit pay system?
    C. Is that how it was used?
    D. Based on your perceptions, what has your supervisor done to facilitate the alignment of your attitudes and behaviors with the merit pay system?
    E. Based on your perceptions, how has the supervisor used his power to facilitate changes in your attitudes and behaviors of the merit pay system?
    F. How has your supervisor impacted your perception about the legitimacy of the merit pay system?

*Coupling*
    A. Based on your perceptions, how would you describe linkages between the merit pay system and the goals of your unit, or the university?
    B. How did you perceive your unit would be impacted if everyone aligned their work production with the criteria of the merit pay system?
    C. How did your perceptions about the linkage between your unit and the merit pay system impact your overall perceptions about the legitimacy of the merit pay system?

*Ambiguity*
    A. What are the outputs of your unit?
    B. How are these measured?
    C. How do you think the ambiguity or clarity of outputs impacted how you perceived the legitimacy of the merit pay system? What about how others in your unit perceived the legitimacy of the system?

*Willingness to adopt*
    A. Have you formed an opinion about the merit pays system?
    B. What has influenced that opinion?

C. How has your own work production changed since the merit system was implemented?
D. What types of questions did you ask your supervisor as the merit pay system was being implemented?
E. What changes to your work production are you planning to make in the future?

*Confirming/Exploring Questions*

A. Overall, what have been the successes of the merit pay system?
B. What contributed most to that success?
C. Overall, what have been the not so successful aspects of the merit pay system?
D. Again, what do you think contributed to the not so successful aspects?
E. Knowing what you know now, how might we approach the implementation of the merit pay system differently if you had a chance to start over?
F. What are the next steps that you think the University needs to take with regard to the merit pay system?

*General*
   A. Why do you perceive the merit pay system was put in place?
   B. Can you talk a little bit about how the merit pay system was implemented within the university and more specifically how it was implemented on the staff side

*Legitimacy*
   A. What are your perceptions regarding the legitimacy (the use) of a merit pay system at The university? How does it fit? Why?
   B. What are your perceptions about the use of a merit pay system to evaluate employee performance?

*Organizational subsystems*
   A. What are the differences that you perceive, if any, in the use of a merit pay system to evaluate faculty versus nonfaculty employees?
   B. What about implementation of the merit pay system, was it implemented differently for faculty vs. nonfaculty?
   C. If so, what do you perceive contributed to these differences?
   D. Are there other differences between that faculty and nonfaculty perceptions of the merit pay system?

*Power*
   A. How did you see the vice presidents trying to influence the implementation of the merit pay system?
   B. What impact do you think that supervisors had on the implementation of the merit pay system?
   C. I suspect there were some staff across campus that responded well and some that didn't. Why do you think there were these differences?
   D. How do you think the influence of supervisors differed from the influence of the vice presidents in terms of the implementation?
   E. How do you think the influence of supervisors differed from the influence of the vice presidents in terms of changing employee performance?

Switch to you as an employee
   A. What is your perception of your supervisor as related to the implementation of the merit pay system?
   B. How do you perceive that your supervisor would use the merit pay system?
   C. Based on your perceptions, what did your supervisor do to facilitate change in your understanding, attitudes or behaviors as related to the merit pay system?
   D. Based on your perceptions, how did the supervisor use power to facilitate your adoption of the merit pay system?
   E. How did your supervisor impact your perception about the legitimacy of the merit pay system?

*Coupling*
   A. Based on your perceptions, how would you describe linkages between the merit pay system and the goals of your unit, or the university?
   B. How did you perceive your unit would be impacted if everyone aligned their work production with the criteria of the merit pay system?
   C. How did your perceptions about the linkage between your unit and the merit pay system impact your overall perceptions about the legitimacy of the merit pay system?

*Ambiguity*
   A. What are the outputs of your unit?
   B. How are those outputs measured?
   C. How do you think the clarity of outputs impacted how you perceived the legitimacy of the merit pay system?

*Willingness to adopt*
   A. Have you formed an opinion about the merit pays system?
   B. What has influenced the development of that opinion?
   C. How has your own work production changed since implementation of the merit pay system?
   D. What types of questions did you ask your supervisor as the merit pay system was being implemented?
   E. What changes to your work production are you planning to make in the future?

*Confirming/Exploring Questions*
   A. Overall, what have been the successes of the merit pay system?
   B. What contributed most to that success?
   C. Overall, what have been the not so successful aspects of the merit pay system?
   D. Again, what do you think contributed to the not so successful aspects?
   E. Knowing what you know now, how might we approach the implementation of the merit pay system differently if you had a chance to start over?
   F. What are the next steps that you think the University needs to take with regard to the merit pay system?

*General*
    A.  Why do you perceive the merit pay system was put in place?
    B.  Can you talk a little bit about how the merit pay system was implemented within the university and more specifically how it was implemented in your unit.

*Legitimacy*
    A.  What are your perceptions regarding the legitimacy (the use) of a merit pay system at The university? How does it fit? Why?
    B.  What are your perceptions about the use of a merit pay system to evaluate employee performance?

*Organizational subsystems*
    A.  What are the differences that you perceive, if any, in the use of a merit pay system to evaluate faculty versus nonfaculty employees?
    B.  What about implementation of the merit pay system, was it implemented differently for faculty vs. nonfaculty?
    C.  If so, what do you perceive contributed to these differences?
    D.  Are there other differences between that faculty and nonfaculty perceptions of the merit pay system?

*Power*
    A.  As Dean, how did you try to influence the implementation of the merit pay system?
    B.  What impact did your influence have on your direct reports?
    C.  What types of leadership activities were more successful than others in implementing the merit pay system?
    D.  How do you perceive that your influence differed from the influence of your department chairs in terms of changing employee performance?

Switch to you as an employee
    A.  What is your perception of the vice president-your supervisor- as related to the implementation of the merit pay system?
    B.  How do you perceive that the vice president would use the merit pay system?
    C.  Based on your perceptions, how did the vice president use power to facilitate your adoption and your unit's adoption of the merit pay system?
    D.  How have these perceptions about the vice president and his use of power impacted your perception about the legitimacy of the merit pay system?

*Coupling*
    A.  Based on your perceptions, how would you describe linkages between the merit pay system and the goals of your unit, or the university?
    B.  How did you perceive your unit would be impacted if everyone aligned their work production with the criteria of the merit pay system?

C. How did your perceptions about the linkage between your unit and the merit pay system impact your overall perceptions about the legitimacy of the merit pay system?

*Ambiguity*
A. What are the outputs of the College?
B. At the point you implemented the merit pay system, did you perceive that your units outputs as related to teaching, research and service were easily defined? What about measured?
C. How did that perception change as you implemented the merit pay system?
D. How do you think the ambiguity or clarity of these outputs impacted how you perceived the legitimacy of the merit pay system?

*Willingness to adopt*
A. Have you formed an opinion about the merit pays system?
B. What has influenced the development of that opinion?
C. How has your own work production changed since implementation of the merit pay system?
D. What types of questions did you ask your supervisor as the merit pay system was being implemented?
E. What changes to your work production are you planning to make in the future?

*Confirming/Exploring Questions*
A. Overall, what have been the successes of the merit pay system?
B. What contributed most to that success?
C. Overall, what have been the not so successful aspects of the merit pay system?
D. Again, what do you think contributed to the not so successful aspects?
E. Knowing what you know now, how might we approach the implementation of the merit pay system differently if you had a chance to start over?
F. What are the next steps that you think the University needs to take with regard to the merit pay system?

*Legitimacy*
    A.  What are your perceptions regarding the legitimacy of a merit pay system at The university? Is it a good fit? Why?
    B.  What are your perceptions about the use of a merit pay system to evaluate your performance? Was it a good fit?

*Organizational subsystems*
    A.  How would your perceptions of the merit pay system change if you were a faculty member?
    B.  What are the differences that you perceive, if any, in the use of a merit pay system to evaluate faculty versus nonfaculty?

*Power*
    A.  What is your perception of your supervisor as related to the implementation of the merit pay system?
    B.  When we first started implementing the merit pay system, how did you perceive that your supervisor would use the merit pay system?
    C.  Is that how it was used?
    D.  Based on your perceptions, what has your supervisor done to facilitate changes in your work to align with the merit pay system?
    E.  Based on your perceptions, how has the supervisor used his power to change your work behavior as related to the merit pay system?
    F.  How has your supervisor impacted your perception about the legitimacy of the merit pay system?

