

AN INVESTIGATION INTO THE FACTORS LEADING TO THE CLOSURE OF 40
PRIVATE FOUR-YEAR COLLEGES BETWEEN 1965 AND 2005

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This study searches for a set of common indicators that contributed to the ultimate closure of 40 colleges and universities between 1965 and 2005. From research on related literature, a set of 31 contributing factors was identified by published experts and observers in higher education. That set of indicators was then used as a list of 31 questions answered by data found in newspaper articles, professional journals, published research work, published institutional records, data taken from the Department of Education, data taken from IPEDS, data published in historical recounts of the colleges of interest, etc.

The data was accumulated in the form of yes/no responses to the 31 questions. Although the study involved only 40 colleges and universities this population represents the majority of institutions that pass the restrictions of limitations and delimitations described in the full document. The complete data set was processed using SPSS which produced ANOVA tables and level of statistical significance for each indicator question.

The results indicate that out of the 31 original indicator questions there were two groups of statistically significant indicators. The larger group of indicators having statistical significance at the .05 level encompassed the smaller group having statistical significance at the .001 level. There were ten indicators in the first group with significance at the .05 level and seven in the second group with significance at the .001

level. Both groups conform to Bowen's revenue theory of cost associated with the operations of colleges and universities. The first group also has a cultural values component observed by a number of the experts cited in this study. The second is very tightly associated with Bowen's revenue theory of cost and Bates and Santerre's for profit theory of economics.

Future research needs to be done to investigate the effect of such use of those indicators and to cause change in their use by educating those entities who are informed by those indicators.

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CHAPTER 1

INTRODUCTION TO THE STUDY

Looking back nearly 50 years reveals that growth in the economy and population in the United States were expected to reach unprecedented levels. The mid 1950s to the early 1970s did prove to be years of unprecedented growth in the United States. Eurich (1965) claimed, “By the year 2000 the population of the United States would exceed 350 million people. Of that number, 25 million would be students in higher education” (p. 40). Allen M. Cartter (1966), vice president of the American Council on Education said, “private institutions could easily charge one-third to one-half more than their current prices” (p. 17). Hammond (1984), in his research on the sixties and seventies observed that with projections of great population growth “institutions of higher education prepared by taking on long-term debt for new buildings, faculty numbers grew and so did their salaries” (p. 364).

In fact enrollment in 2005 was at 17.5 million for degree granting institutions (NCES fast facts, 1). The predictions from the 1960s were too high by nearly one-third. In the late 1960s the economy slowed down and inflation took hold. By the mid 1970s the infrastructure built to serve multitudes of students was not being used enough to pay the budget deficits (Hammond, 367). Kaufman (1975) made the assertion that:

Probably the chief reason for the demise of organizations is change in their internal or external environments that renders ineffective their established processes of self-maintenance. Most organizations, to be sure, are capable of

modifying those processes to some extent and are thus able to survive changes of modest proportions. But this capability is always circumscribed; organizational flexibility is sharply limited...Organizations often persist in courses of action that were previously beneficial even when new conditions necessitate new patterns of behavior...The norm is inflexibility of behavior. (p. 139-140)

The mid 1970s brought a number of economic changes. A Carnegie Foundation publication (1976) stated:

Higher Education in the United States has grown throughout most of its 340 years. Now it faces a quarter century of little growth or no growth in enrollments for the first time in history. In 2 decades, 1870 to 1880 and again in 1960 to 1970, enrollments have doubled and also the greatest advances have been made. (p. 5)

Expert observers in the field had begun to debate the issues surrounding the ability of institutions of higher education to survive such changes. Richard M. Cyert (1978), president of Carnegie-Mellon University, responded to the Carnegie publication by saying:

Since the students of the 1980's were born in the 1960's, there is little uncertainty connected with such predictions. The percentage of high school graduates going on to higher education might increase enough to compensate for the smaller number of graduates, but there is no reason to expect that kind of change. (p. 344)

Cyert was one of the first to analyze the problem of managing higher education institutions that are of constant or declining size. He (Cyert, 1978) became convinced

that the problem was that the exact mix of services had not been formulated for those institutions and he concluded, “Some institutions will disappear because there are no services or mix of services that can win support. A good strategic analysis should uncover such a situation and allow the organization to close its doors in an orderly and dignified manner” (p. 348). However, he did not analyze the “mix of services” to determine whether or not there was some common set of conditions that would be early predictors for those institutions that would eventually hope to close their doors “with dignity.”

Clark Kerr was an iconic figure representing collaboration on all levels as a means to further higher education and as such he was the founder of the California System. Clark Kerr (1976), the Chairperson for the Carnegie Council on Policy Studies in Higher Education, wrote in a supplement to the original Carnegie Foundation publication, regarding his projections into the 1980’s:

Several major problems lay ahead: (1) of how to maintain dynamism without growth, (2) of how to avoid parochialism as the states become a greater source of funds and policy, (3) of how to support the private sector while maintaining its independence, (4) of how to get accountability by higher education without stifling it with detailed regulation, and (5) of how to balance the public interest against the need for institutional autonomy in academic areas of decision making.

(p. 7)

And Cyert (1978) concluded that:

The study of contracting or constant size organizations has received relatively little attention in the management or organizational literature. Growth and expansion have tended to be the objectives of most organizations and the criteria by which the success has been judged. It is clear, however, that in education we must be concerned with the management of organizations that are not growing. (p. 348-349)

That concern must be there because of the numbers of colleges that close each year in the United States. Work done by Bates and Santerre (2000) indicates that there are about 6 private 4-year colleges going defunct per year. The *Digest of Education Statistics* (2001) indicates that about 7 private 4-year colleges and universities go defunct per year on average. The *Digest of Education Statistics* report covers the years between 1960 and 2005 (p. 292), which is approximately the window of this study.

The 1980s began with predictions and expectations of noted experts in the field that there would be little or no growth for 2 decades. They also agreed that predictions from the past were not reliable. Fundamental to this study they also agree that too little research had been conducted regarding how institutions could survive extended periods of no growth let alone long periods of gradual downturn. When Moore (1987) looked back on the 1980s he wrote:

In the 1980's for the first time in American history, less than 30% of the population will be under twenty years old...The number of high school graduates will decline from 3 million in 1980 to 2.4 million in 1990...Meanwhile, the 70

million...Baby Boom generation is reaching middle age, creating a tremendous demand for retraining and continuing education. (p. 61)

Gueverra (2001) conducted research on the same period and concluded:

Moore, like many other writers accurately predicted the decline of undergraduate enrollment in the 1980's. Currently, many colleges show a return to "normalcy" after the lean years, but some institutions are still very much in danger. (p. 351-352)

Gueverra (2001) disagreed with Cyert, Clark, Moore and others when he concluded that the problem is one of maintaining enrollment:

When the pool of available students is shrinking or has shrunk, the additional costs borne by every institution, through marketing, do not significantly change their relative market position and enrollment. These additional costs may result in depleted institutional resources. Consequently, institutions unable to reverse the decline or find new revenue sources will experience financial instability. (p. 354)

Enrollment was not one of the features of the "correct mix" mentioned by Cyert and it was not one of the five decision points identified by Clark Kerr.

Cameron (1983) attempted a different approach to the problem of dealing with decline. He developed a typology of decline that relied on the type of decline (either continuous or discontinuous) and the size of the institutional "niche" (either changing in size or shape). The result was a table with 4 boxes each containing the related predicted conditions. He observed:

The usefulness of identifying a typology of decline is that it can help managers select appropriate responses when their organizations face reductions in resource availability or output acceptance. No single strategy is appropriate for each of the four conditions. Rather, the four types of decline require different managerial approaches if successful outcomes are to be achieved. (p. 365)

Martin and Samels (2009) conducted the most recent study into the possibility of identifying a set of indicators of institutional vulnerability to failure and closing. In their study they interviewed Dennis P. Jones, president of NCHEMS and asked him if there had been progress in the “national conversation” regarding the identification of such a set of indicators. Jones replied:

I guess the overall lesson learned would be that we are no closer now, in 2006, to having a set of indicators people pay attention to than we were 20 years ago. However, among those indicators of stress to consider now, I would pay most attention to those that speak to the extent to which an institution is depreciating its assets, such as deferred maintenance or the technology budget. Pay attention to building and technology. (p. 9)

These examples of ongoing “national discussion” covering decades raises the question of whether or not it could be possible to identify key components of 4-year colleges that contribute to success and failure and from those components, begin to describe a set or sets of conditions that indicate impending failure. This question is the subject of this research project.

Statement of the Problem

There is no solid research on the elemental conditions of a population of higher education institutions that uncovers the relative importance, a hierarchy in other words, of those elemental conditions or indicators of institutional health. There is no evidence that any of the 3 or 4 basic approaches to managing exigent conditions will lead to the formulation of the exact mix of services for a given institution to survive. The gap in research where the descriptions of those indicators of vulnerability should be is the problem addressed by this study.

Purpose of the Study

Therefore, the purpose of this study is to examine a portion of the population of higher education institutions that have been forced to close during the past 40 years, catalog their elemental conditions, and perform a statistical analysis of those conditions. Statistical analysis will determine the importance of those conditions and the meaning of combinations of those conditions in order to identify predictors of being forced to close.

Theory Base of the Study

The theory base of this study rests firmly upon the revenue theory of cost that Bowen elaborates in *The Costs of Higher Education* (1980). More explicitly that theory stated in Bowen's words is:

From the revenue theory of costs, it is possible to deduce a set of closely interrelated "laws" pertaining to unit costs in colleges and universities. These laws describe the incentives and the behavior of higher educational institutions as they conduct their activities from year to year.

A basic assumption underlying these laws is that the size, type, and mission of each institution is given—having been determined by the unique events of its history. Institutions, of course, change—sometimes drastically. Yet in a short span of years, the great majority settle into a pattern. Their mission and their enrollment are well established.

Given this assumption, certain laws of higher educational costs may be derived. (Bowen, 1970)

1. The dominant goals of institutions are educational excellence, prestige, and influence. The “excellence” or “quality” of institutions are commonly judged by such criteria as faculty-student ratios, faculty salaries, number of Ph.D.s on the faculty, number of books in the library, range of facilities and equipment, and academic qualifications of students. These criteria are resource inputs most of which cost money, not outcomes flowing from the educational process. The true outcomes in the form of learning and personal development of students are on the whole unexamined and only vaguely discerned.
2. In quest of excellence, prestige, and influence, there is virtually no limit to the amount of money an institution could spend for seemingly fruitful educational ends. Whatever level of expenditure is attained is seldom considered enough. Institutions tend, therefore, to spend up to the very limit of their means. As a result, the financial problems of rich institutions are about as severe as those of all but the most impoverished institutions. This is especially so because

whatever expenditures are once admitted into the budget become long-term commitments from which it is difficult ever to withdraw.

3. Each institution raises all the money it can. No college or university ever admits to having enough money and all try to increase their resources without limit.
4. Each institution spends all it raises. Many institutions, however, accumulate reserves and endowments. These “savings” are derived primarily from gifts designated for endowment and not from voluntary allocations of current income. In most institutions, the accumulations are of negligible amount. The few institutions that become very affluent, however, are able to save substantial amounts and accumulate significant endowments.
5. The cumulative effect of the 4 preceding laws is toward ever increasing expenditure. The incentives inherent in the goals of excellence, prestige, and influence are not counteracted within the higher educational system by incentives leading to parsimony or efficiency. The question of what *ought* higher education to cost—what is the minimal amount needed to provide services of acceptable quality—does not enter the process except as it is imposed from the outside. The higher educational system itself provides no guidance of a kind that weighs costs and benefits in terms of the public interest. The duty of setting limits thus falls, by default, upon those who provided the money, mostly legislators and students and their families. (pp. 19-20)

Research Questions

The object of this study will be to attempt to answer the following questions and to identify other questions that may be answered by this study or that should be addressed by future research:

- (1) How many U.S. colleges have closed in the past 40 years?
- (2) What were the published reasons for their closures?
- (3) Are there commonalities as to reasons for closure of the studied institutions?
- (4) Are there identifiable characteristics or combinations of those characteristics that are predictive of risk for subsequent closure of colleges in the next few decades?

Significance of this Study

Over the last 50 years higher education has been seeking a methodology for management that would provide the tools for avoiding catastrophic failure ending in the closing of institutions. A number of methodologies have been developed and implemented as the fix for whatever it has been that causes colleges to close. The overall view is that in the world of highly educated people this sort of thing simply should not happen. The question arises as to how did the administrators, the board of directors, the faculty, the community, the students, the state, all manage to “allow” a college to go out of service?

The intended significance of this study is to attempt to discover through analysis of the real elements of institutional makeup which specific factors correlate most strongly to, or that best indicate the collapse and demise of colleges.

This study provides correlation measures that identify the most probable elements of success or failure. It also identifies a population of example cases which others may be able to use to compare with their institution. That comparison and the correlation of importance to elemental characteristics provide a pointer to identify and isolate conditions within an institution and possibly deal with improving specific elements for specific reasons.

This study also provides a lead for future researchers who wish to attempt more detailed studies of this sort. One contribution of this study was to assemble a collection of 40 example cases with as many of the actual conditions of the critical elements as is possible with the limitations imposed on this research. This study is at least a starting point for bigger projects in the future and may eventually yield a master methodology for future administrators to maximize the security, stability and longevity of their institutions.

Definitions of Terms

Approved strategic plan -- Strategic plan that has been completed according to standard guidelines, accepted and understood by the majority of participants, made publicly available to the surrounding community for their criticism and acceptance, made completely available to the board of trustees and the accreditation council and approved by all of those mentioned.

Coverage – The ratio of net operating income to debt service. If this ratio is > 1.00 then for each dollar of debt the institution is generating more than a dollar of income.

If this ratio is less than 1.00 then there is an operating income shortfall that must be corrected by finding new sources of permanent capital income.

Debt burden – This is the ratio of debt service to total expenses. This is expressed as (debt service)/(total expenses). This ratio should decrease as interest-bearing debt is paid off relative to a percentage of total expenses in a healthy institution.

Debt service -- This is essentially the total annual expenditure on interest paid on total debt.

Failure or failed -- This is the condition of having become defunct. For this study the concept of failure does not require that an institution had to close its doors to be included as a data set.

FTE -- This term is used in the higher education industry to represent the number of full time students that could be represented by the total number of hours enrolled for. The number is determined by dividing the total number of registered course hours by the basic full time requirement. For example; if a college calculates that they have enrollment in a total of 12,000 credit hours. To compute their FTE they will divide 12,000 by the basic full time requirement (typically 12 hours). Example: 12,000 credit hours total/12 credit hours for full time student = 1,000 full time students equivalently.

