Entrepreneurial Leadership and Activities of Academic Deans in Independent Colleges and Universities: An Explanatory Sequential Mixed Methods Study

Shannon Cleverley-Thompson
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Entrepreneurial Leadership and Activities of Academic Deans in Independent Colleges and Universities: An Explanatory Sequential Mixed Methods Study

Abstract
The purpose of this mixed methods sequential explanatory study was to examine the role of academic deans in entrepreneurial activity in upstate New York independent colleges and universities. Higher education institutions are facing difficult economic times which can place financial pressure on leaders in colleges and universities to seek out alternate funding sources through entrepreneurial endeavors. Academic deans are in a vital leadership position to engage in revenue generating activities when faced with limited resources. The quantitative results of this study suggest that academic deans’ self-perceived entrepreneurial orientation decreased the longer they are in their position. The quantitative results also suggest that some academic deans who were expected to engage in entrepreneurial activities, as part of their job description, have a higher self-perceived entrepreneurial orientation. The themes that emerged from the qualitative found that the collective accountability of academic deans and their skills in collaborative relationship building may impact their ability to engage and develop entrepreneurial activities. This study offered practical knowledge to academic leaders in higher education by identifying a new conceptual approach of a process on how academic deans can create new revenue sources for their institution. Several recommendations were described to assist institutions in reducing financial challenges, such as adopting a de-centralized budget model and developing a reward structure for entrepreneurial academic deans.

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Entrepreneurial Leadership and Activities of Academic Deans in Independent Colleges and Universities: An Explanatory Sequential Mixed Methods Study

By

Shannon Cleverley-Thompson

Submitted in partial fulfillment of the requirements for the degree Ed.D. in Executive Leadership

Supervised by
Dr. Arthur L. Walton, Jr.

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August 2011
Dedication

The path to earning a doctorate degree always must include a supportive team of individuals. I sincerely thank my dissertation chair, Dr. Arthur “Sam” Walton for his inspiration, wisdom, and contribution to my scholarship development. I also appreciate his patience and sense of humor during my moments of stress and confusion, which kept me motivated to stay the course and finish strong. Dr. Walton’s leadership experiences in higher education were appreciated and essential in the development and completion of this dissertation. I must also thank my committee member, Dr. Dianne Cooney-Miner, for her gentle guidance and insightful perspective, which pushed me into a deeper level of understanding of my qualitative data. She has an amazing skill of helping me transform the ambiguity of my thoughts into understandable and intelligible words on paper. Thank you Dr. Walton and Dr. Cooney-Miner, for allowing me to conduct a mixed-methods dissertation; it was a decision that has provided me with valuable skills and experiences in my scholarship and research career.

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and Dr. John Travers for his valuable feedback in the first year. I also extend my thanks to Dr. Gerry Rooney for his constant support and sharing of resources, as well as feedback on the development of my survey.

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This dissertation is dedicated to my sons, Spencer Philip Thompson and Ramsey Roy Thompson. The unconditional love and hugs they provided throughout my dissertation journey was inspirational and provided me with great comfort. May they each enjoy an amazing journey of learning in life and never stop dreaming they can reach the stars.
Biographical Sketch

Mrs. Shannon Cleverley-Thompson attended Washburn University from 1990 to 1994 and graduated with a Bachelor of Arts degree in 1994. She attended The University of Kansas from 1995 to 1996 and graduated with a Masters of Education degree in 1996. She came to St. John Fisher College in the summer of 2009 and began doctoral studies in the Ed.D. Program in Executive Leadership. Mrs. Cleverley-Thompson pursued her research in Entrepreneurial Leadership of Academic Deans under the direction of Dr. Arthur “Sam” Walton and received the Ed.D. degree in 2011.
Abstract

The purpose of this mixed methods sequential explanatory study was to examine the role of academic deans in entrepreneurial activity in upstate New York independent colleges and universities. Higher education institutions are facing difficult economic times which can place financial pressure on leaders in colleges and universities to seek out alternate funding sources through entrepreneurial endeavors. Academic deans are in a vital leadership position to engage in revenue generating activities when faced with limited resources.

The quantitative results of this study suggest that academic deans’ self-perceived entrepreneurial orientation decreased the longer they are in their position. The quantitative results also suggest that some academic deans who were expected to engage in entrepreneurial activities, as part of their job description, have a higher self-perceived entrepreneurial orientation. The themes that emerged from the qualitative found that the collective accountability of academic deans and their skills in collaborative relationship building may impact their ability to engage and develop entrepreneurial activities.