*Coupling*
    A.  Based on your perceptions, how would you describe linkages between the merit pay system and the goals of your unit, or the university?
    B.  How did you perceive your unit would be impacted if everyone aligned their work production with the criteria of the merit pay system?
    C.  How did this linkage impact how you perceived the legitimacy of the merit pay system?

*Ambiguity*
    A.  What are the outputs of your unit?
    B.  How are these measured?
    *C.*  How did the ability to measure these outputs impact how you perceived the legitimacy of the merit pay system?

*Willingness to adopt*
    A.  Have you formed an opinion about the merit pays system?
    B.  What has influenced that opinion?
    C.  How has your own work production changed since the merit system was implemented?

D.  What types of questions did you ask your supervisor as the merit pay system was being implemented?

E.  What changes to your work production are you planning to make in the future?

*Confirming/Exploring Questions*

A.  Overall, what have been the successes of the merit pay system?

B.  What contributed most to that success?

C.  Overall, what have been the not so successful aspects of the merit pay system?

D.  Again, what do you think contributed to the not so successful aspects?

E.  Knowing what you know now, how might we approach the implementation of the merit pay system differently if you had a chance to start over?

F.  What are the next steps that you think the University needs to take with regard to the merit pay system?

*General*
    A.  Why do you perceive the merit pay system was put in place?
    B.  Can you talk a little bit about how the merit pay system was implemented within the university and more specifically within your unit?

*Legitimacy*
    A.  What are your perceptions regarding the legitimacy (the use) of a merit pay system at The university? How does it fit? Why?
    B.  What are your perceptions about the use of a merit pay system to evaluate employee performance?

*Organizational subsystems*
    A.  What are the differences that you perceive, if any, in the use of a merit pay system to evaluate faculty versus nonfaculty employees?
    B.  What are the differences that you perceive, if any, in how the merit pay system was implemented for faculty versus nonfaculty?

*Power*
    A.  As vice president, how did you try to influence the implementation of the merit pay system?
    B.  What impact did your influence have on your direct reports? Indirect reports?
    C.  What types of leadership activities were more successful than others in implementing the merit pay system?
    D.  What types of power did you try to use to influence change in attitudes and behaviors as related to the merit pay system?
    E.  I suspect there were some across your unit that responded well and some that didn't. Why do you think there were these differences?

Switch to you as an employee
    A.  What is your perception of the president-your supervisor- as related to the implementation of the merit pay system?
    B.  How do you perceive that the president would use the merit pay system?
    C.  Based on your perceptions, what has the president done to facilitate change in your understanding, attitudes and behavior as related to the merit pay system?
    D.  Based on your perceptions, how did the president use power to facilitate your adoption and your unit's adoption of the merit pay system?
    E.  How did the president and his use of power impact your perception about the legitimacy of the merit pay system?

*Coupling*
    A.  Based on your perceptions, how would you describe linkages between the merit pay system and your unit?
    B.  How did you perceive your unit would be impacted if everyone aligned their work production with the criteria of the merit pay system?

C. How did the linkage impact your overall perceptions about the legitimacy of the merit pay system?

*Ambiguity*
A. At the point you implemented the merit pay system, did you perceive that your unit's outputs were easily defined?
B. How did that perception change as you implemented the merit pay system?
C. What are the outputs of your unit?
D. How are they measured?
E. How do you think the ambiguity or clarity of these outputs impacted how you perceived the legitimacy of the merit pay system? What about how others in your unit perceived the legitimacy of the system?

*Willingness to adopt*
A. What changes in work production/behaviors have changed since the merit pay system was implemented?
B. What types of questions did your direct reports ask you about implementing the merit pay system? What were the major issues that had to be worked through?
C. What were the major issues did you and the president worked through during the implementation of the merit pay system?

*Confirming/Exploring Questions*
A. Overall, what have been the successes of the merit pay system?
B. Can you perhaps limit that list to the one or two things that contributed most to that success?
C. Overall, what have been the not so successful aspects of the merit pay system?
D. Again, what do you think contributed to the not so successful aspects?
E. Knowing what you know now, how might you approach the implementation of the merit pay system differently if you had a chance to start over?
F. What are the next steps that you think the University needs to take with regard to the merit pay system?

*Legitimacy*
    A.  What are your perceptions regarding the legitimacy of a merit pay system at The university? Is it a good fit? Why?
    B.  What are your perceptions about the use of a merit pay system to evaluate your performance? Was it a good fit?

*Organizational subsystems*
    A.  How would your perceptions of the merit pay system change if you were a faculty member?
    B.  What are the differences that you perceive, if any, in the use of a merit pay system to evaluate faculty versus nonfaculty?

*Power*
    A.  What is your perception of your supervisor as related to the implementation of the merit pay system?
    B.  When we first started implementing the merit pay system, how did you perceive that your supervisor would use the merit pay system?
    C.  Is that how it was used?
    D.  Based on your perceptions, what has your supervisor done to facilitate changes in your work to align with the merit pay system?
    E.  Based on your perceptions, how has the supervisor used his power to change your work behavior as related to the merit pay system?
    F.  How has your supervisor impacted your perception about the legitimacy of the merit pay system?

*Coupling*
    A.  Based on your perceptions, how would you describe linkages between the merit pay system and the goals of your unit, or the university?
    B.  How did you perceive your unit would be impacted if everyone aligned their work production with the criteria of the merit pay system?
    C.  How did this linkage impact how you perceived the legitimacy of the merit pay system?

*Ambiguity*
    A.  What are the outputs of your unit?
    B.  How are these measured?
    *C.*  How did the ability to measure these outputs impact how you perceived the legitimacy of the merit pay system?

*Willingness to adopt*
    A.  Have you formed an opinion about the merit pays system?
    B.  What has influenced that opinion?
    C.  How has your own work production changed since the merit system was implemented?

D. What types of questions did you ask your supervisor as the merit pay system was being implemented?

E. What changes to your work production are you planning to make in the future?

*Confirming/Exploring Questions*

A. Overall, what have been the successes of the merit pay system?

B. What contributed most to that success?

C. Overall, what have been the not so successful aspects of the merit pay system?

D. Again, what do you think contributed to the not so successful aspects?

E. Knowing what you know now, how might we approach the implementation of the merit pay system differently if you had a chance to start over?

F. What are the next steps that you think the University needs to take with regard to the merit pay system?

*General*
    A. Why do you perceive the merit pay system was put in place?
    B. Can you talk a little bit about how the merit pay system was implemented within the university and how it was implemented for faculty?

*Legitimacy*
    A. What are your perceptions regarding the legitimacy (the use) of a merit pay system at The university? How does it fit? Why?
    *B.* There are two aspects of the merit pay system: the evaluation component and the merit component. What are your perceptions about the legitimacy of each component? Are they equally legitimate, one more legitimate than the other? Why?

*Organizational subsystems*
    A. What are the differences that you perceive, if any, in the use of a merit pay system to evaluate faculty versus nonfaculty employees?
    B. What are the differences that you perceive, if any, in how the merit pay system was implemented for faculty versus nonfaculty?

*Power*
    A. How did the president try to influence the implementation of the merit pay system?
    B. What types of leadership activities of the president were more successful than others in implementing the merit pay system?
    C. What types of power did the president try to use to influence change in attitudes and behaviors as related to the merit pay system?
    D. What was the overall impact of the president's influence, activities and use of power on the faculty senate? On the implementation in general?
    E. How did the president and his use of power impact perceptions about the legitimacy of the merit pay system?
    F. How did the vice president try to influence the implementation of the merit pay system?
    G. What types of leadership activities of the vice president's were more successful than others in implementing the merit pay system?
    H. What types of power did the VP try to use to influence change in attitudes and behaviors as related to the implementation of the merit pay system?
    I. How did the vice president and his use of power impact perceptions about the legitimacy of the merit pay system?

Switch to you as an employee
    J. What is your perception of your supervisor as related to the implementation of the merit pay system?
    K. How do you perceive that your supervisor would use the merit pay system?

L. Based on your perceptions, what has your supervisor done to facilitate change in your understanding, attitudes and behavior as related to the merit pay system?

M. Based on your perceptions, how did your supervisor use power to facilitate your adoption and your unit's adoption of the merit pay system?

N. How did your supervisor and their use of power impact your perceptions about the legitimacy of the merit pay system?

*Coupling*

A. Based on your perceptions, how would you describe linkages between the merit pay system and the teaching, research and service mission of the university?

B. How did you perceive the university would be impacted if all the faculty aligned their work production with the criteria of the merit pay system?

C. How did this linkage between the merit pay system and the mission of the university impact your overall perceptions about the legitimacy of the merit pay system?