FTF -- For this study this term will represent the number of full time faculty.

Net assets -- Total assets minus total liabilities.

Primary assets -- This is the grand total of all assets whether they are paid for or not.

Primary reserve – This is the ratio of an institution’s net assets to its total expenses. This is expressed as (net assets)/(total expenses) and should increase as net assets grow in relation to total expenses in a healthy institution.

PTF -- For this study this term will represent the number of part time faculty.

Viability -- The ratio of primary assets to total debt. This is expressed as (primary assets)/(total debt). This ratio should increase over time in a healthy institution as debt is paid down while primary assets are accumulated.

Limitations and Delimitations

Time was a limiting factor in this study. Another limitation was the inability to generate a complete data set for each and every closed college that is ascertained to be free from bias. The work was also limited by the fact that in many cases records have simply been disposed of or destroyed and research relies on public notices and reports in newspapers where actual official accounts would be preferred for the study. It was quite difficult in some cases to determine if a college is actually closed or not and that condition became a specific limiting factor. This situation arose especially in the case of the rabbinical colleges and universities because of their very nature and manner of operating. They may have a zero enrollment for a year or 2 and so not report enrollment or tuition rates, only to appear in the data bases again the next year. For that reason, as a delimiting factor, they were not included. Another limitation was the inability to accurately compare “continental institutions” to “island institutions” such as colleges in Puerto Rico, Guam, or the Antilles to colleges in Texas. That limitation leads to the delimiting factor of having not included those institutions in this study.

The obvious delimitation is the scale of the study imposed by the virtual impossibility of one researcher accomplishing the accumulation of a substantial population of complete examples. In a test study while preparing for this study it was discovered that it could take 2 days to uncover a reasonable number of variables for a single case. For a population of 50 cases it could take a minimum of 100 days of intense research to only accumulate the data sets. This delimitation then affected the size of the population to be studied and the number of data elements included in each data set. In order to manage the accumulation of data sets in a reasonable time period the scope of the study had to be held to as recent a time period as possible while also generating the needed number of example data sets. The desire to do some regression analysis of the accumulated data implied the need for a population of at least forty and the accumulation of data stopped when that number was achieved. The ultimate desire was to accumulate the base population size while keeping the window of time limited to the last fifty years and while keeping the sources as modern as possible. This simply meant that if the data could have been accumulated from records covering the last twenty or thirty years then the collection would have stopped at that point.

Organization of the Study

This study is organized into 5 chapters. The first chapter, Introduction, includes the purpose of the study, statement of the problem, 4 research questions, significance of the study, definitions of terms and the limitations of the study and delimitations imposed on the study by its design and by outside forces beyond the control of the researcher.

Chapter 2 is the Review of the Related Literature and includes such features as references to work done by others that is related to this topic in some way such as books on how to close down a failing college, newspaper reports regarding the closing of local colleges, research work done on specific cases of colleges going defunct, databases accumulated by professional researchers that may be used for other purposes and research accumulated by hobbyists simply intrigued by the topic of which colleges went defunct and why. Other more formal sources were used such as the IPEDs (International Postsecondary Education Database) database, the databases managed by each state to protect academic records of students who attended colleges that now are defunct, governmental databases on endowments, enrollment, etc.

Chapter 3 describes the methodology used in the study, which includes the description of the data, the research design and the complete sample used for the statistical analysis, the procedure for conducting the analysis of the data, and finally the outcomes that were produced at the conclusion of the study.

Chapter 4 provides the results of the data analysis. The initial intention was to use multiple regression analysis to evaluate the data accumulated and arrive at a conclusion or conclusions based on the R^2 values. A comparison of means test was used in the final analysis instead.

Chapter 5 provides the summary, the conclusions, discussion, and recommendations. The chapter also involves an analysis of the findings and explains why the findings occurred and what they mean. Suggestions for future researchers are also elaborated in this chapter.

CHAPTER 2

REVIEW OF THE RELATED LITERATURE

The purpose of this literature review is to identify the previously published research that identifies those indicators of the conditions within institutions that may predict vulnerability to failure. The Introduction exhibits the previously published works and the contributions to the possible complete list of indicators. The Compilation of Indicators provides the list made for this study that represents the accrued descriptions of each indicator. Some of the indicators were assimilated into a more complete description. Some indicators are in the final compilation because they were mentioned by only one researcher or by a few researchers who used the same description. The Condensed List provides the final comprehensive list taken from the literature review as well as a summary of why those factors may contribute to a college failing.

Bowen's Theory of Higher Education Revenue and Cost

The revenue theory of cost (Bowen, 1986, p. 179) provides the theory base of this study. That theory base was first defined by Howard Bowen (1986) and describes seemingly contradictory behavior patterns exhibited by leaders of higher education institutions. Those behaviors include the drive to raise as much capital as possible so that more money can be spent on new programs and services with the desired result being the increased prestige of the institution and the improvement in the quality of students' educational experience. Those behaviors may seem contradictory since there is little evidence that those institutions prefer to seek ways to efficiently use their income. That

lack of evidence leaves a gap in the existence of an institution in terms of its ability to demonstrate that growth and investments actually result in improved quality of a student's educational experience or services provided. There are typically no preparations made for difficult times by most institutions. When difficult times do come those institutions most overextended become most vulnerable.

Howard Bowen addressed the tendency of institutions of higher education to be caught in the cycle of raising capital only to use it to begin new programs and services that would in return demand even more capital. The concept of "added value," according to Bowen (1980) is that an expensive college will be able to produce a more meaningful and useful change in the student from the time they enter as freshmen to the time they graduate from college. In fact Bowen conducted a study to measure the validity of that impression and he commented on the results:

Among the characteristics considered were the size of institutions, faculty salaries, curricular emphasis, method of instruction, religious emphasis, extracurricular activities, residential arrangements, and student-faculty relationships. The outcomes were defined in terms of "value added", that is, desirable changes in students from the way they were as entering freshmen to the way they were as graduating seniors. Though available data were sparse and not wholly consistent, several tentative conclusions emerged. First, it was found that on the average the graduating seniors from various institutions differed widely on outcomes such as academic achievement, religious interest, and esthetic sensibility. Also it was found that at most colleges, regardless of specific

characteristics, considerable value added occurred as students were transformed from freshmen to seniors. But the surprising conclusion was that the differences among institutions in value added were slight. Small, parochial, low-cost institutions were bringing about changes comparable in magnitude to those occurring in large, cosmopolitan, and expensive institutions. The differences among institutions' graduating seniors, which were substantial, could be explained largely by differences among the same students when they were entering freshmen, which was also substantial. Those institutions that recruited the ablest students produced the ablest graduates; those admitting students with strong religious interests produced religiously interested graduates, and so on. (p. 153)

Bowen also introduces the revenue theory of cost function and explains that there is an optimal size for an institution based on the ability to divide the cost of basic infrastructure among increasing numbers of students on the one extreme and complicated by the fact that after the institution achieves an optimal size and then keeps on growing new diseconomies of scale take over and the cost of administrating the institution rises, the value to students drops relative to costs from the point of view of the students, and the cost of recruiting students from ever more distant pools resulting in more increased costs to students in terms of travel etc.(p. 179) In concluding his examination of the revenue theory of cost and its place in higher education Bowen observes:

...on grounds of educational quality, it may be desirable to err on the side of smallness. This tentative recommendation takes on special importance in the

1980s when enrollments may stop growing or even decline. The American higher education system might be improved qualitatively if public policy were to encourage a shifting of the weight of enrollments from very large institutions to the smaller and middle-sized ones. (p. 198).

In his book *The Cost of Higher Education*, Bowen uses the revenue theory of cost to explain findings from studies of many individual institutions exhibiting wide variance in the per student cost of education. In his analysis of the implications of the studies done on individual institutions he came to 3 sets of findings. The first set of findings had to do with the fact that the costs for any given institution could not be predicted by any formula because the manner that revenue is dispersed by each institution has a wide range of possibilities. Bowen (1980) stated that:

A plausible hypothesis might have been that unit cost would cluster closely around a well defined mode representing the combined experience of many institutions that render basically similar educational services. Instead, the dispersion of costs proved to be so wide, even for ostensibly similar institutions that the mode cannot be assumed to represent an ideal or widely accepted standard. This variance is of course consistent with the revenue theory of costs, namely, that the cost of any institution is largely determined by the amount of revenue it can raise. (p. 227)

The second set of findings had to do with how institutions allocated their resources across the range of institutional cost centers. Instead of one generally followed

model for disbursing funds across the institution there emerges no set pattern at all.

Bowen explained:

Apparently, there are many ways to conduct higher education, and no one best way is so demonstrably superior as to be widely adopted. Data on resource allocations provide little guidance as to what mode of operation might be most appropriate. These data give the impression of almost centrifugal randomness. (p. 228)

Bowen found that for the most part the manner in which resources were shared involved minimal differences. Rich institutions differed very little from poorer institutions in terms of how they share resources between teaching, student services, and scholarships. Bowen explains one specific difference that emerged relative to the disbursement of resources:

Affluent institutions spend relatively less for faculty, for the direct teaching function, and for academic building space, and they spend relatively more for nonacademic staff, for purchased goods and services, and for student aid. (p. 228)

The third set of findings from the studies on individual institutions relates to the magnitude of the effect on the educational outcomes of the institution. Educational outcomes are those “value added” effects that involve desired changes in the student from the time they enter as freshmen to the time they graduate. Those desired changes affect the student in terms of knowledge, skills, personal aspirations and goals, value and belief systems, and maturing of attitudes. Bowen explained the findings:

...the *amount* of value added associated with a given increase in unit cost was difficult to judge. Nevertheless, the evidence suggested that on the average increases in cost are favorable to outcomes. However, there are undoubtedly low-cost institutions that produce excellent results and high-cost institutions with mediocre performance. Good education cannot be bought with money alone. It requires also tangible qualities such as a clarity of purpose, dedication, sense of community, love of learning and teaching, personal interest in students, and prudent administration. Money can be wasted in higher education as well as in families, businesses, and government agencies. Caution is advisable when making claims that increasing amounts of money will bring about proportionate improvements in outcomes; yet, on the average other things being equal, money does make a difference. (pp. 228-229)

It is the revenue theory of costs, and the first, second, and third findings from the studies on individual institutions that Bowen (1980) analyzed in the book *The Cost of Higher Education* on which this researcher is basing this study.

College Closure/Merger Research

MacTaggart (2007) and others researched forty colleges that were going defunct or in danger of going defunct and began to identify issues related to colleges getting into trouble that could lead to closing. Some of those issues identified are:

1. A combination of increasing debt with a decreasing endowment. (para. 7)
2. Leadership separating from collaborators in difficult times. (paras. 12, 13)

MacTaggart's work does not analyze the conditions of the institution at the time of intervention but it does describe the steps taken to effect rescue.

Putnam (1996) conducted a qualitative study that investigated the involvement of boards of trustees in the actual final days of 3 small private colleges that closed. He discovered that 2 early indicators of trouble are:

1. As the college declines the board takes a less active role in the core financial issues of the institution.
2. As the college declines the president will begin to restrict access to the financial information once easily available.

Taylor (1996) investigated the financial troubles at the University of the District of Columbia and found that an institution shows a number of telltale signs of approaching critical mass. He names the type of conditions that indicate big problems to come (paras. 6-16):

1. Raising tuition while cutting faculty salary. Raising tuition while freezing faculty salary may be an even earlier indicator.
2. Number of degrees awarded falls steadily over a period of several years.
3. Downsizing the curriculum from 4-year to 2-year college, or talk of doing so.
4. A lack of understanding and respect for the mission of the institution by the local business and public officials.

Thomas Longin, a higher education researcher and consultant, (Hebel, 2006) also says that there are factors that contribute to the stability of an institution and its ability to weather sudden storms. He identifies factors associated with the ability to survive in hard

times while analyzing conditions at Clarke College in Iowa. Stability factors he mentions are:

1. The ratio of enrolled FTE to endowment is at a minimum 1500 enrollment to \$50 million in endowments. Expressed as: 1500 FTE/\$50M endowment.
(para. 4)
2. Focus on improving amenities that attract full time students.
3. Cut back or limit tuition discounting so that it does not exceed the average for type of college and geographical area. Private 4-year colleges similar to Clarke College discount at an average of 35.5 percent for freshmen. (paras. 14-16)
4. Work hard to get the attention of a foundation.(paras. 20-22)
5. Adjust the academic mission to focus on market needs. “Consider thematic changes to serve emerging markets and needs in academe.”(para. 29)

Manion (2007) researched the rankings popularly marketed by *U.S. News* magazine. Those rankings have been used for decades by students and parents to select the best and possibly most stable colleges for new students to attend. His analysis of the ranking system shows that it is deeply flawed as is best demonstrated by the observation, “But how valuable is that assistance if it gives a relatively high ranking to a college that closes before the end of a student’s freshman year?”(para. 3). That flawed system is not of interest for this study but the options that are mentioned as more meaningful for the system are perfectly relevant to this study. Manion mentions that there are several solid

measures of the stability of a higher education institution. Those measures posed as questions are (paras. 12-14):

1. Are the numbers for FTE and FTF both decreasing? (Where FTE = full time equivalent enrollment and FTF = full time faculty.) These numbers should both increase together in a healthy institution.
2. Is the ratio of net assets to total expenses decreasing? This is known as primary reserve.
3. Is the ratio of primary assets to total debt decreasing? This is known as viability.
4. Is the ratio of debt service to total expenses increasing? This is known as debt burden.
5. Is the number of FTF falling as enrollment falls, or as PTF rises? (FTF is the total number of full time faculty and PTF is the total number of part time faculty)

Bates and Santerre (2000) conducted a time series analysis and claim to have completed the first “study to collect and analyze data on private college closure and merger rates”.(p. 275) They also observe that “Whether the results of our macro analysis would hold up for a disaggregated study remains to be determined”.(p. 276) The conclusion of their study indicates that when the real value of tuition is falling, faculty salaries are rising, and enrollment is dropping, the institution is most in danger of being forced to close. They also conclude that falling enrollment is the strongest indicator and tends to stand on its own. Falling tuition value (cost of tuition rises with no

corresponding value added) combined with rising faculty salaries in combination is the second most influential indicator.(p. 275)

Bates and Santerre (2000) began their study on the premise that “the analysis of university behavior in a market context has been an under-researched area in economics.” (p. 268) Their desire was to fill the void in Higher Education literature regarding exit decisions of private 4-year, non-profit colleges. Their research indicates that mergers in Higher Education are less common than in general business because of institutional missions built into the colleges by their founders and made constantly evident by factors such as the very name of the college. In their research to identify the number of closings per year they discovered that there is an apparent inverse relationship between periods of downturns in the economy that coincide with business failures. Bates and Santerre (2000) observe that “during the economic expansion of the late 1960’s, the data suggest that the closure rate of colleges began to accelerate while the failure rate of businesses in general began to decelerate. This same differential pattern also holds up fairly well during the economic expansion from 1983 to 1988.”(p. 271) These observations are important because, according to Bates and Santerre, they indicate that a conceptual model could be constructed to account for college closures and mergers.(p. 268) They further support this observation with data that indicates that during the 35 year period from 1960 to 1994 the differential trend between college closures and business closures continued.

It is through development of their conceptual model that the value of those indicators was established. Bates and Santerre (2000) say:

In the absence of any exit barriers, microeconomics theory predicts that profit-seeking private firms close and exit an industry in the long run when the residual claimants are unable to obtain at least a normal rate of return or profit on their investment. Financially troubled for-profit businesses may also be ripe targets for a merger or takeover. (p. 271)

To apply this rational, for-profit business theory to non-profit colleges Bates and Santerre (2000) contend:

Although not-for-profit private firms may not pursue maximum profits as for profit businesses do, they still may close or merge when profits fall below some desired level (Williams et al., 1992). For example, not-for-profit organizations may close when they no longer break even (Newhouse, 1970). It also seems reasonable to suspect that mergers are more likely for not-for-profit firms that face the financial pressure to close otherwise. (p. 271)

They ask the reader to accept that the market for a college education is competitive in a similar sense to general business competition. Based on that assumption Bates and Santerre (2000) conclude:

As a result, the representative private college, especially one weighing the exit or merger decision, considers price as determined within the market for Higher Education services. The representative private college exits the industry (or merges) in the long-run when its actual profit rate per student, $\pi(q)$, falls below some desired or threshold level, π^* . Mathematically, the typical private college chooses to exit or merge when:

$\Pi(q) < \Pi^*(m)$, where the threshold profit rate has been specified as a function of the specific mission of the college (p. 271-272).

Written in basic terms this formula says that when the actual profit per student drops below the minimum acceptable threshold the college will be forced to merge or exit.

This concept is important also because the threshold will vary per institution. Bates and Santerre (2000) go on to write the formula in terms of market price for a college education at a private college:

Where P = market price, AC = cost of providing the college education, and z = external cost effects such as changing input prices.

$$P < AC(q, z) + \Pi^*(m) \text{ (Bates and Santerre, 2000, p. 272)}$$

Writing this formula in basic terms it says that a college will be forced to choose to exit when the market price of a college education is less than the cost of providing the education by that individual college added to the minimum acceptable profit from providing that education. They go on to associate the conditions evident when the college exits the industry and enrollment goes to zero.

It follows that the decision to exit the industry (or merge), and essentially enroll zero students, depends on the parameters of the model, or:

$$q = 0 = f(P, z, m).$$

Summing across all of the private colleges in the higher education industry, the percentage of colleges that actually exit or merge, X_i , in the aggregate can be stated as a function of the market price of a college education, exogenous factors

influencing the cost of providing a private college education and the percentage of private colleges with similar missions, or:

$$X_i = g(P, Z, M). \text{ (p. 272)}$$

The final equation is the theoretical basis for the time-series study that Bates and Santerre carried out. That formula and its component parts tie back strongly to the revenue theory of costs on which this study is based. The Bates and Santerre theory also includes the major concepts analyzed by Bowen (1980). The concept of “value added,” the concept of what a college education should cost, and the value of a college education from the point of view of the student are factored into the Bates and Santerre formula. In their analysis the market price P is measured by the total actual costs of providing a college education. The implication of this formula (in agreement with Bowen) is that that the closure rates of private 4-year colleges should be expected to decline during times of rising tuition (rising real cost) across the higher education industry because of increasing marginal profitability. (p. 272) They then introduce 2 input variables as measures of Z . The first input variable is faculty salaries on a yearly basis. The second input variable relates to the size of the available student pool. Colleges may take measures to affect the size of the available pool of students and some of those measures may impact as an exogenous expense. (p. 273) The size of the existing pool of students used for the study was estimated to be the population of people between the ages of 18 and 24 in the U.S. for each year. They also explain:

The exit and merger rates of private colleges are hypothesized to increase with average real faculty salary but decline with the size of the potential student pool,

ceteris paribus, since profits fall and rise at the margin with respect to each of those changes. (p. 273)

Findings from the Bates and Santerre (2000) study support the theory base of this study by showing that college closure rates and merger rates decline with a higher cost of a college education. They say in fact:

Calculated elasticities suggest that a one percent increase in tuition leads to a 5.8 percent decline in the private 4-year college closure rate and a 7.7 percent decline in the merger rate. A simple simulation can put these percentage changes into perspective. If the real tuition rate was to rise from one percent or \$50 above its sample mean of approximately \$5,000, the results indicate that the closure rate would fall from its sample mean of 4.4 percent to 4.1 percent per 1,000 per year. (p. 274)

They also mention the effects of faculty salary on closure rates:

In addition, the empirical findings reveal that both the college closure and merger rates are directly related to real faculty salary. These results were expected from the theoretical model. Specifically, a one percent increase in real salary is associated with a 15 percent increase in the private 4-year college closure rate and a 16 percent increase in the merger rate, *ceteris paribus*. (p. 274)

In conclusion Bates and Santerre (2000) observe that they believe their study to be the first to collect and analyze data on the causes of 4-year private college closures and mergers. They go on to define their findings:

The empirical results indicate that private 4-year college closures and mergers are more likely when the real value of tuition falls, real faculty salaries rise, the student pool dries up, and religious institutions dominate less. The high rate of exit in the higher education industry during the late 1960's and early 1970's was due, in part, to the sharp decline in the percentage of religiously-affiliated colleges and the beginning of a slowdown in the growth of the student pool. In addition, although both tuition and faculty salaries increased in real terms over this period and tuition advances surpassed faculty salaries (a double digit elasticity) outweighed the inverse marginal impact of tuition (a single digit elasticity). Thus, the more pronounced effect of rising faculty salaries contributed to the relatively high rate of closures and mergers observed in the late 1960's and early 1970's. (p. 275)

The one indicator question that arises from Bates and Santerre (2000) is: Are faculty salaries rising while the student pool is shrinking and tuition is rising with no corresponding increase in value to the student?

Stressed College Research

Martin and Samels (2009) base the focus of their research on their definition of a “stressed college”:

A stressed college or university is defined as an institution that is dependent on tuition or state appropriations, smaller than it should be and needs to be, and lacking in name-brand recognition. The school's enrollment, endowment, gifts,

and grants have been flat, at best, for several years, and most, if not all, long-range planning efforts address subsistence rather than sustained growth. (p. 3)

Patricia Cormier (Martin and Samels, 2009, p. 93) contributes another definition of what constitutes a distressed or vulnerable college:

Vulnerable or stressed colleges are often defined as those in financial difficulty and with declining enrollments, but a fragile college may also exhibit other signs of stress, such as an ambiguous or dated mission, high student attrition, and unacceptable levels of faculty and staff turnover. Budget constraints clearly rank at the top of the list. (p. 93)

W. Stephen Jeffrey (Martin and Samels, 2009, p. 144) also contributes a definition of the characteristics of a vulnerable or stressed college. He says:

Most American colleges that are fragile find themselves in this situation for more mundane and structural reasons than a fifteen-year civil war: their tuition discount is too heavy, the ratio between endowment and operating budget is less than 1:1, or debt service is 15% of the operating budget, as primary examples. (p. 145)

Jeffrey (Martin and Samels, 2009) shortly adds that there is a strong connection between a college finding itself in a vulnerable and stressed condition and its lack of a strategic plan that it has followed through on:

Many fragile colleges and universities became fragile because they lacked a strategic plan and the leader necessary to accomplish it. From the perspective of fund raising, it is critical that the college develop a vision that can be clearly articulated and understood by all constituents and that there be broad support

among key members of the college community for it before the development office launches the fund-raising campaign. (p. 145)

D. Bruce Johnstone (Martin and Samels, 2009) continues to contribute to the definition of a stressed or vulnerable institution and contributes the beginnings of indicators:

The underlying fragility of colleges and universities is due to the naturally diverging trajectories of their per-student costs and available revenues. This divergence, also observable in colleges and universities throughout the world, is a function mainly of the labor intensity of the enterprise, both of teaching and of scholarship, compounded by the inclinations of faculty and many academic leaders to provide “more and better”, compounded further by the tendency of technology to increase rather than decrease unit costs. These trends have produced these results in higher education systems around the world.

- Slowing the upward trajectory of faculty and staff wages, salaries, and benefits
- Raising tuition and fees
- Turning to philanthropy
- For country systems, encouraging a growing private sector
- For leaders of U.S. public institutions that are financially fragile, insisting on obtaining and then using managerial flexibility to maintain enrollments but also to trim programs and costs

- For leaders of U.S. private institutions that are financially fragile, finding a market niche, being prepared to shed faculty and staff that are peripheral, and not lightly underselling the product with excessive price discounting.
(p. 41)

Johnstone makes his point conclusively with his four lessons for presidents, provosts, and boards that arise from his analysis of the factors contributing to fragility. He elaborates the four lessons as:

1. *Tuition fees.* A consistent stream of dependable revenue from sources other than the government is critical. Obviously, tuition fees will remain the principal source of revenue in the private sector. However, particularly in the light of the faltering reliability of governmental revenue, tuition fees can be just as important in higher education's public sectors...
2. *Cost-side solutions.* Although we have portrayed financial fragility as the default condition of most colleges and universities worldwide, and although we have stressed the paramount need to buttress faltering revenue trajectories and avoid painful cost-side solutions such as cutting, restructuring, and reallocation, these same solutions must remain squarely on the policy table of presidents...
3. *The access agenda.* The agenda of widening participation and promoting higher education access among populations hitherto underrepresented requires system advocacy and oversight. In spite of the widespread American perception of the academy as liberal and politically leftist, universities

worldwide tend to be meritocratic and frequently not well suited to provide the kind of tertiary-level education wanted and needed by most youth...

4. *Institutional diversification.* College and university leaders must curb the inclinations of their institutions, particularly their faculty members, to over focus only on scholarly prestige and student selectivity. There must be room and resources for excellence in other, less costly dimensions of quality such as teaching effectiveness, student retention, community service, and continuing professional development. (pp. 47-48)

Daniel J. Levin (Martin and Samels, 2009, pp. 52-53) bases his definition of a fragile or stressed institution on the report from Moody's Investors Service from January 2007. He points out that those colleges most likely to be stressed or fragile now or in the future are:

1. Small private colleges with limited geographic draw, particularly those in rural areas with small endowments.
2. Private colleges with ambitious strategic plans and spending to improve national reputation.
3. Regional public universities in weaker demographic areas that compete heavily with community colleges.
4. Community college districts in economically stagnant areas.

Michael Townsley (Martin and Samels, 2009) analyzed the economic model for not-for-profit private 4-year colleges and found that they did not substantially differ from other institutions of higher education in terms of their economic model. (p. 126) He goes

on to provide his definition of a college that is stressed or fragile in terms of its economic risk:

A college or university is at financial risk when normal operations, endowment income, or liquidity reserves are insufficient to fully cover debt service, payroll expenses, vendor payments, or unexpected emergencies. The risk now becomes real because conditions in debt instruments may require full and immediate payment of outstanding balances, employees can sue for nonpayment of services, or vendors can also sue or place a lien on the property that could prevent short-term borrowing. (pp. 127-127)

Michael Townsley also contributed an observation that synthesizes the position and awareness of presidents of higher education institutions that find themselves in fragile and distressed situations possibly leading up to closure:

Most presidents...of an at-risk college or university are all too aware of the detonating condition of their institution if it has a history of deficits, declining enrollment, costs rising faster than revenues, or ever increasing levels of short term debt to cover daily cash requirements...These presidents have learned to cope with decline; whether they are successful at coping is another issue. (p. 237)

That observation may at least partially address the question this researcher asked “how did the administrators, the board of directors, the faculty, the community, the students, the state, all manage to “allow” a college to go out of service”?

Barbara Townsley (Martin and Samels, 2009), president of Nichols College and one of the few college presidents to successfully lead a failing college back to health cites 3 factors that may be indicators of, or trigger points for, more serious problems:

1. Tuition discounting is more than 35%
2. Tuition dependency is more than 85%
3. Debt service is more than 10% (p. 237)

Martin and Samels, (2009) clearly identify Barbara Townsley's 3 trigger points as being the "most common at risk characteristics we studied over the past 6 to 8 years; we found dozens of presidents and CFO's who were wrestling with these 3 issues..." (p. 237).

Robert C. Andringa (Martin and Samels, 2009), once served as the president of the Council for Christian Colleges and Universities (CCCCU). He suggested that Martin and Samels test their list of indicators synthesized from the contributions of their "Associates" in 13 of the 16 chapters of their book *Turnaround: Leading Stressed Colleges and Universities to Excellence*. As a result he conducted a study using a Web based survey instrument. He asked 100 presidents of non-profit, 4 year, colleges to indicate how strongly they agreed with the relevance of each indicator in Martin and Samels list using a 5 point scale where a 1 indicates *strongly disagree* and a 5 indicates a *strongly agree*. 54 presidents responded. The top 5 indicators according to their ratings were:

- Institution is on probation, warning, or financial watch with regional accreditor or a specialty degree licenser (4.35)

- Short-term bridge financing has been required in the final quarter of the last 5 fiscal years (4.0)
- Deferred maintenance is at least 40 percent unfunded (3.89)
- Majority of faculty do not hold terminal degrees (3.87)
- Debt service is more than 10 percent of the annual operating budget (3.76) (p. 175)

When those same 54 presidents also rated the least relevant indicators they only gave 3 of the indicators a rating below a 3. The implication is that only 3 indicators are just slightly into the “not relevant range” according to these responding presidents on average. The 5 indicators with least relevance according to this survey were:

- No complete online program has been developed to date (2.57)
- Collectively the leadership team average more than twelve years or fewer than 3 years of service at the institution (2.72)
- Less than 10 percent of the operating budget is dedicated to technology (2.79)
- No new degree or certificate program has been developed for at least 2 years (3.06)
- There is less than a 1-to-3 ratio between endowment and operating budget (3.13) (pp. 175-176)

The remaining ten indicators rated above 3.13 in the system. This study, in my opinion, does substantially indicate the relevance of the indicators synthesized by Martin and Samels. It will only be after their inclusion and the related data is collected and associated to the indicators and then the final analysis is completed that the pertinence of

any of the indicators is known for certain. Until then subtle and questionable relationships should not be ignored. This concept of subtle and questionable relationships will be used by this researcher in the final compilation and merger of indicators collected from the studies mentioned in this Review of the Related Literature.