*Ambiguity*

A. At the point we implemented the merit pay system, did you perceive that your units outputs as related to teaching, research and service were easily defined? Did you think that they would be easily measured?

B. How did that perception change as you implemented the merit pay system?

C. What are the outputs of your unit?

D. How are they measured?

E. How do you think the ambiguity or clarity of these outputs impacted how you perceived the legitimacy of the merit pay system? What about how others in your unit perceived the legitimacy of the system?

*Willingness to adopt*

A. What changes in your work production/behaviors have changed since the merit pay system was implemented?

B. What types of questions did you ask your supervisor when we first started implementing the merit pay system? What were the major issues that had to be worked through?

C. What were the major issues did the faculty senate have to work through during the implementation of the merit pay system?

*Confirming/Exploring Questions*

A. Overall, what have been the successes of the merit pay system?

B. Can you perhaps limit that list to the one or two things that contributed most to that success?

C. Overall, what have been the not so successful aspects of the merit pay system?

D. Again, what do you think contributed to the not so successful aspects?

E. Knowing what you know now, how might you approach the implementation of the merit pay system differently if you had a chance to start over?

F. What are the next steps that you think the University needs to take with regard to the merit pay system?

*General*
    A. Why do you perceive the merit pay system was put in place?
    B. Can you talk a little bit about how the merit pay system was implemented within the university and how it was implemented within the Academic Affairs unit?

*Legitimacy*
    A. What are your perceptions regarding the legitimacy (the use) of a merit pay system at The university? How does it fit? Why?
    *B.* There are two components of the merit pay system: the evaluation component and the merit component. What are your perceptions about the legitimacy of each component? Are they equally legitimate? Is one more legitimate than the other? Why?

*Organizational subsystems*
    A. What are the differences that you perceive, if any, in the use of a merit pay system to evaluate faculty versus nonfaculty employees?
    B. What are the differences that you perceive, if any, in how the merit pay system was implemented for faculty versus nonfaculty?

*Years of Service:*
    A. How did senior faculty who had been here 15 or 20 years responded differently to the merit pay system than perhaps junior faculty would only been here three or four or five years? Did you see differences? If so, what were they?
    B. How much more quickly or more slowly did the senior faculty come to conclusions about the system than perhaps the younger faculty?

*Power*
    A. As vice president, how did you try to influence the implementation of the merit pay system?
    B. What types of leadership activities did you find to be more successful than others in implementing the merit pay system?
    C. What types of power did you try to use to influence change in attitudes and behaviors as related to the merit pay system?
    D. What impact do you think that your influence, activities and use of power had on the perceived legitimacy of the merit pay system?
    E. I suspect there were some across your unit that responded well and some that didn't. Why do you think there were these differences?

Switch to you as an employee
    A. What is your perception of the president-your supervisor-as related to the implementation of the merit pay system?
    B. How did you perceive that the president would use the merit pay system?
    C. Based on your perceptions, what did the president do to facilitate change in your understanding, attitudes and behavior as related to the merit pay system?

D. Based on your perceptions, how did the president use power to facilitate the adoption of the merit pay system?

E. How did the president and his use of power impact your perception about the legitimacy of the merit pay system? What about how faculty perceived the legitimacy of the merit pay system?

*Coupling*

A. Based on your perceptions, how would you describe the linkage between the merit pay system and the teaching, research and service mission of the university?

B. How did this linkage between the merit pay system and the mission of the university impact your overall perceptions about the legitimacy of the merit pay system? How do you think that it impacted the faculties overall perception about the legitimacy of the merit pay system?

*Ambiguity*

A. At the point we implemented the merit pay system, did you perceive that your units outputs as related to teaching, research and service were easily defined? Did you think that they would be easily measured? What are the differences in measuring the three: teaching, research and service?

B. How did that perception change as you implemented the merit pay system?

C. What are the outputs of the academic affairs unit?

D. How are they measured?

E. How do you think the ambiguity or clarity of these outputs impacted how you perceived the legitimacy of the merit pay system? What about how others in your unit perceived the legitimacy of the system?

*Willingness to adopt*

A. What changes in work production/behaviors have changed since the merit pay system was implemented?

B. What types of questions did your direct reports ask you about implementing the merit pay system? What were the major issues that had to be worked through?

C. What were the major issues did you and the president worked through during the implementation of the merit pay system?

*Confirming/Exploring Questions*

A. Overall, what have been the successes of the merit pay system?

B. Can you perhaps limit that list to the one or two things that contributed most to that success?

C. Overall, what have been the not so successful aspects of the merit pay system?

D. Again, what do you think contributed to the not so successful aspects?

E. Knowing what you know now, how might you approach the implementation of the merit pay system differently if you had a chance to start over?

F. What are the next steps that you think the University needs to take with regard to the merit pay system?

*General*
    A. Why do you perceive the merit pay system was put in place?
    B. Can you talk a little bit about your understanding of how the merit pay system was implemented.

*Legitimacy*
    *A.* What are your perceptions regarding the legitimacy of a merit pay system at The university? How does it fit? Why?
    *B.* There are two components of the merit pay system: the evaluation component and the merit component. What are your perceptions about the legitimacy of each component? Are they equally legitimate? Is one more legitimate than the other? Why?

*Years of Service:*
    A. How did senior faculty who had been here 15 or 20 years responded differently to the merit pay system than perhaps junior faculty would only been here three or four or five years? Did you see differences? If so, what were they?
    B. How much more quickly or more slowly did the senior faculty come to conclusions about the system than perhaps the younger faculty?

*Organizational subsystems*
    A. How would your perceptions of the merit pay system change if you were a nonfaculty, a staff member?
    B. What are the differenced that you perceive, if any, in the use of a merit pay system to evaluate faculty versus nonfaculty?

*Power*
    A. When we first started implementing the merit pay system, how did you perceive that your supervisor would use the merit pay system?
    B. Is that how it was used?
    C. Based on your perceptions, what has your supervisor done to facilitate the alignment of your attitudes and behaviors with the merit pay system?
    D. Based on your perceptions, how has the supervisor used their power to facilitate changes in your attitudes and behaviors of the merit pay system?
    E. How has your supervisor impacted your perception about the legitimacy of the merit pay system?

*Coupling*
    A. Based on your perceptions, how would you describe the linkage between the merit pay system and the teaching, research and service mission of the university?
    B. How did this linkage between the merit pay system and the mission of the university impact your overall perceptions about the legitimacy of the merit pay system?

*Ambiguity*
    A. At the point we implemented the merit pay system, did you perceive that your units outputs as related to teaching, research and service were easily defined? Did you think that they would be easily measured? What are the differences in measuring the three: teaching, research and service?
    B. How did that perception change as you implemented the merit pay system?
    C. How do you think the ambiguity or clarity of these outputs impacted how you perceived the legitimacy of the merit pay system? What about how others in your unit perceived the legitimacy of the system?

*Willingness to adopt*
    A. How has your own work production changed since the merit system was implemented?
    B. What types of questions did you ask your supervisor as the merit pay system was being implemented? What were some of the major issues that you had to work through?
    C. What changes to your work production are you planning to make in the future?

*Confirming/Exploring Questions*
    A. Overall, what have been the successes of the merit pay system?
    B. What contributed most to that success?
    C. Overall, what have been the not so successful aspects of the merit pay system?
    D. Again, what do you think contributed to the not so successful aspects?
    E. Knowing what you know now, how might we approach the implementation of the merit pay system differently if you had a chance to start over?
    F. What are the next steps that you think the University needs to take with regard to the merit pay system?

APPENDIX C: FIELD TEST

SELECTED FACTORS THAT INFLUENCE THE ADOPTION OF MANAGEMENT
INNOVATIONS IN HIGHER EDUCATION

FIELD TEST

*Introduction*

A field test associated with the aforementioned project was conducted during a

ten-day period in January 2009. The field test was conducted at Compass Point

University, a regional university in the Midwest, and included 35 participants. The

purpose of the field test was to: (1) establish content validity of questions contained in

the instruments; (2) to improve the clarity of the questions contained in the instrument;

(3) to assess the appropriateness and practicality of the study; and (4) to anticipate and

resolve any potential problems related to data collection. Accordingly, this paper

provides: (1) a discussion and evaluation related to the clarity questions contained in the

survey and interview; and (2) a discussion and evaluation of the project's sampling and

data collection procedures.

*Survey and Interview Instruments*

Initially, five previous employees at Compass Point University were invited to

participate in the field test. These individuals included two faculty and three staff. Each

individual received a packet that included an introductory letter and review instructions.

The packet also included the survey and interview questions. An additional sheet that

defined the variables of interest was also included. Each participant was asked to

complete the survey and to review the interview questions.

Following the completion of the survey and interview, the researcher contacted

each participant for a debriefing session. In this session, participants were asked to

identify survey or interview questions that were confusing or that appeared irrelevant based on their experiences and also to identify additional questions not asked of them. Participants offered no suggested changes to the questions contained in the interview guide. Responses from the field test participants and discussions with the researcher's dissertation chair led to the following modifications being made to the survey:

- Question 4 was revised to provide instructions to individuals employed less than a year.

- Question 5 was revised to include a category for librarians. Librarians at CPU are considered faculty

- Question 6 was edited for grammar and flow

- Question 7 was edited for grammar and flow

- Question 15 was modified to provide clarification regarding positive or negative opinions

- Question 18 was simplified

- Question 19 was segmented into two questions and simplified

- An option for new employees that have yet to be evaluated was added to Questions 42 and 43

- At the beginning of each major section within the survey, a phrase was added to clarifying that respondents do not have to answer items or questions that are not applicable.

The survey was then distributed to 25 full-time employees at CPU. Of those individuals, 19 completed the survey. A review of responses indicated that these 19 individuals answered 100% of the questions. The high response rate and the absence of

any unanswered items, led the researcher to conclude that no additional survey modifications were warranted.

*Sampling and Data Collection Procedures*

Sampling and data collection techniques were the primary administrative procedures examined as part of this field test.

*Sampling procedures*

A proportional stratified random sampling technique was used to select thirty individuals for participation in the field test. This technique was used to ensure the sample was representative of the population with regard to two strata: (1) participants from the technical subsystem (all faculty-time faculty); and (2) participants from the administrative subsystem (all full-time staff and administrators). The following procedures were used to select participants:

1. A list of all full-time employees was obtained from the human resources office at CPU. The list included employees name, title, and employment date.

2. Employees were classified into the technical or administrative subsystem.

3. The number of full-time employees totaled 430 with 146 employees (34%) representing the technical subsystem and 284 (66%) representing the administrative subsystem.

4. Employees were sorted by employment date and subsystem.

5. Within each subsystem, employees were assigned sequential numbers. The most tenured employee within each subsystem was assigned the number 1 and the most recent employee assigned the last number: 146 for the last

employee within the technical subsystem; and 284 for the last employee within the administrative subsystem.

6. A list of random numbers was then generated using www.random.org.

7. A total of 30 individuals were selected for participation in the field test: 10 (33.3%) individuals from the technical subsystem, and 20 (66.6%) individuals from the administrative subsystem.

*Evaluation of sampling procedures*

In short, the purpose of the sampling technique was to ensure the random selection of participants who were proportionally reflective of the technical and administrative subsystems within the larger population. The identified sampling procedures achieved this purpose and will be used for the full study.

*Data collection procedures*

An anonymous survey was the primary data collection method associated with the field test. The survey was developed using SurveyMonkey and was distributed in an electronic, web-based format via the email system at Compass Point University. The administration of the survey included three contacts with the study's participants. Table 1 provides summary of the distribution method.

*Table 1*. Summary of Proposed Survey Distribution Method

| Contact | Day | Method | Mode |
| --- | --- | --- | --- |
| 1 | 1 | Pre-notice letter | Email |
| 2 | 3 | Survey packet | Email/Web |
| 3 | 10 | Thank-you/reminder | Email |

Table 2 outlines the features included in the development and administration of the survey to enhance completion and return rates.

*Table 2.* Survey Development and Administration Features to Increase Return Rates

| Phase | Feature |
| --- | --- |
| Survey Development | Short entry boxes |
| | Multiple-item screens that group questions tied to the same variable |
| | A graphic indicator on each page demonstrating progress toward completing the survey |
| Survey Administration | Pre-notice letter and email |
| | One thank you/reminder emails |
| | $2 cash incentive distributed with pre-notice letter |
| | A $300 gift certificate awarded to two randomly selected individuals who completed the research survey |

*Data collection procedures discussion and evaluation*

The goal of the data collection procedures was a 50% response rate that yielded a representative sample based on job classification, gender, age, and years of employment. Of the 30 selected for the field test, 19 surveys were completed, or a 63% response rate. However, five of the selected participants did not have email addresses and did not have an opportunity to participate in the survey. In reality, only 25 survey invitations were actually distributed yielding an actual response rate of 76%.

With regard to the representativeness of the sample, Table 3 illustrates that the respondents were very representative of the sample and the larger population.

*Table 3.* Representativeness of Sample and Respondents

| Category | Population | Sample (Pilot) | Respondents (Pilot) |
|---|---|---|---|
| Subsystem | | | |
| Technical | 34% | 33% | 42% |
| Administrative | 66% | 67% | 58% |
| Gender | | | |
| Female | 54% | 43% | 42% |
| Male | 46% | 57% | 58% |
| Age (Mean) | NA | NA | 44 |
| Years of Employment (Mean) | 10 years | 8 years | 10 years |

Initially, it appeared that the respondents were not representative of the sample with regard to the technical and administrative subsystems; however, Table 4 illustrates that the respondents indeed were reflective of the sample when those not receiving the email invitation are excluded.

*Table 4*. Subsystem Representativeness with Revised Sample

| Category | Revised Sample (Pilot) | Respondents (Pilot) |
|---|---|---|
| Subsystem | | |
| Technical | 40% | 42% |
| Administrative | 60% | 58% |

To summarize, data collection strategies exceeded the projected response rate, and respondents were representative of the sample and population. Two data collection processes will be changed for the full study: (1) the invitation and survey will be distributed and collected in a paper format for those individuals that do not have email;

and (2) age will not be used to determine representativeness of the sample due to the unavailability of data for the population.

*Summary*

A field test for this study was conducted with 35 participants. The survey instrument and research procedures were evaluated, and modifications were made based on this feedback. Overall, the sampling and data collection procedures associated with the field test proved appropriate and practical, and the modified items within the survey instrument and interview appeared clear and valid.
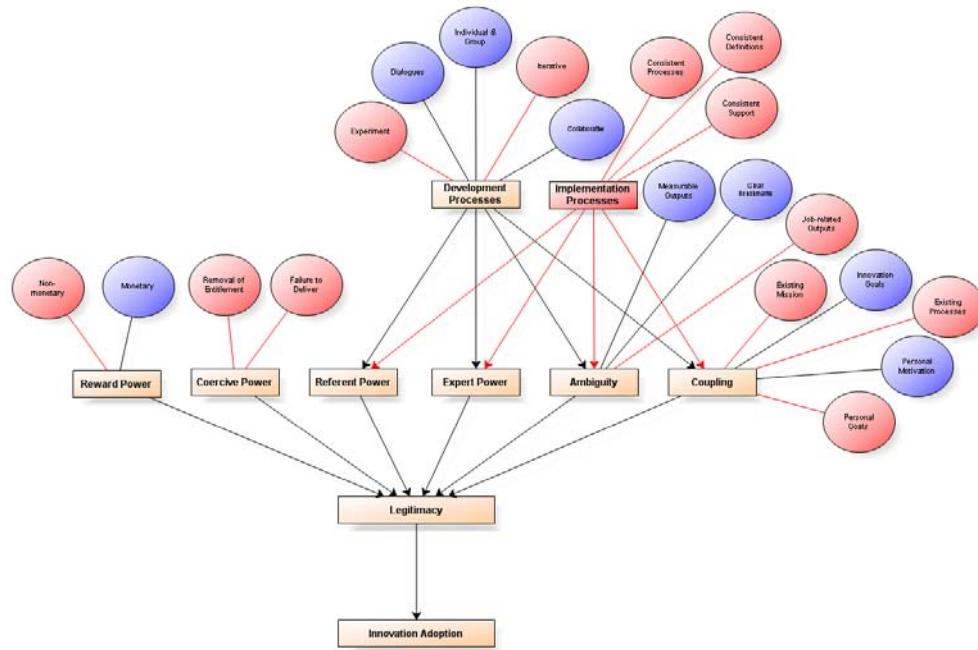
**Interview 1**
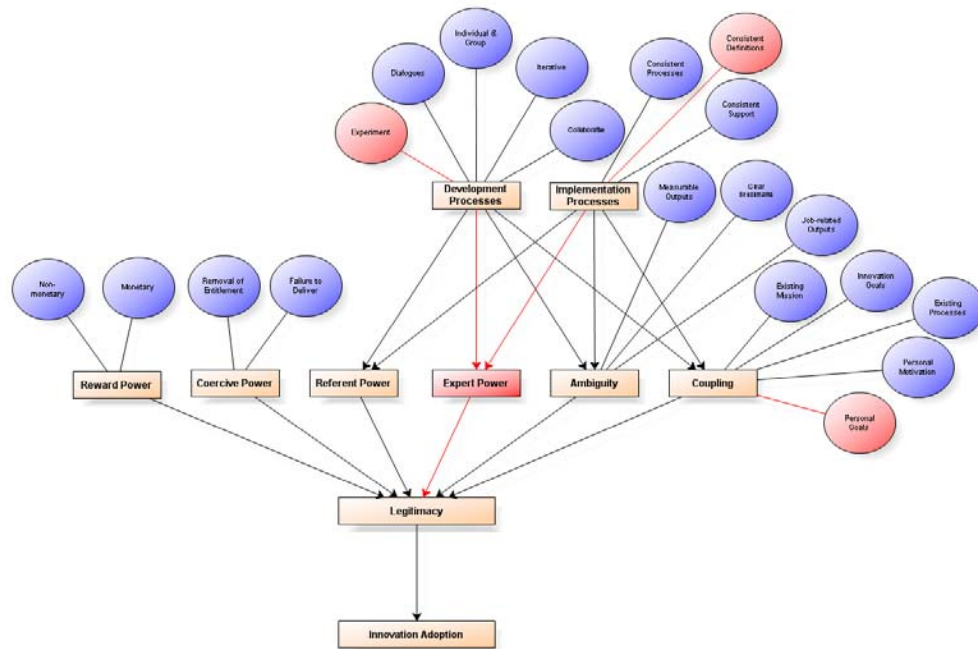