Martin and Samels (2009) list 20 indicators of institutional fragility. (pp. 9-20) They caution that the list may mislead to a conclusion that a healthy institution is not healthy but they argue that a preponderance of the indicators in any one institution identifies strong slippage in the health of the institution. Their list was synthesized from contributions made to their book *Turnaround: Leading Stressed Colleges and Universities to Excellence* by “Associates” who are professional practitioners, researchers and scholars in higher education and who are especially experienced and knowledgeable of private 4-year colleges and universities. Martin and Samels do not provide a comprehensive description of the synthesis process they used. Instead they do provide a description of how they recommend the integration of a summary review of the book’s core chapters into a comprehensive turn around plan for failing institutions. (p. 235) In spite of that lack of a description of their process this researcher finds the indicators identified by the contributors to the Martin and Samels research to be pertinent to this study and their validity is demonstrated by the reputations and experiences of the contributors. The list of indicators provided by Martin and Samels (2009, pp. 9-20) is:

1. Tuition discount is more than 35%
2. Tuition dependency is more than 85%
3. Debt service is more than 10% of the annual operating budget

4. Less than a 1 to 3 ratio between the endowment and the operating budget
5. Student default rate is above 5%
6. Average tuition increase is greater than 8% for 5 years
7. Deferred maintenance at least 40% unfunded
8. Short-term bridge financing required in the final quarter of each fiscal year
9. Less than 10% of the operating budget is dedicated to technology
10. Average annual alumni gift is less than \$75
11. Institutional enrollment is 1000 students or lower
12. Conversion yield is 20% behind that of primary competitors
13. Student retention is more than 10% behind that of primary competitors
14. The institution is on probation, warning, or financial watch with a regional accreditor or a specialty degree licenser
15. The majority of faculty do not hold terminal degrees
16. Average age of full time faculty is 58 or higher
17. The leadership team averages fewer than 3 years or more than 12 years of service at the institution
18. No complete online program has been developed
19. No new degree or certificate program has been developed for at least 2 years
20. Academic governance and curriculum development systems require more than one year to approve a new degree program

Summary

Bowen's revenue theory of costs in higher education provides the basis for understanding the behaviors exhibited by colleges and universities that later contribute to their failure. Bowen's theory indicates that institutions will continuously raise as much capital as they can and then use that capital to add to the institutional services and infrastructure. This theory centers on the concept that institutions of higher education have virtually no history of holding some of their capital acquired during "good times" to help them survive "bad times" such as periods of enrollment shrinkage and economic events that adversely affect higher education. The laws that Bowen attributes to his revenue theory of costs explain that even those institutions that have accumulated large endowments are not immune and may even be as susceptible to downturns and long periods of stagnation as the small and less wealthy institutions. Those large endowments may not be available for such measures as would be needed to keep the college functioning over a long period of no growth or even a protracted downturn.

The research on closures and mergers provides a strong relationship to Bowen's theory as well. Observations by practitioners and researchers in higher education relate to observations made by their peers, and they tie into attempts by others to actually formulate the conditions of failure. Bates and Santerre provide a set of real formulas that coincide well with Bowen's theory and that incorporate observations made by others. The conclusion is that Bowen does provide a logical theory base for this study and that indicators identified by practitioners and researchers are valid and deserve inclusion in this study.

Work done by Martin and Samels on the fragility of stressed colleges provides a thorough analysis by a broad range of experienced practitioners in higher education. Issues related to Bowen's revenue theory of costs appear in the research by Martin and Samels as well. The observations by their contributors seem to center around the problem that institutions of higher education are too often not prepared to deal with periods of downturns in enrollment or alumni gifting and that lack of preparedness leads to institutional stress. Martin and Samels also contribute a list of indicators that are well chosen, explained and defended by their contributors.

It is the combination of the theory base provided by Bowen, the research on indicators found by researchers on closed and merged institutions, and the research on indicators on fragile and stressed institutions analyzed by contributors to the study by Martin and Samels, and the theory base provided by Bates and Santerre that provide the solid foundation for this study.

CHAPTER 3

METHODOLOGY

Introduction

Santerre and Bates (2000) conducted a study that came close to addressing the issue of this research project. Notably there was a lack of definition of the importance of the variables that were chosen for their study. The researchers did choose a set of variables, and they did come to a conclusion based on those variables. However, they left out a number of other variables that could arguably be as important as those actually used for this study. As mentioned before other researchers point out such factors as the endowment and its size relative to the operating cost of the institution (American Society of Higher Education, 1993), the scale of the charisma of institutional leaders or the lack thereof (Bryson, 1995), the size of participating alumni and their continued affiliation with the institution, the degree to which the physical plant of the institution is maintained from trees and hedges to the actual living space of the buildings and the cost of that upkeep, the management style of the administration, the involvement of the board of trustees and the strength of the affiliated church or religious group if any, or founding or perpetuating associations. This study will endeavor to design a better methodology that will come closer to bringing out the true indicators of failure of colleges.

Research Design

This study is a mixed design project. The design is primarily quantitative based on a regression analysis of the complete data set. That is because it was doubtful that a complete data set for a qualitative study could be achieved in the time allowed.

Population

I was also able to verify a total of 139, 4-year non-profit colleges that closed between 1965 and 2005. For purposes of this study however, significant data pertaining to the 32 previously identified factors possibly relating to closure is available for only 40 of those institutions; therefore, the population studied in this research consisted of those 40 institutions (see Appendix A). The final verification of the total number of institutions closed during the 1965 to 2005 time span came from the NCES database (National Center for Education Statistics, August 2001). The 40 institutions included in this study were selected from the following sources:

- Newspaper articles accessed through Highbeam.com and News parachute.com online
- A database kept by Dr. Ray Brown at the University of Missouri
- The International Postsecondary Education Database System online
- The National Center for Education Statistics database online
- Scholarly journals
- The *Chronicle of Higher Education* news and databases

Compilation of Indicators

The result of the review of the literature in the Introduction is a list of 40 indicators of failing institutional health. The source of those indicators from the literature review is as follows:

MacTaggart (2007) contributed 2 indicators

1. A combination of increasing debt with a decreasing endowment. (para. 7)
2. Leadership separating from collaborators in difficult times. (paras. 12, 13)

Putnam (1996) contributed 2 indicators

1. As the college declines the board takes a less active role in the core financial issues of the institution.
2. As the college declines the president will begin to restrict access to the financial information once easily available.

Taylor (1996) contributed 4 indicators

1. Raising tuition while cutting faculty salary. Raising tuition while freezing faculty salary may be an even earlier indicator.
2. Number of degrees awarded falls steadily over a period of several years.
3. Downsizing the curriculum from 4-year to 2-year college, or talk of doing so.
4. A lack of understanding and respect for the mission of the institution by the local business and public officials.

Longin (Hebel, 2006) contributed 5 indicators

1. The ratio of enrolled FTE to endowment is at a *minimum* 1500 enrollment to \$50 Million in endowments. Expressed as: 1500 FTE/\$50M endowment.
(para. 4)
2. Focus on improving amenities that attract *full time* students.
3. Cutback or limit tuition discounting so that it does not exceed the average for type of college and geographical area. Private 4-year colleges similar to Clarke College discount at an average of 35.5 percent for freshmen. (paras. 14-16)
4. Work hard to get the attention of a foundation. (paras. 20-22)
5. Adjust the academic mission to focus on market needs. “Consider thematic changes to serve emerging markets and needs in academe.” (para. 29)

Manion (2007) contributed 5 indicators

1. Are the numbers for FTE and FTF both decreasing? (Where FTE = full time equivalent enrollment and FTF = full time faculty). These numbers should both increase together in a healthy institution.
2. Is the ratio of net assets to total expenses decreasing? This is known as primary reserve.
3. Is the ratio of primary assets to total debt decreasing? This is known as viability.
4. Is the ratio of debt service to total expenses increasing? This is known as debt burden)

5. Is the number of FTF falling as enrollment falls, or as PTF rises? (FTF is the total number of Full Time Faculty and PTF is the total number of Part Time Faculty)

Bates and Santerre (2000) contributed 2 indicators

1. Are faculty salaries rising while the student pool is shrinking and tuition is rising with no corresponding increase in value to the student?
2. Is enrollment shrinking?

Martin and Samels (2009) contributed 20 indicators

1. Tuition discount is more than 35%
2. Tuition dependency is more than 85%
3. Debt service is more than 10% of the annual operating budget
4. Less than a one to 3 ratio between the endowment and the operating budget
5. Student default rate is above 5%
6. Average tuition increase is greater than 8% for 5 years
7. Deferred maintenance at least 40% unfunded
8. Short-term bridge financing required in the final quarter of each fiscal year
9. Less than 10% of the operating budget is dedicated to technology
10. Average annual alumni gift is less than \$75
11. Institutional enrollment is 1000 students or lower
12. Conversion yield is 20% behind that of primary competitors
13. Student retention is more than 10% behind that of primary competitors

14. The institution is on probation, warning, or financial watch with a regional accreditor or a specialty degree licenser
15. The majority of faculty do not hold terminal degrees
16. Average age of full time faculty is 58 or higher
17. The leadership team averages fewer than 3 years or more than 12 years of service at the institution
18. No complete online program has been developed
19. No new degree or certificate program has been developed for at least 2 years
20. Academic governance and curriculum development systems require more than one year to approve a new degree program

Combing Similar Indicators

Those lists are condensed into 31 indicators by matching those that are essentially the same. This researcher used a rule of increased focus or increased measure of a specific effect to decide whether or not to merge indicators with apparently sufficiently similar definitions.

The first indicator merged with another was provided by Bates and Santerre. Their indicator stating that tuition rising without added value to the student was an indication of an institution desperate to raise capital. That indicator matched the statement by Martin and Samels that tuition rising without value to the student indicates a desperate institution that is raising tuition to raise badly needed revenue. Martin and Samels add the subtle difference to their indicator that the “tuition increase would be 8% per year and would continue for 5 years or more”. This researcher finds that subtle

difference adds specific measure to the indicator and increases its ability to reflect increasing fragility of an institution being unable to find an alternate source of capital other than rising tuition.

The second indicator merged with another was provided by Hebel (2006) and focuses on the fact that declining maintenance will fail to attract full time students and keep those that are already enrolled. A similar but more specific indicator provided by Martin and Samels (2009) says that an unfunded backlog of maintenance approaching 50% indicates that an institution is forced to delay those activities that would help stabilize the institution financially but cannot be followed through on because of severe financial stress. The more specific measure of 40% maintenance backlog is a subtle but important feature because it adds an element of measurement to the indicator.

The third indicator merged with another was provided by Hebel (2006) and relates to endowment size compared to enrollment. The indicator says specifically that an institution must have a ratio of \$50M endowment to every 1500 FTE. The Hebel indicator does not involve alumni, and it does not ask whether or not the endowment is growing or shrinking. Martin and Samels (2009) offer a similar indicator with subtle differences. They say that an institution is fragile if the average alumni gift is less than \$75 and fewer than 20% of alumni give annually. The Hebel indicator does not include the effect of alumni giving that is also a subtle indicator of alumni confidence and positive view of the value of the education relative to its cost to the student. This researcher concluded that the Martin and Samels indicator substantially represents the scope of the Hebel indicator and improves on it by including the impact of alumni giving.

The fourth, fifth, and sixth indicators merged were provided by Putnam (1996) and MacTaggart (2007). The only 2 indicators provided by Putnam were merged with an indicator contributed by MacTaggart (2007). Putnam says that a college is unlikely to survive if the board becomes less involved in key financial issues during a period of decline. Putnam also contributes the observation that as financial problems build up the president will begin to restrict access to financial information that was once readily available. MacTaggart says that leadership that separates from collaborators in difficult times is more likely to become defunct than those with highly collaborative leaders who seek support and advice in difficult times. This researcher concludes that the subtle relationship between these 2 conditions lends more value as an indicator if they are combined than if they stand alone. The combined version “the board becomes less involved in key financial issues during a period of decline and the president begins to restrict access to financial information once readily available” paints a more powerful picture of a failing relationship between the board, the president, and the financial deterioration of the institution.

Hebel (2006) and Martin and Samels (2009) provide the seventh and eighth merged indicators. They both make nearly identical observations regarding tuition discounting. Hebel says that the tuition discount rate must not exceed the average for the type of institution in the related geographical area and should not exceed 35.5%. Martin and Samels state that the discount rate should not exceed 35% for any non-profit 4-year institution and that when that limit is passed the institution is probably in a fragile state and desperately trying to increase enrollment.

Hebel (2006), Taylor (1996) and Martin and Samels (2009) all make nearly the identical point about the need for an institution to be able to respond to outside forces, to be recognized by outside forces, and to be supported by outside forces. The creation and implementation of a strategic plan is the current most common approach to accomplishing those activities. If the institution does not have a functioning strategic plan then it is in a fragile condition for dealing with difficult times. This also merges the point made by Hebel that the institution must work hard to get the attention of a foundation. Most foundations will not support institutions that have not developed and implemented a strategic plan.