**Interview 2**

# Interview 3
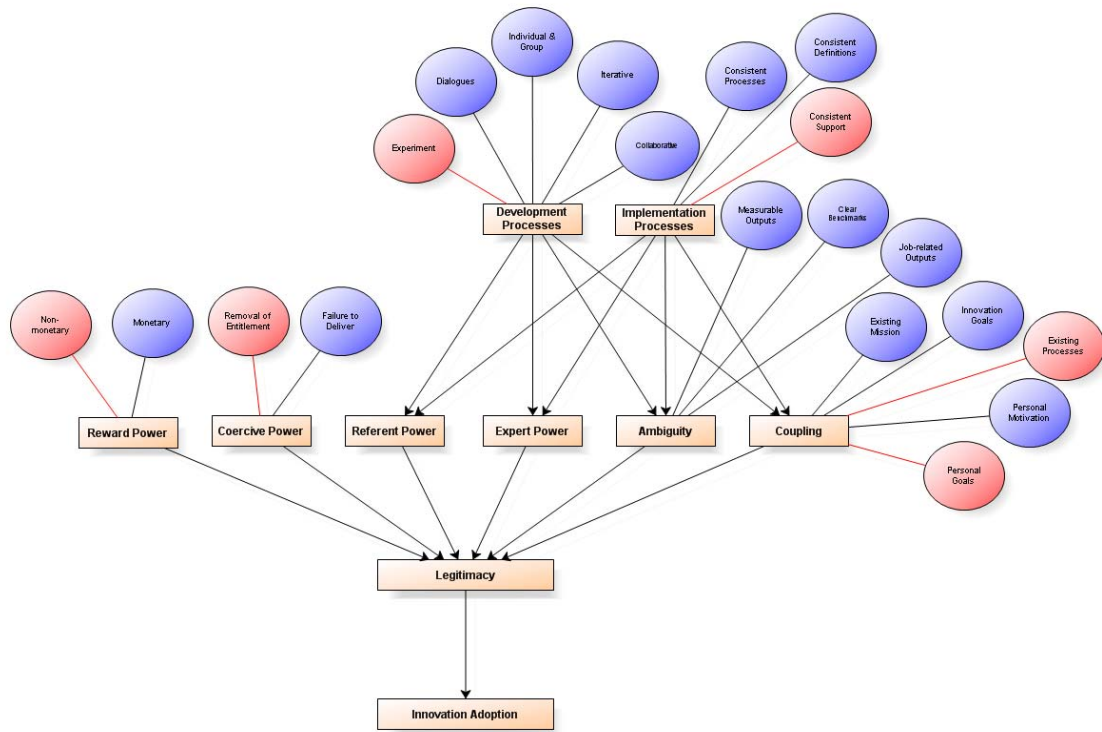


# Interview 4
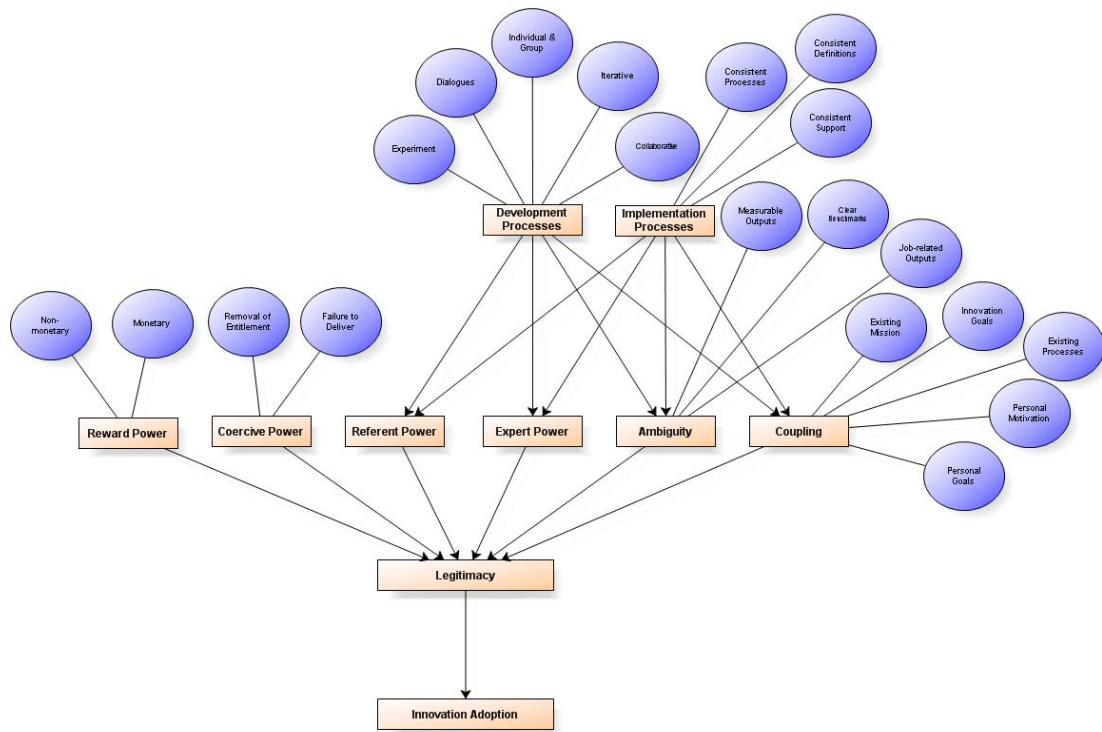
# Interview 5
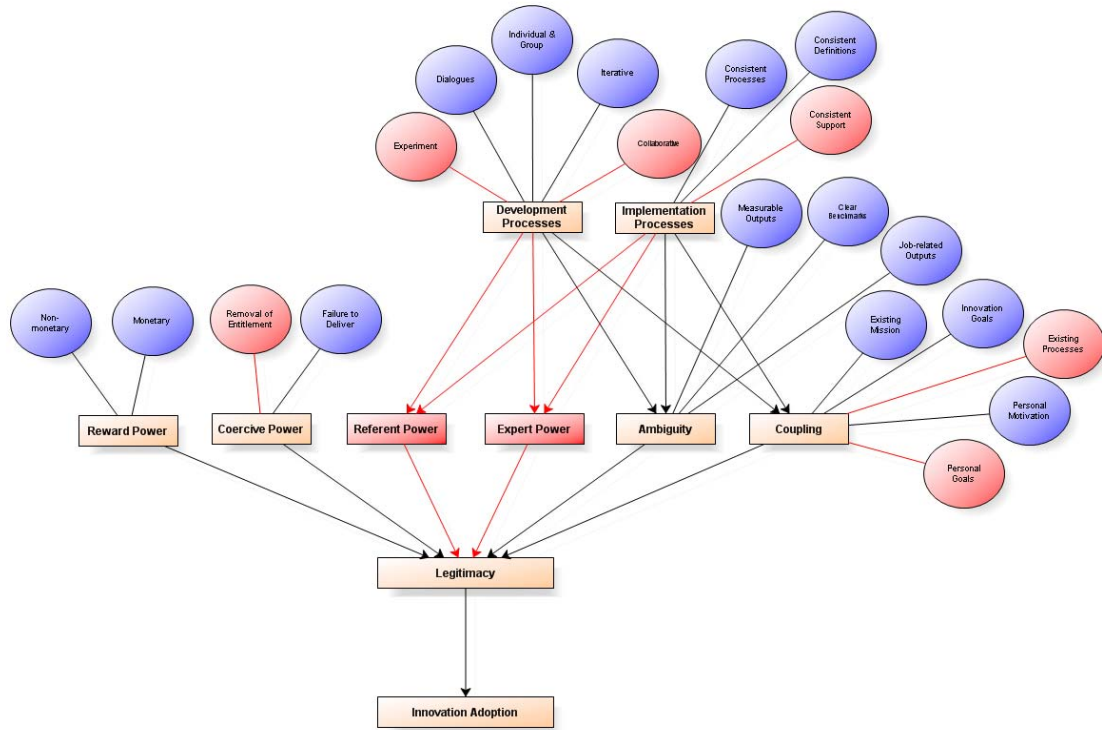