Condensed List of Indicators

1. *Is tuition dependency more than 85%?* Martin and Samels (2000) say this is important because “above this, it is difficult to maintain adequate funds for policy and development at the institution and, importantly, strong relationships with the provost and the faculty.” (p. 10)
2. *Is debt service more than 10% of the annual operating budget?* This indicator is important because it points to the typical limit where the institution can afford its own debt and still be able to maintain maintenance and other basic financial functions. (Martin and Samels, 2009, p. 11)
3. *Is there less than a one to 3 ratio between the endowment and the operating budget?* “For many years the benchmark has been a one-to-one ratio between endowment and operating budget.” (Martin and Samels, 2009, p. 11) A ratio of 1 to 3 indicates a weakened institution

4. *Is the student default rate above 5%?* Because the average institutional student default rate is 4.5% an institution that maintains a default rate above 5% would be under stress. (Martin and Samels, 2009, p. 11)
5. *Has the average tuition increase been greater than 8% for 5 consecutive years?* Bates and Santerre (2000, p. 275) agree with Martin and Samels (2009, p. 12) that tuition rising without value to the student indicates a desperate institution that is raising tuition in an effort to raise badly needed revenue.
6. *Is deferred maintenance at least 40% unfunded?* Martin and Samels (2009) say that an unfunded backlog of maintenance that is approaching 50% is one of the strongest indicators of institutional fragility. Hebel (2006) points out that declining maintenance will fail to attract full time students and will fail to keep those currently enrolled. (paras. 8, 9, 10)
7. *Has a trend developed for short-term bridge financing being required in the final quarter of the fiscal year?* Martin and Samels (2009) indicate that bridge loans are typically thought of as one-time events that will be replaced by permanent capital in the future. Getting locked into end of cycle bridge loans is an indication of an institution being unable to find the permanent capital. (p. 13)
8. *Is less than 10% of the operating budget dedicated to technology?* Martin and Samels (2009) say that the size of the technology budget is often a most telling indication of how much the institution is depreciating its assets. (p. 12)
9. *Is the average alumni gift less than \$75 and do fewer than 20% of alumni give annually?* Martin and Samels (2009) indicate that this condition may show a lack of

confidence in an institution or its ability to prosper (p. 147). Hebel (2006) says that an even stricter measure is needed and looks for \$50M endowment to 1500 FTE ratio (para. 4). Thomas Longin (Hebel, 2006) says that it is too difficult for small colleges to respond to demanding situations when they can't carve any money out of their budgets. The endowment is just not large enough to support the needs of the enrollment. (para. 4)

10. *Is the institutional enrollment 1000 students or less?* Martin and Samels (2009) say this condition indicates a failure to achieve an economy of scale that matches efficient operations. (p. 14).
11. *Is the conversion yield 20% behind that of primary competitors?* Martin and Samels (2009) say this condition indicates the inability to provide competitive customer service while maintaining limited resources and staff support. (p. 15)
12. *Is student retention more than 10% behind that of primary competitors?* Martin and Samels (2009) claim this to be an important indicator because "Like student yield, the student retention percentage provides an annual statistical snapshot that cannot be reformulated into another, higher number..." (p. 15)
13. *Is the institution on probation, warning, or financial watch with a regional accreditor or a specialty degree licenser?* Martin and Samels (2009) point out that whether the reasons for probation are minor transitory conditions or serious violations the real impact is on the reputation of the institution because of the confidence lost by consumers after news reports of the probation. (p. 16)

14. *Do the majority of faculty members not hold terminal degrees?* Martin and Samels (2009) say that to not achieve a level of at least 50 percent “terminally degreed faculty members indicates an inability to recruit, support, and retain a body of professional talent.” (p. 17)
15. *Is the average age of full time faculty 58 or higher?* Martin and Samels (2009) say that there is an emergence of “middle tier institutions of a professoriate that is becoming increasingly disconnected from the lifestyles and learning styles of current students.” (p. 18)
16. *Does the leadership team average fewer than 3 years or more than 12 years of service at the institution?* According to Martin and Samels (2009) the danger of making mistakes because of inexperience is too high in the “fewer than 3 years group” and the danger of not being willing to explore new possibilities and make changes is too high in the “more than 12 years group.” (p. 18)
17. *Has at least one complete online program not been developed?* Martin and Samels (2009) point out the difference between ‘online courses’ versus ‘online programs’. They also mention that this factor is an indicator of cultural conditions that are too resistant to change toward adopting new trends such as online education. (p. 18)
18. *Has at least one new degree or certificate program not been developed in the last 2 years?* The ability to create new degree programs and experience with designing new degree programs is the best tool to have on hand when vulnerable times are upon the institution. (Martin and Samels, 2009, p. 19)

19. *Do academic governance and curriculum development systems take more than one year to approve a new degree program?* A history of long development and approval times for new programs is an indicator of the inability of the institution to respond to challenges quick enough to make a difference. The education market is filling with organizations that can quickly create and implement new programs and take advantage of the initial student pool. (Martin and Samels, 2009, p. 19)
20. *Are the numbers for FTE and FTF both decreasing?* (Where FTE = full time equivalent enrollment and FTF = full time faculty). These numbers should both increase together in a healthy institution. (Manion, 2007, para 9)
21. *Is the ratio of net assets to total expenses decreasing?* (this is known as Primary Reserve) Manion (2007) says that if the institution is managing its resources properly then Primary Reserve will increase because total expenses will diminish in relation to total assets. (para. 14)
22. *Is the ratio of primary assets to total debt decreasing?* (this is known as Viability) Manion (2007) says that if the institution is managing its resources properly then Viability will increase because total debt will diminish (be paid off) in relation to primary assets. (para. 14)
23. *Is the ratio of debt service to total expenses > 10% and increasing?* (this is known as Debt Burden) Manion (2007) says that if the institution is managing its resources properly then Debt Burden will decrease because debt service (interest paid) will diminish in relation to total expenses because loans will be paid off and capitalized by permanent resources. (para. 14)

24. *Is the number of FTF falling as enrollment falls, or as PTF rises?* (FTF is the total number of Full Time Faculty and PTF is the total number of Part Time Faculty)
Manion (2007) says “The proportion of full-time professors teaching classes is a better indicator of both educational quality and institutional health than the amount that faculty members are paid.” (para. 13)
25. *Does tuition discounting exceed the average for type of college and geographical area? _Private 4-year colleges similar to Clarke College discount at an average of 35.5 percent for freshmen.* (Hebel, 2006, paras. 14-16). Manion (2007) also points out that the discount rate is a measure of how much of the institution's own money it is spending to attract students and includes only those students accepted for admissions which is a better indicator than acceptance rate. (para. 12)
26. *Has the institution been raising tuition while cutting faculty salary (worst case)?*
Raising tuition while freezing faculty salary may be an even earlier indicator. An even earlier indicator would be, according to Bates and Santerre (2000) that as the real value of tuition falls and faculty salaries raise the risk of failure increases.
27. *Have the number of degrees awarded fallen steadily over a period of several years?*
Taylor (1996) observes that a trend toward fewer degrees being completed each year indicates an institution becoming weaker even if enrollment is not falling. Lower numbers of degrees being awarded is the culmination of many other factors impacting the institution. (para. 15)
28. *Is there talk of downsizing the curriculum from 4-year to 2-year college?* Taylor (1996) observes that constant rumors of downsizing from a university with a graduate

school to a local community college causes a lowering of the confidence in the community and weakens the institution's ability to survive. (para. 16)

29. *Does the institution lack a strategic plan or have the lack of the leadership required to accomplish the plan and implement it?* Hebel (2006) observed that the academic mission must be adjusted to meet changing needs of the market. In order to receive inputs from the market and in order to respond to those inputs a strategic plan is needed. Taylor (1996) observed that lack of understanding and respect for the mission of the institution by the local business and public officials and failure to adjust the academic mission to focus on market needs. The mission of the institution is normally conveyed to the surrounding community through the strategic plan. Martin and Samels (2009) point out that this condition (lacking a strategic plan and conveying the mission of the institution) relates to the inability to raise a meaningful endowment and to develop a substantial base of political support in the community. (p. 145)

30. *Does the institution struggle with a combination of increasing debt and a decreasing endowment?* MacTaggart (2007) discovered that colleges that came back from the brink of disaster did it by building the endowment, making the campus attractive to students in order to improve retention, and by adding new programs to draw new students. (para. 7-9)

31. *Does the leadership separate from collaborators in difficult times by restricting access to financial information and/or does the board take a less active role in the core financial issues?* Putnam (1996) and MacTaggart (2007) agree that this is

important because the President of the college will feel comfortable discussing financial problems with the board only when the college is in good financial standing. As problems become worse the President will become more secretive about the problem finances in order to keep the good support of the board. (MacTaggart, 2007, p. 12, 13)

Data Collection Procedures

Each of the data sets have a set of associated fields for which specific data was collected. It is from the analysis of the review of the literature that the characteristics of each associated data field were determined. Those associated fields were based on the condensed list of indicators described in the Review of the Literature.

In order to answer the questions in the condensed list of indicators for each of the colleges included in the study, data was collected from newspapers, scholarly journals, professionally managed databases such as IPEDS, databases kept by professional researchers such as Dr. Ray Brown at the University of Missouri and available at :

http://www2.westminster-mo.edu/wc_users/homepages/staff/brownr/ClosedCollegeIndex.htm, the College History

Garden project available at

<http://collegehistorygarden.blogspot.com/search/label/New%20Hampshire>,

NCES databases online available at:

http://nces.ed.gov/programs/digest/1995menu_tables.asp , and others as they arise in the course of developing this project.

Data Analyses

Data analyses was conducted using SPSS (Statistical Package for the Social Sciences) analytical software. The initial intention was to apply multiple regression analysis. The final decision was to use comparison of means test in stead since the data set became a collection of binary, or simple, responses to the indicator questions. Comparison of means returned ANOVA (Analysis of Variance) tables that provided significance levels for each indicator question.

Expected Outcomes

The outcomes of this study provide answers to the research questions mentioned earlier. The first question may have been at least partially answered by the review of the related literature. The questions flow together in a logical progression with the most basic question at the beginning and building to the answer to the question at the heart of the study at the end.

1. How many U.S. colleges have closed in the past 40 years? The answer to this question is important because it defines the size of the population universe and that figure will help to define the size of research population needed for this study to reach a meaningful conclusion.
2. What were the published reasons for their closures? This question has to be answered in order to answer the questions raised by the analysis of the review of related literature. Those questions, once answered, will provide the values

tabulated in the database for the analytical statistics software application to process.

3. Are there commonalities as to reasons for closure of the institutions? The answer to this question will come from the results of the analytical software analysis of the database values. This will essentially be in the form of Pearson correlation coefficients called R values. Those coefficients can be directly compared to each other in terms of magnitude implying relative impact or importance in the data set values.
4. Are there identifiable characteristics or combinations of those characteristics that are predictive of risk for subsequent closure of colleges in the next few decades? This question will be answered in the conclusion of this study. This could make it possible for institutional managers and researchers to answer the questions asked in this study with their institution as the subject and come to comprehensive conclusions regarding the vulnerability of their institution to failure. This could also prove to be a major contribution to higher education by providing an instrument that may not only prevent failure but that may improve progress of higher education on the whole.

CHAPTER 4

THE STATISTICAL ANALYSIS AND THE COMPLETE DATASET

Data for this study was accumulated in the form of Yes/No answers to the Condensed List of Indicators developed for this study. Each of those indicators is written in the form of a question that was answered during the research on each defunct college listed in the appendix of this document. In the final data table each Yes answer was recorded as a 1 and each No response was recorded as a 0. That format allowed for the statistical software package to do a complete analysis of the data. The software package used is SPSS (Statistics Package for the Social Sciences) version 14 and is widely recognized as a standard in industry and higher education. Comparison of means producing an ANOVA table with the measure of statistical significance was produced as output to infer the impact of the indicators on the viability of the colleges included in the population of this study. Once the data was entered into SPSS in the format shown in the table of significance values (see Table 2) an additional column was added. The additional column was labeled V00001 and included the total number of 1 responses for each college in the study. V00001 was used as the dependent variable in the comparison of means analysis which produced the output with ANOVA tables for each college. The independent variable for each comparison was the question itself (V1, V2, V3, etc.).

Research Question 1 was answered by the Department of Education report on closed colleges for this time period. According to NCES reporting there were 248, 4 year, private, non-profit colleges that closed their doors during the time frame covered by

this study. The time frame of this study was forty years which indicates that about 6 such institutions closed their doors per year during this study window of time. The second research question was addressed in large part by the Review of the Literature and resulted in the compilation of indicators and the condensed list of indicators used in this study. It was indicated that there has been no definitive study to identify indicators of closure and that there has been a recognized need for such a study for at least a few decades. The intent of this study is to begin to fill that need. It was also shown that experts in the field of higher education agree that there would be a finite list of indicators of closure, but they disagree on the indicators that would be included in that list. Those experts provided a number of indicators that were included in this study. The answer to the third research question was addressed by the results of the statistical analysis and the subsequent discussion of findings. The answer to the fourth research question was addressed by the discussing of findings and in the conclusion. The following presentation of the results of the statistical analysis and associated tables will provide answers for the third and fourth research questions.

Results of the Statistical analysis

As mentioned before, the data was entered into SPSS and a column was added to reflect the total number of “Yes” responses for each question. Then the option “Analyze” was selected on the toolbar which opened a submenu. From that submenu the option “Comparison of Means” was selected which opened another submenu. From that submenu the option “Means” was selected. A dialog box then opened which allowed me to enter V00001 as the dependent variable and the questions named as Variables V1

through V31 into the box for independent variables. In that same dialog box the “options” button was selected and from the options list “variance” was selected. Also at the bottom of this “options” box the checkbox of ANOVA Table was checked. I then selected OK and in the original dialog box the OK was selected as well. The analysis ran without reported errors.

The importance of this analysis is that it would provide the statistical significance measures for each comparison of means between the dependent variable and each independent variable. For a comparison to be statistically important it would have to produce an ANOVA table output of less than .05 for the significance measure. The results of this process are provided in Table 2.