# Interview 6
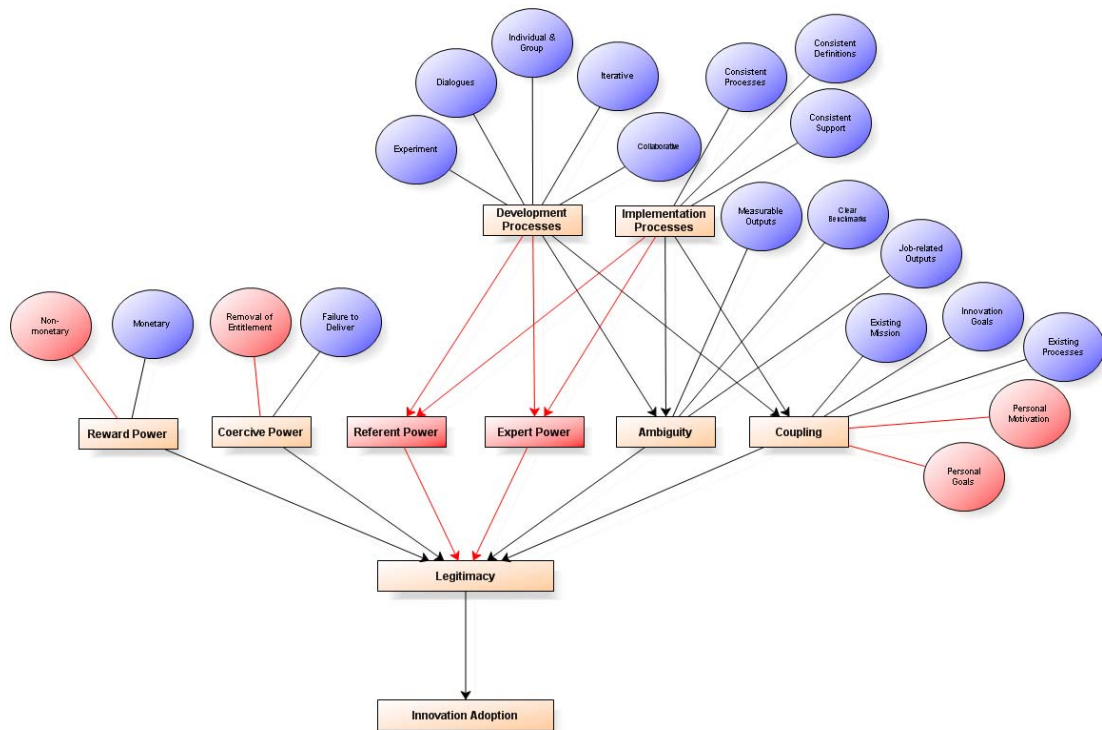
# Interview 7
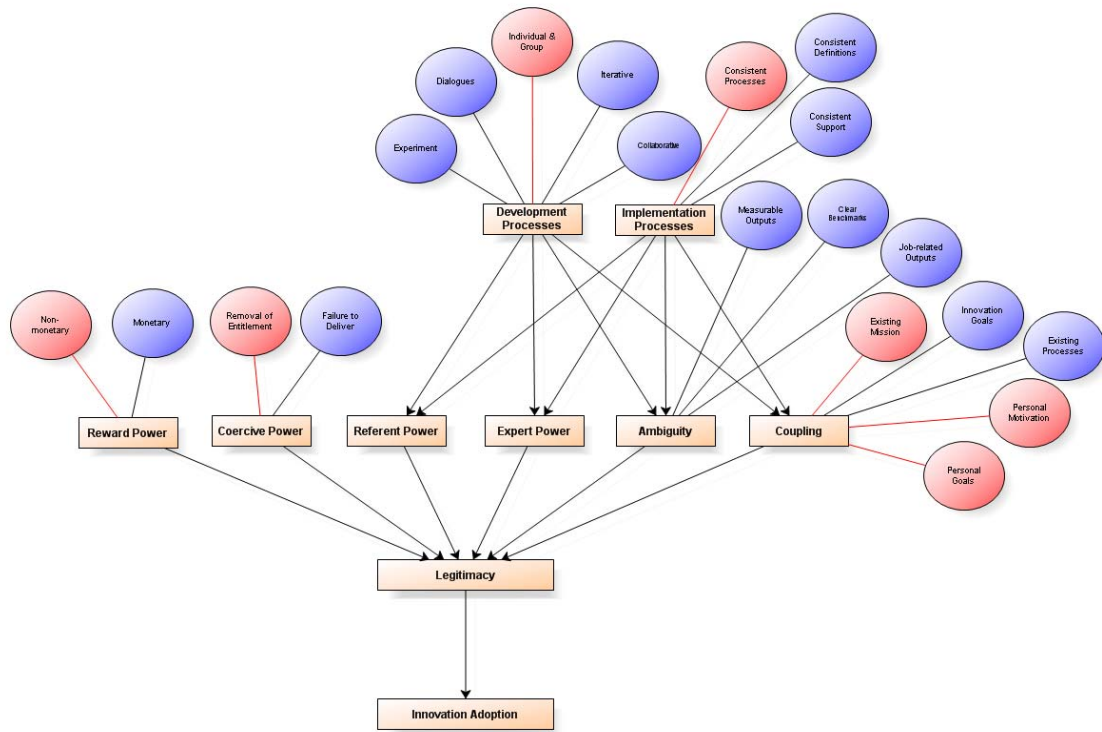


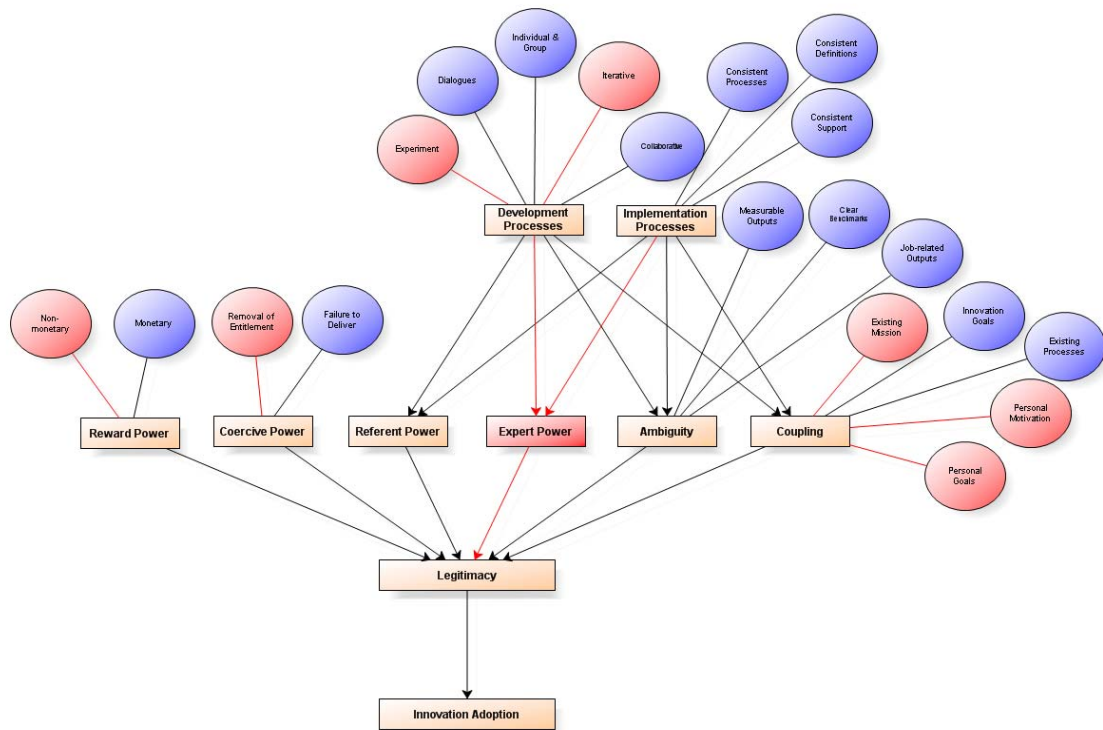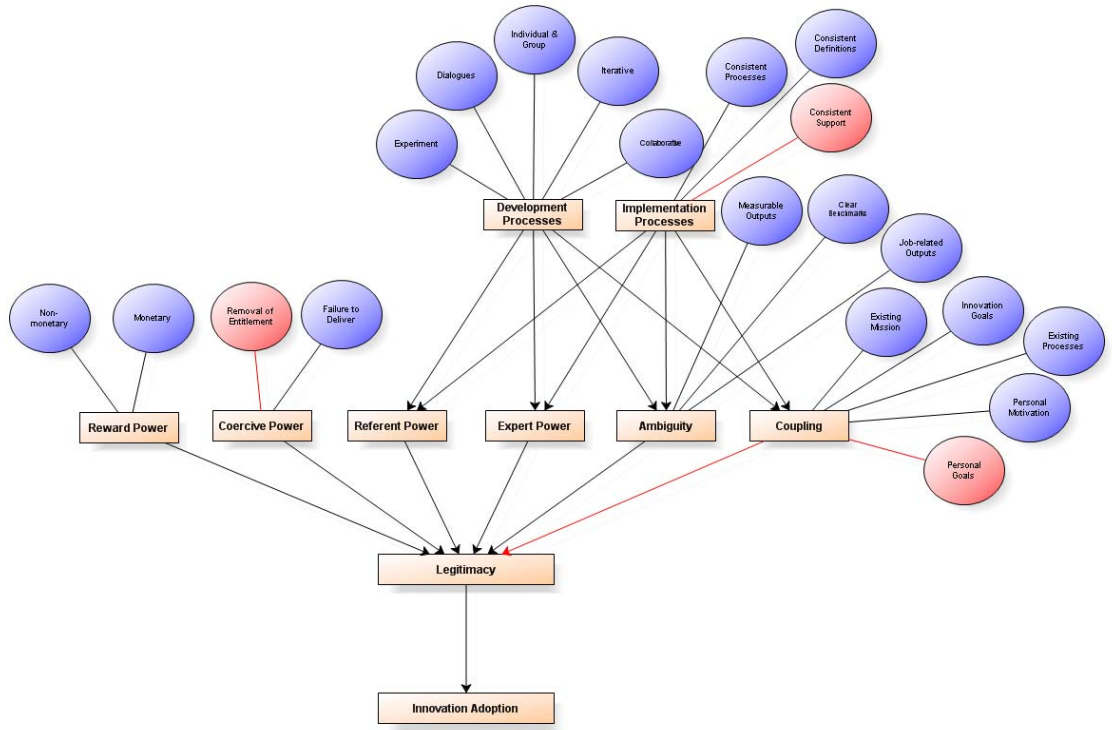