Table 1

The Complete Dataset

College Name	Question Numbers																															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Nasson College	1	1	1	1	0	0	1	1	1	1	1	1	1	1	0	1	1	1	1	0	1	1	1	1	1		0	1	0	1	1	1
Barat College	1	1	1	1	0	1	1	1	1	1	1	1	0	1	0	1	1	1	1	0	1	1	1	1	1		0	1	0	1	1	0
Franconia College	1	1	1	0	0	1	0	1	1	1	0	0	1	1	0	0	1	1	0	1	1	1	1	1	1	0	1	0	0	1	1	0
Northrop University	1	1	1	1	0	1	0	0	1	1	1	1	1	0	0	1	1	0	0	1	1	1	1	1	1	0	0	1	0	1	1	1
Woodstock College	1	1	1	1	0	0	0	1	1	1	0	1	0	0	0	1	0	1	0	0	1	1	1	1	0	0	0	1	0	1	0	0
Barrington College	1	1	1	1	0	1	1	0	1	1	1	1	0	1	0	1	1	1	1	0	1	1	1	1	1	0	0	1	0	1	1	0
Mount Vernon College	1	1	1	0	1	1	1	1	0	1	0	1	0	0	0	0	1	0	0	1	1	1	1	1	1	0	1	1	0	1	1	0
George Williams College	1	1	1	1	0	1	1	1	1	0	1	1	0	0	0	0	1	1	1	1	1	1	1	1	1		0	1	0	1	1	0
NAES College	1	0	1	1	0	1	0	1	1	1	0	0	1	1	0	1	1	1	1	1	1	1	1	0	1	0	0	0	0	1	1	0
Ambassador College	1	0	1	1	1	1	0	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0
Columbia Pacific University	1	0	1	0	0	0	0	1	1	1	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Eldorado College	1	1	1	1	0	1	0	1	1	0	1	1	1		0		1	1	1	1	1	1	1	1	1	0	0	0	0	1	1	1
Bishop College	1	1	1	1	0	1	1	1	1	1	1	1	1	0	0	1	0	0	1		1	1	1	1	1			1	0	1	1	1

(table continues)

Table 1 (continued)

	Question Numbers																														
College Name	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Trinity College	1	0	1	0	0	1	0	1	1	1	1	1	0	0	0	1	0	0	1	1	1	1	0	1	1	0	1	0	1	1	0
Vennard College	1	1	1	1	1	1	1	1	1	1	1	0	0	0	1	1	1	1	1	1	1	1	1	1	0	1	0	1	1	0	
Upsala College	1	1	1	1	0	1	1	1	1	1	1	1	1	0	0	0	1	1	1	0	1	1	1	1	1	1	1	0	1	1	
Yankton College	1	1	1	1	0	1	1	1	1	1	1	1	0	1	0	1	1	1	1	1	1	1	1	1	0	0	1	0	1	1	
Daniel Payne College	1	1	1	1	0	1	0	1	1	1	1	1	0				1	1	1	1	1	1	1	1	0	0	0	1	1	1	
Southern Benedictine College	1	1	1		0	1	0	1	1	1	1	1	0			1	1	0		1	1	1	1	1	0	1	0	1	1	0	
St. Mary of the Plains	1	1	1	1	0	1	0	1	1	1	1	1	0	0		1	0	0	0	1	1	1	1	1	0	1	0	0	1	0	
Marycrest International University	1	1	1	1	0	1	1	0	1	1	1	1	1	1	0	1	0	1	0	0	1	1	1	1	0	1	0	1	1	1	
World College west	1	1	1	1	0	1	1	1	1	1	1	1	1	1	0	1	1	1	0	1	1	1	1	1	0	0	0	0	1	1	0
Milton College	1	1	1	0	0	1	1	1	1	1	0	0	1	1	0	1	1	1	0	1	1	1	1	1	0	0	1	0	1	1	0
William Tyndale College	1	1	1	0	0	1	1	1	1	1	1	1	1	1	0		1	1	0	1	1	1	1	1	1	0	1	0	1	1	1
Westmar College	1	1	1	1	0	1	0	1	1	1	1	1	1			1	1	1	0	1	1	1	1	1	1	0	1	0	1	1	1
Mount Scenario College	1	1	1	1	0	1	1	1	1	1	1	1	1			1	1	1	0	1	1	1	1	1	1	1	1	0	1	1	1

(table continues)

Table 1 (continued)

	Question Numbers																															
College Name	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Margaret Morrison Carnegie College	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	1	1	0	1	1	1	1	1	1	0	0	1	0	1	0	0
Spring Garden College	1	1	1	1	0	1	1	0	1	1	0	0	0	1	0	1	1	1	1	0	1	1	1	1	1		0	1	0	1	1	1
College of Saint Teresa	1	1	1	0	0	1	1	1	1	1	0	1	0	0		1	1	1	1	1	1	1	1	1	1		1	1	0	1	1	0
Ricker College	1	1	1	1	0	1	0	1	1	1	0	0	0	0	0		1	1	1	1	1	1	1	1	1	0	0	1	0	1	1	0
Finch College	1	1	1	1	1	1	0	1	1	1	1	1	0	1	0	1	1	1	1	1	0	1	1	1	0	0	0	1	0	1	1	0
Bennett College	1	1	1	1	0	1	1	0	1	1	0	0	1	1	1	1	1	1	1	1	0	1	1	1	0	0	0	1	0	1	1	0
Phillips University	1	1	1	1	0	1	1	1	1	1	1	1	0		0	1	0	0	0	1	1	1	1	1	1	1	0	1	0	1	1	0
Bradford College	1	1	1	0	0	1	1	0	0	1	0	1	1	1	0	1	1	1	1	1	0	1	1	1	0	1	0	0	0	1	1	1
Alliance College	0	1	1	0	0	1	1	1	1	1	0	0	1	1	0	1	1	1	1	1	1	1	1	1	1	0	0	1	0	1	1	1
Mary Manse College	1	1	1	1	0	1	0	1	1	1	1	1	0	1	0	1	1	1	1	1	1	1	1	1	1	0	0	1	0	1	1	0
University of Albuquerque	1	1	1	1	0	1	1	0	1	1	0	0	0	0	0	1	0	0	1	1	1	1	1		1	1	0	1	0	1	1	0
Notre Dame College	1	1	1	0	1	1	1	1	1	0	1	1	1		0	1	1	1	0	1	1	1	1	1	1	1	0	1	0	0	1	0
Jordan College	1	1	1	1	0	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	0	1	0	1	1	1
Duns Scotus College	0	0	1	0	0	0	0	1	0	1	0	0	0	1		1	1	1	0	1	1	1	0	1	0	0	1	0	1	1	0	

Table 2

Table of Significance Measures from ANOVA Tables for Each Question

Question (1 through 31)	Significance from ANOVA
Question 1	.269
Question 2	.001
Question 3	.014
Question 4	.006
Question 5	.222
Question 6	.000
Question 7	.002
Question 8	.295
Question 9	.007
Question 10	.828
Question 11	.000
Question 12	.002
Question 13	.068
Question 14	.591
Question 15	.558
Question 16	.310
Question 17	.009
Question 18	.008
Question 19	.117
Question 20	.191
Question 21	.001
Question 22	.001
Question 23	.000
Question 24	.024
Question 25	.022
Question 26	.130
Question 27	.091
Question 28	.097
Question 29	.738
Question 30	.000
Question 31	.005

Table 3 provides the results from the comparison of means test with the significance measure from the associated ANOVA tables where the statistical significance was less than .05 reflecting that the associated indicator question was of

certain importance in the colleges becoming defunct. Those questions not reflecting statistical significance are not shown in Table 3.

Table 3

Table of Statistically Significant Results from ANOVA Tables for Each Question

Question (1 through 31)	Significance from ANOVA
Question 2	.001
Question 3	.014
Question 4	.006
Question 6	.000
Question 7	.002
Question 9	.007
Question 11	.000
Question 12	.002
Question 17	.009
Question 18	.008
Question 21	.001
Question 22	.001
Question 23	.000
Question 24	.024
Question 25	.022
Question 30	.000
Question 31	.005

The results of the ANOVA indicate that 17 of the original 31 questions were determined to be statistically important. Those 17 questions, or indicators, are listed in Table 3. Of those 17 indicators 7 are at least at the .001 level which provides an even higher level of significance. Table 4 provides the indicator questions in full and those that produced a significance level of .001 or better are listed with an ‘*’ and the note stating “significant at the .001 level”.

Table 4

The 17 Most Significant Indicators

#	Question statement
2*	<u>Is debt service more than 10% of the annual operating budget?</u> significant at the .001 level
3	<u>Is there less than a 1 to 3 ratio between the endowment and the operating budget?</u>
4	<u>Is the student default rate above 5%?</u>
6*	<u>Is deferred maintenance at least 40% unfunded?</u> significant at the .001 level
7	<u>Has a trend developed for short-term bridge financing being required in the final quarter of the fiscal year?</u>
9	<u>Is the average alumni gift less than \$75 and do fewer than 20% of alumni give annually?</u>
11*	<u>Is the conversion yield 20% behind that of primary competitors?</u> significant at the .001 level
12	<u>Is student retention more than 10% behind that of primary competitors?</u>

(table continues).

Table 4 (continued)

17	<u>Has at least one complete online program not been developed?</u>
18	<u>Has at least one new degree or certificate program not been developed in the last 2 years?</u>
21*	<u>Is the ratio of net assets to total expenses decreasing?</u> significant at the .001 level
22*	<u>Is the ratio of primary assets to total debt decreasing?</u> significant at the .001 level
23*	<u>Is the ratio of debt service to total expenses > 10% and increasing?</u> significant at the .001 level
24	<u>Is the number of FTF falling as enrollment falls, or as PTF rises?</u>
25	<u>Does tuition discounting exceed the average for type of college and geographical area?</u>
30*	<u>Does the institution struggle with a combination of increasing debt and a decreasing endowment?</u> significant at the .001 level
31	<u>Does the leadership separate from collaborators in difficult times by restricting access to financial information and/or does the board take a less active role in the core financial issues?</u>

Summary of Findings

Research Question 1 was answered by the Department of Education report on closed colleges for this time period (see Appendix: NCES table 245, (August 2001)). According to NCES reporting there were 248, 4 year, private, non-profit colleges that closed their doors during the time frame covered by this study. The time frame of this study was forty years which indicates that about 6 such institutions closed their doors per year during this study window of time. Defining the population universe was important for this study because limitations and delimitations imposed would reduce an already finite population. This researcher identified forty 3 institutions that satisfied the requirements for inclusion in the study. It appears that with limitations and delimitations considered that group of forty 3 institutions is probably very nearly the entire available universe. The second research question was addressed in large part by the Review of the Literature and resulted in the Compilation of Indicators and the Condensed List of Indicators. It was indicated that there has been no definitive study to identify indicators of closure and that there has been a recognized need for such a study for at least a few decades. It was also shown that experts in the field of Higher Education agree that there would be a finite list of indicators of closure but they disagree on the indicators that would be included in that list while their opinions for indicators to be included do have considerable overlap. Indicators provided by those experts were compiled into a list of thirty one questions used to produce the dataset for the final statistical analysis. SPSS provided an empirical analysis of the data by performing a comparison of means test with

ANOVA tables and levels of significance. The answer to the third research question was addressed by the results of the statistical analysis which showed that there are 17 statistically significant indicators out of the original thirty one indicator questions. The answer to the fourth research question was addressed by the discussion of findings. Out of the original thirty one indicator questions there were 7 that were statistically significant at the .001 level. Those 7 indicators are almost certainly important for future planners and administrators. It is the opinion of this researcher that those 7 indicators are probably inseparable from the causes of the majority of colleges being forced to close.

CHAPTER 5

DISCUSSION

Summary of the Study

The fundamental purpose of this study was to begin to answer the question of how did the administrators, the board of directors, the faculty, the community, the students, the state, all manage to allow a college to go out of service? In order to answer that question this study examined a portion of the population of higher education institutions that were forced to close during the 40 year time span between 1965 and 2005, catalog their elemental conditions, and perform a statistical analysis of those conditions.

Statistical analysis will determine the importance of those conditions and the meaning of combinations of those conditions in order to identify predictors that a given college will be forced to close. Those predictors, or indicators, were derived from a list of conditions identified by experts in the field of higher education and especially in aiding and advising colleges that are on the brink of closure. The final list of indicators included thirty one descriptions of conditions with the descriptions being composed in the form of questions requiring a Yes/No answer. Those 31 questions were then answered for each of the 40 colleges included in the study. The dataset was then entered into SPSS using the format of a 1 for a Yes response and a 0 for a No response. A comparison of means test was done with ANOVA tables and significance output for each question. The result was the identification of 17 of the questions being significant at the .05 level and of those there were 7 significant at the .001 level.

Discussion of Research Questions

This study focused on answering four research questions. They were:

- (1) How many U.S. colleges have closed in the past 40 years?
- (2) What were the published reasons for their closures?
- (3) Are there commonalities as to reasons for closure of the studied institutions?
- (4) Are there identifiable characteristics or combinations of those characteristics that are predictive of risk for subsequent closure of colleges in the next few decades?

Research Question 1

The first research question was answered by data from the Department of Education National Center for Education Statistics (National Center for Education Statistics, August 2001). That data shows that a total of 248, 4 year, private, non-profit colleges closed their doors between 1965 and 2005. The indication is that about 6 colleges or universities closed their doors per year during this study window of time. Considering that there are approximately 3,000 such institutions the number of 6 per year closing may seem negligibly small. On the other hand the closure of a single college may put several thousand students in the situation of having no alma mater with which to relate. They will also have the added problem of having to go to some unusual lengths to get copies of transcripts and other factual information regarding their education when they are applying for employment. The entire population universe for this study would be the total number of colleges that were private, non-profit, 4-year institutions that became defunct between 1965 and 2005. Answering research question 1 was important

because it determined the size of that universe as being 248. After this researcher applied limitations and delimitations the available population shrunk to approximately 45. Of those 45 there were 40 that were used for this study. While the size of the population may seem small for this sort of study it does represent the majority of the total population after limitations and delimitations.

Research Question 2

The second research question was addressed in the introduction and the review of the related literature. Many experts have offered their observations and opinions regarding the reasons for colleges to be forced to close. Those published assertions were identified and discussed in the review of the related literature. Twenty experienced professionals contributed published opinions and observations that were used in this study. Their contributions provide a comprehensive overview of the range of reasons for colleges to be forced to close according to professionals working in higher education.

Research Question 3

The third research question dealt with the identification of commonalities within the list of reasons for closure of the studied institutions. This question was answered in the “College Closure/Merger Research” where the observations of professionals in higher education were contributed into a list of recommended indicators. The Compilation of Indicators was provided in the Methodology section (Chapter 3) of this document. The compilation process led to a point where I was able to combine indicators that were essentially the same in the sense that they asked the same question or identified the same conditions. The result was a list of thirty one indicator conditions that were composed in

the form of questions. A Yes answer to a question would indicate a bad or negative condition while a No answer to a question would indicate that no negative condition associated to the question exists for that institution.

Research Question 4

Question four asked if there are identifiable characteristics or combinations of those characteristics that are predictive of risk for subsequent closure of colleges in the next few decades. That question was answered by the SPSS analysis of the dataset. The findings from the SPSS analysis show that there are 17 indicator questions that are significant at the .05 level and that of those 17 questions 7 of them are significant at the .001 level.

Discussion of Significant Indicators

The fundamental purpose of this study was to answer the four research questions that focused on answering the larger question of “how did the administrators, the board of directors, the faculty, the community, the students, and the state, all manage to allow a college to go out of service?” The study also has the purpose of identifying a list of indicators of conditions that have led to the ultimate closure of a representative population of colleges. That list of indicators will provide some satisfaction to observations made by experts in higher education who have asserted that we are probably no closer to having such a list even after decades of national debate on the topic Martin and Samels (2009, p. 9). As stated before, there were essentially 2 groups of indicators. The larger group of indicators having statistical significance at the .05 level also encompassed the smaller group having statistical significance at the .001 level. There

were ten indicators in the first group with significance at the .05 level and 7 in the second group with significance at the .001 level.