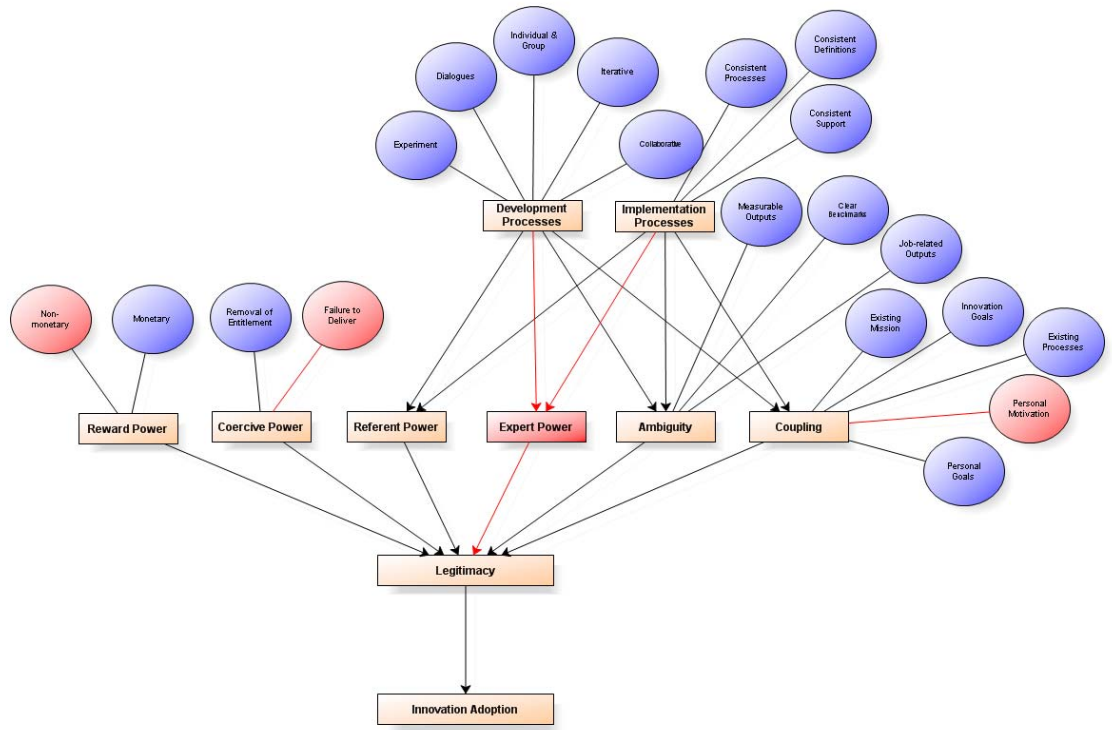# Interview 8
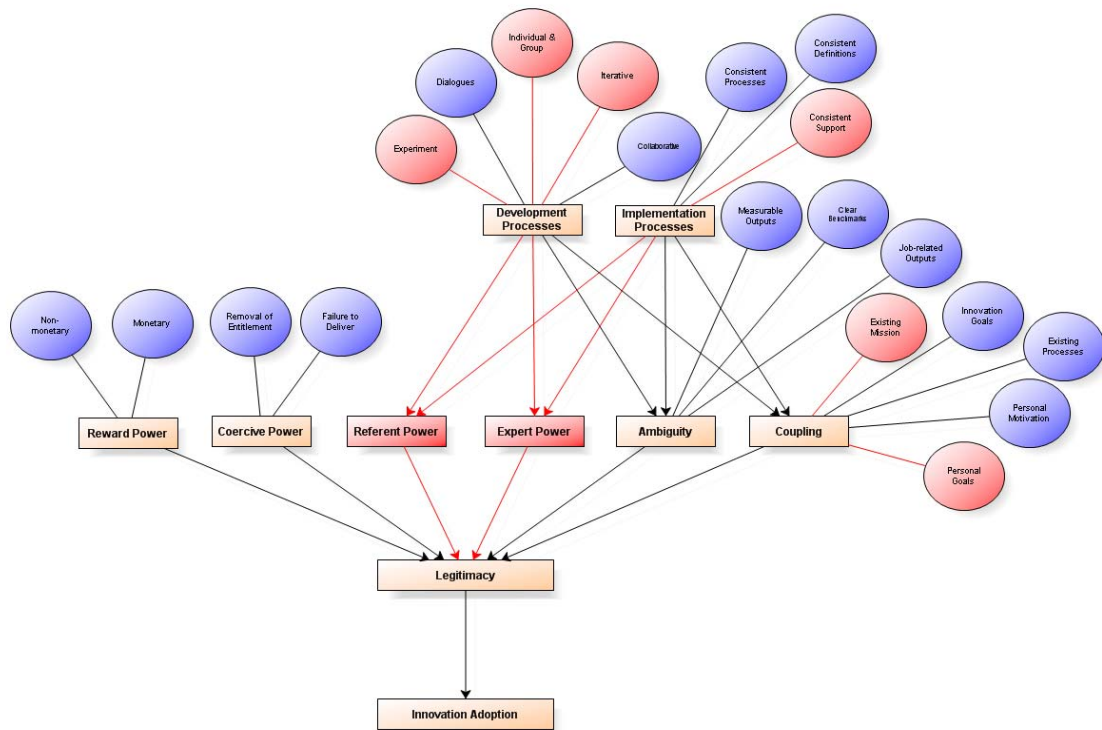
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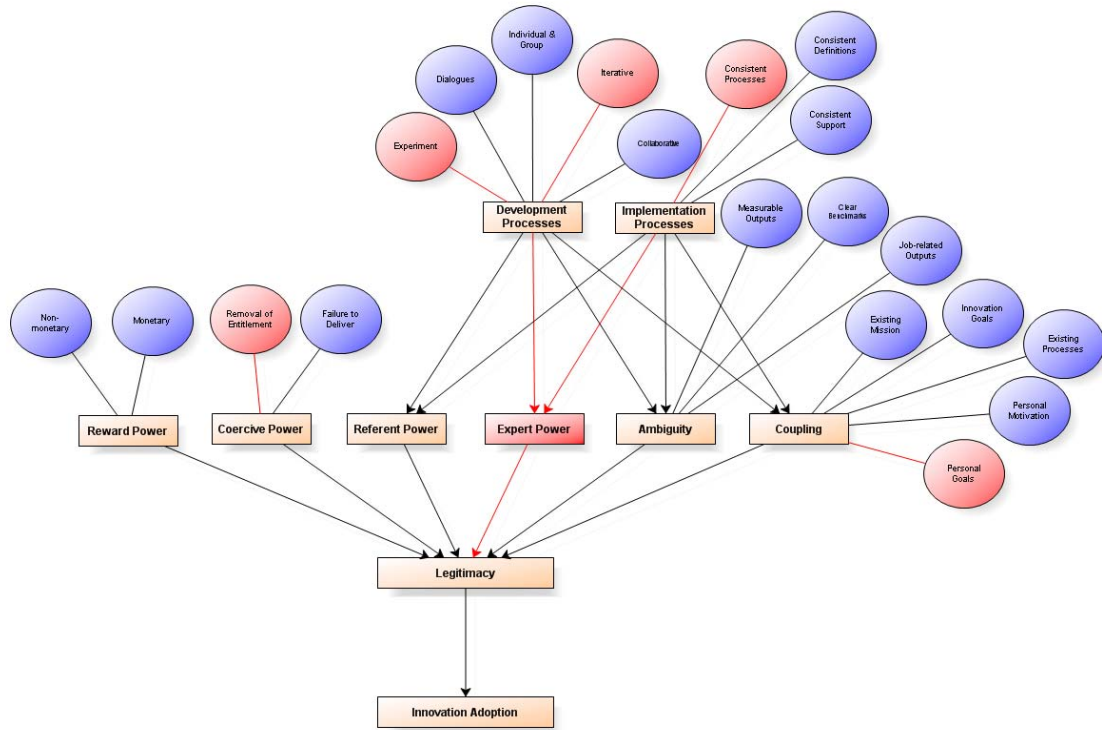