Discussion of Indicators Significant at the .05 level

The first indicator with a statistical significance at the .05 level was Question 3 from the condensed list of indicators from the Review of Related Literature. That question asks “Is there less than a one to 3 ratio between the endowment and the operating budget?” Significance at the .05 level indicates that the difference between the mean of the dependent variable (the totals of Yes answers to each question for each college) and the mean of each independent variable (Yes answers to each question) was small enough to not have been caused by chance alone. Evidence from this research shows that many of the studied colleges did not meet this criterion for survival. In fact, many of them had no endowment at all. When enrollment slumped (for any reason) there simply was no money in the coffers to sustain the life of the college. Other researchers observed, “For many years the benchmark has been a one-to-one ratio between endowment and operating budget” (Martin and Samels, 2009, p. 11). A ratio of 1 to 3 (or less) indicates a weakened institution.

The second indicator with a statistical significance at the .05 level was Question 4 from the condensed list of indicators from the Review of Related Literature. That question asks “Is the student default rate above 5%? Some researchers would say that because the average institutional student loan, default rate is 4.5% an institution that maintains a default rate above 5% would be under stress (Martin and Samels, 2009, p. 11). It may also be argued that this is an indication of ability to compete because student

default rates may be shown to fluctuate with student satisfaction. The real linkage to the other indicators though would be through federal controls on student loan default rates dictating that colleges with default rates above a 35% level will lose their ability to receive federal financial aid and other benefits. The average default rate on FISL (Federally Insured Student Loans) through 1982 was about 12% (Lee 1982, p. 8). There is also a linkage in this data between the student loan default indicator and other indicators because of the relationship between colleges with small enrollment and the default rate. Colleges with small enrollment tend to have smaller average loan size on a per-student basis and the highest default rate is among the small per-student loan category (Lee 1982, p. 67).

The third indicator with a statistical significance at the .05 level was Question 7 from the condensed list of indicators. That question asks, “Has a trend developed for short-term bridge financing being required in the final quarter of the fiscal year?” Martin and Samels (2009) indicate that bridge loans are typically thought of as one-time events that will be replaced by permanent capital in the future. Getting locked into end of cycle bridge loans is an indication of an institution being unable to find the permanent capital (p. 13). There are linkages between this indicator and some of the others in the sense that many of the colleges in the study resorted to short term loans to finance the upcoming semester. Once those loans ran out and the lenders demanded repayment the colleges used emergency fund raising campaigns, sales of real assets such as property or works of art, or libraries. When the real assets were depleted to the point of causing political upset

the colleges resorted to emergency fund raising campaigns with an element of “save the college with your donation” drama (Zimmerman, 2008).

The fourth indicator with a statistical significance at the .05 level was Question 9 from the condensed list of indicators from the Review of Related Literature. That question asks, “Is the average alumni gift less than \$75 and do fewer than 20% of alumni give annually?” Martin and Samels (2009) indicate that this condition may show a lack of confidence in an institution or its ability to prosper (p. 147). Hebel (2006) says that an even stricter measure is needed and looks for \$50M endowment to 1500 FTE ratio (para. 4). Thomas Longin (Hebel, 2006) says that it is too difficult for small colleges to respond to demanding situations when they can’t carve any money out of their budgets. The endowment is just not large enough to support the needs of the enrollment (para. 4). If a new set of courses is needed in order to attract new students and the endowment fund is empty, then the new students will have to go somewhere else. The agreement between the experts on the importance of this indicator of confidence in the institution would also link back to the default rate and enrollment issues. Taylor (1996) observed that lack of understanding and respect for the mission of the institution by the local business and public officials and failure to adjust the academic mission to focus on market needs. There is also a link to the mission of the institution being conveyed to the surrounding community through the strategic plan and new students making enrollment decisions on that basis. Martin and Samels (2009) point out that this condition (lacking a strategic plan and conveying the mission of the institution) relates to failures to raise a meaningful endowment and to develop a substantial base of political support in the community (p.

145). This is in spite of the fact that not having a strategic plan did not prove to be statistically significant on its own but it is seen within these linkages.

The fifth indicator with a statistical significance at the .05 level was Question 12 from the condensed list of indicators from the Review of Related Literature. That question asks, “Is student retention more than 10% behind that of primary competitors?” Martin and Samels (2009) claim this to be an important indicator because “Like student yield, the student retention percentage provides an annual statistical snapshot that cannot be reformulated into another, higher number...” (p. 15). Student retention and student yield (conversion yield) have strong linkages to endowment because successful graduates are the primary givers.

The sixth indicator with a statistical significance at the .05 level was Question 17 from the condensed list of indicators from the Review of Related Literature. That question asks, “Has at least one complete online program not been developed?” It may be argued that this indicator is subject to limitations because of the fact that nearly half of the colleges involved actually closed before 1990 and so had no real opportunity to enjoy the educational options made possible by the Internet. Martin and Samels (2009) point out the difference between ‘online courses’ versus ‘online programs’. They also mention that this factor is an indicator of cultural conditions that are too resistant to change toward adopting new trends such as online education (p. 18). It is the linkage to the other indicators through the effect of cultural conditions more than whether or not the Internet was available that is being measured by this indicator. There is a strong linkage between this indicator and the next one on the basis of the more open question of “Any new

program” and the fact that in the data gathered by this researcher there are no instances of a college developing a new online program to save itself when the Internet was available. There are however, instances of colleges developing new programs (or trying to) for classroom delivery during the years that the Internet was available. Again, this seems to be more likely related to cultural systems being too resistant to new ideas.

The seventh indicator with a statistical significance at the .05 level was Question 18 from the condensed list of indicators from the Review of Related Literature. That question asks, “Has at least one new degree or certificate program not been developed in the last 2 years?” The ability to create new degree programs and experience with designing new degree programs is the best tool to have on hand when vulnerable times are upon the institution (Martin and Samels, 2009, p. 19). This indicator has linkages back to most of the others through connections to enrollment, endowment, retention and conversion yield. As mentioned before, if there is a sudden new demand for a specific degree program and the institution does not have the endowment to pay for the development of that program then the new students will go somewhere else.

The eighth indicator with a statistical significance at the .05 level was Question 24 from the condensed list of indicators. That question asks, “Is the number of FTF falling as enrollment falls, or as PTF rises?” Manion (2007) says “The proportion of full-time professors teaching classes is a better indicator of both educational quality and institutional health than the amount that faculty members are paid” (para. 13). This indicators links to others through matters related to enrollment. There is also the question of cultural influence, the question of quality of education and the perception that too

having many part-time faculty members will drive down the quality of education. This is still a hotly disputed issue driven by administrations forced to find less expensive ways to operate in an environment where students believe that a full time professor is more quality driven than a part time professor (California Performance Review, 2009).

The ninth indicator with a statistical significance at the .05 level was Question 25 from the condensed list of indicators from the Review of Related Literature. That question asks, “Does tuition discounting exceed the average for type of college and geographical area?” Manion (2007) points out that the discount rate is a measure of how much of the institution's own money it is spending to attract students and includes only those students accepted for admissions, which is a better indicator than acceptance rate (para. 12). Discount is actually taken not out of the institutions own money but rather out of money that the institution could have earned. Because of that, the institution actually has to absorb the lost revenue up front, but then has to go on to provide the services associated with operations. Over half of the colleges in this study engaged in discounting of over 35% in the last few years of operation. For some of them, that exorbitant discounting led to the loss of their accreditation, their ability to collect endowment donations, federal aid, student loan programs, etc.

The tenth indicator with a statistical significance at the .05 level was Question 31 from the condensed list of indicators. That question asks, “Does the leadership separate from collaborators in difficult times by restricting access to financial information and/or does the board take a less active role in the core financial issues?” Putnam (1996) and MacTaggart (2007) agree that this is important because the President of the college will

feel comfortable discussing financial problems with the board only when the college is in good financial standing. As problems become worse the President will become more secretive about the problem finances in order to keep the good support of the board (MacTaggart, 2007, p. 12, 13). This indicator links back to other indicators that involve cultural systems controlling operational issues. The condition associated with this indicator could easily be removed by requiring the president to provide the board with a biannual financial health report.

Discussion of Indicators Significant at the .001 level

The first indicator with a statistical significance at the .001 level was Question 2 from the condensed list of indicators. That question asks “Is debt service more than 10% of the annual operating budget?” The point is that if 10% the operating budget is spent on interest on loans, then the college is demonstrating an inability to manage its debt load. Debt service should be less than 10% of the operating budget, and it should be decreasing on average. As debts are paid off, debt service and debt load will both decrease while net assets will increase. This indicator is important because it points to the limit where the institution can typically manage its own debt and still be able to afford maintenance and other basic financial functions (Martin and Samels, 2009, p. 11). Significance at the .001 level indicates that the difference between the mean of the dependent variable (the totals of Yes answers to each question for each college) and the mean of each independent variable (Yes answers to each question) was small enough to not have been caused by chance alone and that the indicators do very likely reflect the root causes of colleges being forced to close.

The second indicator with a statistical significance at the .001 level was Question 6 from the condensed list of indicators. That question asks, “Is deferred maintenance at least 40% unfunded?” This indicator links to the previous indicator significant at the .001 level because, if the debt load exceeds the 10% level of the operating budget, cuts will probably have to be made in maintenance and upgrading facilities. Martin and Samels (2009) say that an unfunded backlog of maintenance that is approaching 50% is one of the strongest indicators of institutional fragility. One fourth of the colleges in this study have Catholic affiliations. Studies done on Catholic based colleges show that they have little or no endowment, they are tuition dependent, and simply cannot afford to have 10% of their operating budget allocated to debt service (Zimmerman, 2008). Catholic colleges will be forced to cut spending on maintenance if their debt service exceeds the 10% limit. Hebel (2006) points out that declining maintenance will fail to attract full time students and will fail to keep those currently enrolled (paras. 8, 9, 10). The linkage to tuition dependency, maintenance, enrollment, and retention have a snowball effect when debt service causes students to not come back because of cuts in spending on maintenance and grounds keeping due to growing debt load.

The third indicator with a statistical significance at the .001 level was Question 11 from the condensed list of indicators. That question asks, “Is the conversion yield 20% behind that of primary competitors?” Martin and Samels (2009) say this condition indicates the inability to provide competitive customer service while maintaining limited resources and staff support (p. 15).

The fourth indicator with a statistical significance at the .001 level was Question 21 from the condensed list of indicators. That question asks, “Is the ratio of net assets to total expenses decreasing?” The desired effect is to have the institutional net assets increasing while total expenses decrease. One of the primary factors in that process is to have overall debt load decrease which requires that the institution operate within its capital budget. Net assets may also be referred to as Primary Reserve. Manion (2007) says that if the institution is managing its resources properly then Primary Reserve will increase because total expenses will diminish in relation to total assets (para. 14). A successful college will accumulate new large assets such as buildings and should be able to do so while also effectively paying off the debt associated with those acquisitions. Maintenance and upkeep will retain the value of those acquisitions.

The fifth indicator with a statistical significance at the .001 level was Question 22 from the condensed list of indicators from the Review of Related Literature. That question asks, “Is the ratio of primary assets to total debt decreasing?” The ratio of primary assets to total debt is known as Viability. Manion (2007) says that if the institution is managing its resources properly then Viability will increase because total debt will diminish (be paid off) in relation to primary assets (para. 14). This indicator has a link to the previous indicator significant at the .001 level and to the next indicator. Debt reduction is the key to survival during difficult financial times and for success during good financial times. Too much debt carried forward from difficult times can prevent growth of assets during good financial times by forcing capital to be devoted to debt reduction (MacTaggart, 2007, para. 7).

The sixth indicator with a statistical significance at the .001 level was Question 23 from the condensed list of indicators. That question asks, “Is the ratio of debt service to total expenses > 10% and increasing?” The ratio of debt service to total expenses is known as Debt Burden. Manion (2007) says that if the institution is managing its resources properly then Debt Burden will decrease because debt service (interest paid) will diminish in relation to total expenses because loans will be paid off and capitalized by permanent resources (para. 14).

The seventh indicator with a statistical significance at the .001 level was Question 30 from the condensed list of indicators from the Review of Related Literature. That question asks, “Does the institution struggle with a combination of increasing debt and a decreasing endowment?” MacTaggart (2007) discovered that colleges that came back from the brink of disaster did it by building the endowment, making the campus attractive to students in order to improve retention, and by adding new programs to draw new students (para. 7-9). This indicator links to the previous 6 indicators through prominent financial aspects of institutional operations. The relationship of the 7 indicators statistically significant at the .001 level reinforces the appropriateness of Howard Bowen’s revenue theory of cost (*The Costs of Higher Education*, 1980) and Bates and Santerre’s for profit theory of economics (*A Time Series Analysis of Private College Closures and Mergers*, 2000) applied to non-profit colleges. Bowen’s assertions set out in his theory explain the strong links between these most significant indicators in the sense that they have done exactly what Bowen’s theory says they do. The end result is that they always have spent all of the money they can get, and when hard times come,

they have no money to subsist on until their financial condition improves. They also have no money to make necessary changes and improvements when financial times do improve.

Conclusions

Conclusions regarding the probable indicators of a 4-year, non-profit, private college or university being forced to close are that virtually all of the indicator questions found to be statistically significant in this study have direct links to the theory base of this study. The rest of the indicator questions exhibit degrees of statistical insignificance.

There appear to be 2 groups of indicators in this researcher's opinion. The first group is that set of indicators statistically significant at the .05 level. These indicators are shown as significant by the statistical analysis as very unlikely to be caused by chance alone.

The second group is those indicators statistically significant at the .001 level. This level of significance indicates that the outcomes were much more likely to not have been the result of chance alone than the indicators significant at the .05 level.

Both groups conform to the Bowen revenue theory of cost associated with the operations of colleges and universities. However, the first group also has a cultural condition or cultural values component observed by a number of the experts cited in this study. The second and more significant group is very tightly associated with Bowen's revenue theory of cost and Bates and Santerre's for profit theory of economics.

There about 6 colleges and/or universities per year, which are forced to go defunct in the United States that fit this category of research. Of those colleges, according to the

expert observers cited in this study, many of those colleges probably did not need to close but could have been “turned around” with expert intervention.

There were thirty one original indicator questions used to generate the dataset for this study. Only 17 of those indicators were found to be statistically significant. The implication is that the fourteen indicators found to be statistically non-significant are used by practitioners in higher education with an inappropriate level of importance to stability and success.

As mentioned previously in this document Robert C. Andringa (Martin and Samels, 2009), once served as the president of the Council for Christian Colleges and Universities (CCCU). He suggested that Martin and Samels test their list of indicators synthesized from the contributions of their “Associates” in 13 of the 16 chapters of their book *“Turnaround: Leading Stressed Colleges and Universities to Excellence”*. As a result Andringa conducted a study using a Web based survey instrument. He asked one hundred presidents of non-profit, 4 year, colleges to indicate how strongly they agreed with the relevance of each indicator in Martin and Samels list using a 5 point scale where a 1 indicates “strongly disagree” and a 5 indicates a “strongly agree”. 54 presidents responded. The top 5 indicators according to their ratings were:

- Institution is on probation, warning, or financial watch with regional accreditor or a specialty degree licenser (4.35)
- Short-term bridge financing has been required in the final quarter of the last 5 fiscal years (4.0)
- Deferred maintenance is at least 40 percent unfunded (3.89)

- Majority of faculty do not hold terminal degrees (3.87)
- Debt service is more than 10 percent of the annual operating budget (3.76) (p. 175)

3 of the top 5 indicators identified by Andringa match to 3 of the 7 most significant indicators identified in this study. One of the other indicators matches to 1 of the 10 indicators found to be significant at the .05 level.

1. Debt service is more than 10 percent of the annual operating budget (3.76) (Martin and Samels, 2009, p. 175)
2. Deferred maintenance is at least 40 percent unfunded (3.89)
3. The ratio of debt service to total expenses is > 10% and increasing

The ratio of debt service to total expenses links strongly to the ratio of debt service to the operating budget through the fact that the operating budget comprises the bulk of total expenses. Deferred maintenance being at least 40% unfunded is a direct match to the list of indicator questions for this study as well as the debt service being more than 10% of the operating budget which is also a direct match.

The other matching indicator identified by Andringa found to be statistically significant at the .05 level in this study is:

1. Has a trend developed for short-term bridge financing being required in the final quarter of the fiscal year?

This close association between the results found by Andringa and the results of this study provides supportive evidence for the results of this study. The list of indicator questions used by Andringa was not as fully worked out as was the list used for this

study. The one result found by Andringa that did not match strongly with this study did have a linkage to the cultural value system mentioned by experts mentioned in this study. Presidents of Catholic based colleges are strongly of the opinion that a major problem in their survival is the fact that too many of their professors do not hold terminal degrees. The results of this study show this indicator question to be statistically insignificant at the level of .591 showing that this would appear as a result only because of chance or some other reason such as the responding participants believing in unfounded cultural values. The indicator for a ratio of professors having terminal degrees came only from this group and was not offered as an indicator by any experts or other sources or participants in this study. This indicator also does not fall within the logical realm of the theory base for this study since it has nothing to do with the revenue theory of cost provided by Bowen, and it has nothing to do with the profit theory of economics offered by Bates and Santerre.

Recommendations for Future Research and Practice

As mentioned in the list of conclusions for this study, there were 14 indicator questions deemed very important to success by professionals and consultants in higher education. Many of those indicators are used by accreditation councils, financial institutions, governmental institutions, consumer groups, legislative bodies and others to make fundamental decisions impacting higher education on a large scale. Future research needs to be conducted to investigate the effect of the use of those indicators and to educate those entities who are informed by those indicators to effect change.

Of those 14 indicators determined to be statistically not significant in this study some are of prominent long term standing in higher education as well as business. One

of those indicators is addressed by the question of whether or not a specific institution has a viable strategic plan or the leadership to successfully design and implement a strategic plan. This researcher has observed a high incidence of lack of planning not only in the closed institutions in this study but in institutions that are apparently successfully functioning. A possibly meaningful indicator that would link to strategic planning and then possibly back to the theory base of this study would involve an investigation into administrative turmoil in the last ten years of the life of the defunct colleges. This researcher noticed that many of these colleges had as many as 6 different presidents in their last 10 years and several of these colleges even went for as many as 2 years with no official president at all. The link to strategic planning would be through the lack of an established president, who has had time to design and implement a strategic plan. According to many experts in higher education, no less than 5 years is required to accomplish the establishment of a viable strategic plan. Having more than 2 presidents in a 10 year period would indicate, by definition, the lack of a viable strategic plan. Throughout the research for this study there are numerous accounts of a new president abolishing the strategic plan left behind by the outgoing president. This researcher strongly recommends that this linkage through administrative turmoil to a viable strategic plan on the one hand and to the 17 statistically significant indicators on the other hand be studied intensely by future researchers.

Also of concern for future research and practice is the belief and opinion of many experts in higher education that an “old” faculty or an “old” administration is also an entrenched and unchanging stumbling block to the stability and success of an institution.

The indicator question of “is the average age of the full time faculty 58 or higher?” comes from opinions of experts who believe that older professors simply do not understand the world that younger people live in. Martin and Samels (2009) say that there is an emergence in “middle tier institutions of a professoriate that is becoming increasingly disconnected from the lifestyles and learning styles of current students” (p. 18). This researcher recommends that future research be done to determine the truth and importance of this belief. Points that could be elaborated on might: “Do older professors provide a stabilizing and perpetuating effect on higher education that is probably not available through any other channel?”; “Do younger people benefit from an experience that is seen as primarily educational at least in part because of an apparent age difference between faculty and students?”; “Is there a danger to higher education by virtue of conversion to a social experience (rather than educational) when the professors on average are much closer in age to the students?”. For practitioners it should be informative to learn that this indicator was found to be statistically insignificant in this study. The age of the college, the age of the staff, faculty or administrators really had no bearing on the findings for this study.

Intense interest in this topic continues primarily because of the impact on our society. The *Chronicle of Higher Education* recently (13 Reasons Colleges Are in This Mess, March 13, 2009) published a list of thirteen reasons that colleges are in their present financial predicaments. The first reason suggested was that colleges make too many risky investments with endowment funds. None of the colleges in this study

practiced investing endowment funds in risky ways and in fact the majority of the colleges had little or no endowment to invest.

The second suggestion for troubled conditions was that too many boards of trustees were simply not involved enough in the operations of their institutions. This point was actually tested by this study as indicator question 31 and was found to be statistically significant at the .05 level.

The third suggestion was that too many colleges rely on cheap credit to make it from one year to the next. This point was tested by this study as indicator question 7 and found to be statistically significant at the .05 level.

The fourth suggestion was that the high cost of faculty unions and their unwillingness to accommodate demands were a dangerous threat to stability. In fact, none of the colleges in this study exhibited or reported this problem and many even had a majority of faculty who agreed to substantial pay cuts, many hours of overload classes to teach, extra work assignments in the cafeteria, mowing lawns, etc. This point was also not identified by any of the experts in higher education as a threat to the life of a college or university. According to the *Chronicle of Higher Education* (NLRB Lets Stand a Decision Allowing Professors at a Private College to Unionize, July 7, 2000) the National Labor Relations Board has shown increasing flexibility in allowing private colleges to unionize their faculty as long as the faculty do not have functional managerial powers. In another article the *Chronicle of Higher Education* (NLRB Office Approves Union at a Private Tennessee College) observes that faculty unions are often created when the

faculty becomes galvanized by administrative refusals to allow faculty to participate in meaningful managerial decisions.

The fifth, sixth, eighth, eleventh and twelfth suggestions were that colleges have fallen into the trap of overbuilding for various reasons and that they can now not pay the debt that they assumed by over committing their budgets during “good times”. This point is directly related to the theory base of this study as Bowen’s revenue theory of costs that clearly states that this is exactly what colleges and universities do. These points were all tested by this study as indicator questions 2, 6, 7, 21, and 22. Those indicators were all found to be statistically significant at the .05 level or better.

Suggestion 7 from the *Chronicle* article is that during difficult economic times the amount of federal aid diminishes to the point that it causes operational distress for colleges. This point was not defined in this study as an indicator question. This researcher would recommend that future research could be conducted to determine the relative impact of dependency on federal aid and that association with colleges that are forced to close. In this study, it was found that the loss of accreditation and the subsequent loss of federal aid and even the loss (in some cases) of the right to conduct fund raising campaigns was not a statistically significant indicator question. For example, indicator question 13 for this study asked whether or not the institution was on probation, warning, or financial watch with a regional accreditor or a specialty degree licenser. That indicator question was found in this study to be statistically insignificant at the level of .068. It may be possible that with a modified population and a larger sample such an indicator would become statistically significant.

The ninth and tenth suggestions were that the colleges have failed to find a niche that serves the needs and demands of their customers. This point was addressed by this study in indicator questions 17, 18 and 19. A trend to fail to create new programs as they are needed to prepare students to move on into more complex educational situations (nursing preparatory, police, EMT, etc.) is a link to failure. Indicator questions 17 and 18 were both found to be statistically significant at the .05 level in this study. Associated with these questions but found to be not significant was the question of the college creating new programs in less than 2 years (indicator question 19).

The thirteenth and last suggestion in the *Chronicle of Higher Education* (13 Reasons Colleges Are in This Mess, March 13, 2009) article is that colleges and universities have compounded their problems by failing to cooperate with federal initiatives to build accountability into the finances of higher education. One of the points mentioned is the default rate on guaranteed student loans. In fact, the federal records on student loan default rates shows a steady decline since the 1960s due to the efforts of colleges and universities. This occurred with no assistance from the federal government other than efforts to lift the accreditation of colleges that exceed specific levels of student loan default. The default rate at the national level was 22.4% in 1990 and that had fallen to 8.8% by 1999 (Keynes, 1999, para. 7) due to the efforts of college and university officials, who tightened up requirements for students and in some cases even dropped out of the federal student loan program. Future research should be conducted to clarify the assumption that student loan default rates should be used to determine the worthiness of a college to be accredited or not.

Another recent article in *the Chronicle of Higher Education* (More Than 100 Colleges Fail Education Department's Test of Financial Strength., June 12, 2009, para. 14) mentions a formula designed and utilized by the U. S. Department of Education that generates a composite score based on 3 ratios that take into account debt load, total expenses relative to total income, and the net assets of the institution. This researcher believes that the colleges in this study would probably fail the test. At the same time, this researcher also believes that the test used by the D.O.E. is incomplete and is administered with incomplete relation to other necessary indicators. These features are covered directly and, by linkages, to other indicator questions within this study. For example, the 7 indicator questions found by this study to be statistically significant at the .001 level all relate directly to this sort of comparison of ratios. Those questions relate to debt service versus total operating budget (Coverage), debt service versus total expenses (Debt Burden), the ratio of primary assets to total debt (Viability), and the ratio of net assets to total expenses (Primary Reserve). This researcher would like to liken the relationship of these indicators as a set of gears meshing together. The gears are tightly coupled so that if one gear turns the other 6 gears must turn as well. An unusual characteristic that these gears have is that their physical properties may change. The diameter of a gear may change (enrollment may increase making the diameter increase, or enrollment may decrease making the diameter decrease), the speed that a gear turns at may also change (The number of programs may increase, which may increase the conversion rate making the speed increase, or programs may be cut which would slow the speed). If a gear gets

stuck, then the entire system becomes a failure and the college closes. The challenge is to keep the gears all meshing in an appropriate fashion.

APPENDIX

LIST OF DEFUNCT COLLEGES INCLUDED IN THE STUDY

List of 40 closed, 4-year, non-profit, private colleges used as the population in this study:

	College Name	Year Opened	Year Closed	Location	Affiliation
1	Nasson College	1912	1983	Springvale, Maine	None
2	Barat College	1858	2005	Chicago, Illinois	Roman Catholic
3	Franconia College	1963	1978	Franconia, N.H.	None
4	Northrop University	1942	1993	California	None
5	Woodstock College	1869	1974	Woodstock, Maryland	Jesuit
6	Barrington College	1900	1985	Barrington, R.I.	Evangelical Christian
7	Mount Vernon College	1875	1999	Washington, D.C.	None
8	George Williams College	1966	1985	Downers Grove, Illinois	None
9	NAES College	1974	2005	Chicago, Illinois	None
10	Ambassador College	1947	1997	Pasadena, California	Worldwide Church of God
11	Columbia Pacific University	1978	2000	Marin County, California	None
12	Eldorado College	1961	1997	Escondido, California	None
13	Bishop College	1881	1988	Dallas, Texas	Baptist
14	University of Albuquerque	1946	1986	Albuquerque, New Mexico	Catholic
15	Phillips University	1906	1998	Enid, Oklahoma	Disciples of Christ
16	Bradford College	1803	1999	Haverhill, Mass.	Independent
17	Trinity College	1975	2000	Burlington, Vermont	Roman Catholic
18	Vennard College	1910	1995	University Park, Iowa	Interdenominational
19	Upsala College	1893	1995	East Orange, New Jersey	Lutheran
20	Yankton College	1881	1984	Yankton, south Dakota	United Church of Christ

(list continued)

List (continued)

21	Daniel Payne College	1889	1979	Birmingham, Alabama	HBCU
22	Southern Benedictine College	1929	1979	Cullman, Alabama	Catholic Benedictine
23	St. Mary of the Plains	1952	1992	Dodge City, Kansas	Catholic
24	Marycrest International University	1939	2002	Davenport, Iowa	None
25	World College west	1973	1992	Marin County, California	None
26	Milton College	1844	1982	Milton, Wisconsin	None
27	William Tyndale College	1945	2004	Farmington Hills, Michigan	Nondenominational Christian
28	Westmar College	1940	1997	LeMars, Iowa	United Methodist Church
29	Mount Scenario College	1962	2002	Ladysmith, Wisconsin	Unknown
30	Jordan College	1967	1995	Cedar Springs, Michigan	None
31	Notre Dame College	1951	2002	Manchester, New Hampshire	Roman Catholic
32	Alliance College	1903	1988	Cambridge Springs, Pennsylvania	None
33	Margaret Morrison Carnegie College	1906	1973	Pittsburgh, Pennsylvania	None
34	Spring Garden College	1851	1992	Spring Garden, Pennsylvania	None
35	College of Saint Teresa	1907	1989	Winona, Minnesota	Catholic
36	Ricker College	1848	1978	Houlton, Maine	Unknown
37	Finch College	1900	1976	Manhattan, New York	None
38	Bennett College	1890	1978	Millbrook, New York	None
39	Mary Manse College	1922	1975	Toledo, Ohio	Catholic
40	Duns Scotus College	1930	1969	Southfield, Michigan	Word of Faith

(list continued)

List (continued)

ALT	Tift College	1849	1987	Forsyth, Georgia	Georgia Baptist Convention
ALT	Mount Sacred Heart College	1946	1997	Hamden, Connecticut	Catholic
ALT	Detroit Institute of Technology	1891	1982	Detroit, Michigan	YMCA

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