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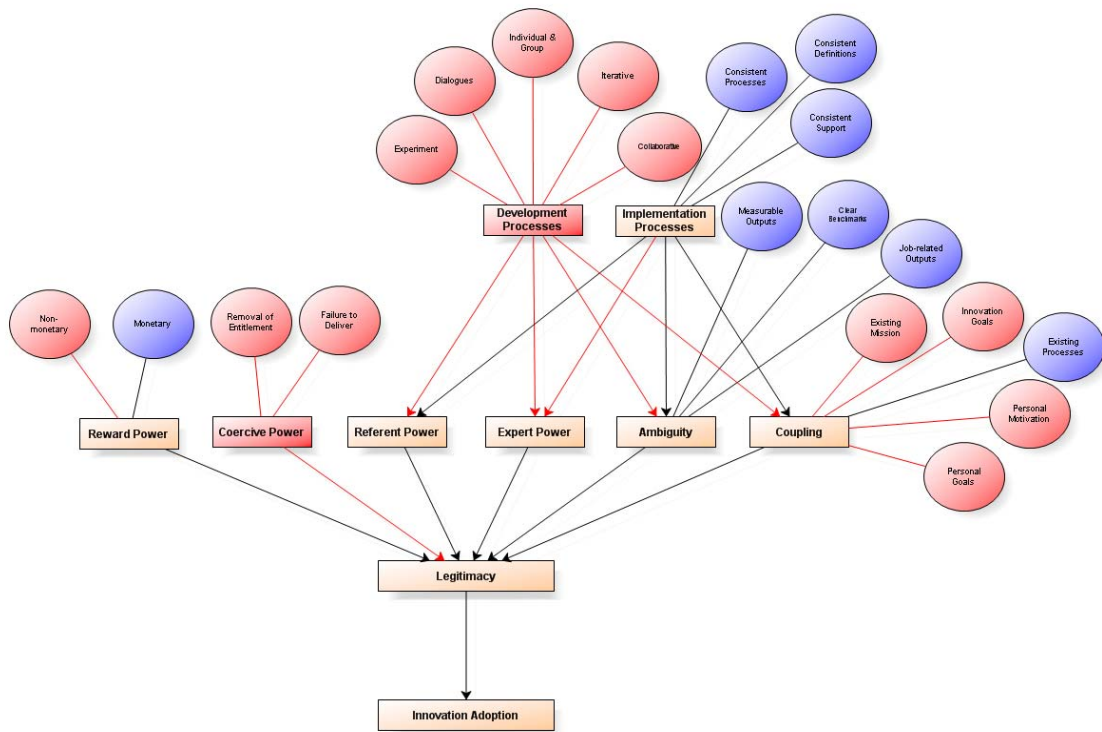
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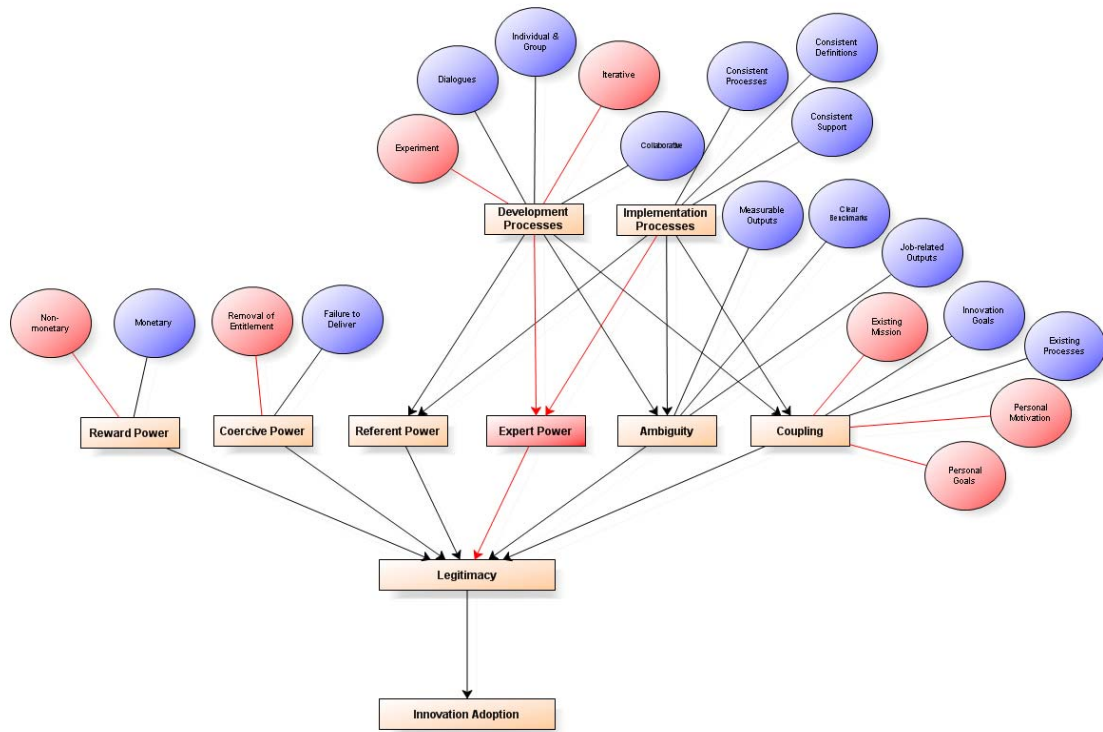


# Interview 12

# Interview 13



# Interview 14

# Interview 15