This study offered practical knowledge to academic leaders in higher education by identifying a new conceptual approach of a process on how academic deans can create new revenue sources for their institution. Several recommendations were described to assist institutions in reducing financial challenges, such as adopting a de-centralized budget model and developing a reward structure for entrepreneurial academic deans.
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Chapter 1: Introduction

Problem Statement

The nation has undergone a serious decline in the economy over the past three years and, according to the National Bureau of Economic Research, entered into a recession in 2007 (Thornton, 2009). The weak economy, combined with demographic changes, a reduction in high school graduates in several states, and shrinking enrollments in many colleges and universities, presents significant challenges for higher education institutions in New York state and the nation (Thornton, 2009; Edirisooriya, 2003; Smith, 2004; New York State Education Department, 2009). In order to meet these challenges and maintain a competitive edge, leaders in higher education institutions will need to employ different revenue generating activities to attract new students, stay competitive, and make positive financial impacts for their college or university (Eckel, 2007). Higher education leaders, such as deans of academic programs, are in a key position to engage in entrepreneurial activity when faced with limited resources (Krahenbuhl, 2004).

Based on the research of Clark (1998, 2000, 2004), leaders in colleges and universities need to acquire entrepreneurial skills in order to meet the changes of a dynamic and competitive environment if they are to be successful. Higher education institutions that develop and participate in revenue generating activity will need deans who have entrepreneurial characteristics. Academic deans who can develop entrepreneurial groups within a School of Business or Education may be in a position, according to Clark (2008), to transform colleges and universities into entrepreneurial
organizations that are better equipped at adapting to changes. According to Wolverton & Gmelch (2002), academic deans need to be both leaders and managers, and those who lead successfully must “relate external demands to internal endeavors in a manner that moves their college into uncharted waters” (p 7).

To help address the challenges of a dynamic environment, colleges and universities may benefit from understanding more about the entrepreneurial leadership of academic deans in relation to successful entrepreneurial activity. This study provides a better understanding of the relationship between the self-perceived entrepreneurial orientation of academic deans in Upstate New York and entrepreneurial activity, in the form of partnerships, academic programs, intellectual capital, and small business development. This study also examined how academic deans acquire an entrepreneurial orientation and the management strategies they use to create creating and develop revenue generating activities.

College boards and presidents in higher education may encourage an institution to engage in entrepreneurial activity as a way to generate additional revenue and stay competitive. An academic dean can be in a position to oversee the operations of entrepreneurial activities as well as to create new sources of revenue. In addition, the projected changes in enrollment and decline in the economic environment may put even more pressure on academic deans to be entrepreneurial and increase revenue for the college. The research problem addressed the role of an academic dean on entrepreneurial activities in higher education.
Many different entrepreneurial theories and definitions emerged from the economics disciplines. In the early eighteenth century, Richard Cantillon first used the word “entrepreneur” as a person who “exercises business judgments in the face of uncertainty” (Hebert & Link, 1988, p.42). Cantillon, who developed the first entrepreneurial framework and set the road for future study in the field, believed the source of entrepreneurship was in the ability to have perfect insight and that entrepreneurs were people who dealt with uncertainty and ambiguity in making economic decisions every day (Hebert & Link). Other entrepreneurial frameworks emerged from economic theorists such as Joseph Schumpeter and T.W. Schultz, each with a slightly different entrepreneurial theory (Hebert & Link).

Shultz defined entrepreneurial ability as a form of human capital (Klein & Cook, 2006) and argued that entrepreneurship was present in every aspect of life, demonstrated by many different people. Schultz (1980) described entrepreneurship as a part of all individual behavior, rather than only performed by expert groups. He believed this ability was enhanced by experience, education, and health and that everyone was capable of supplying entrepreneurship when there was a demand for it (Schultz). Using Schultz’s conception of entrepreneurship, people at different organizational levels, such as college presidents, provosts, or academic deans could be seen as entrepreneurial agents.

A report of entrepreneurship in the field of higher education published in 2009 by the Association for the Study of Higher Education [ASHE] outlined different entrepreneurial theories and frameworks to bring about a better consensus of academic entrepreneurial research (ASHE, 2009a). The report identified Schultz’s framework as
the most useful way to describe entrepreneurship in higher education because it defined individuals in academia as people who “invest their human and intellectual capital in creative and innovative strategies for gaining stability in the academy and in certain circumstances, the external markets that surround colleges and universities” (ASHE, p. 13). Schultz presents a useful way to analyze entrepreneurship in higher education in the context of the current challenges of changes in student enrollment, limited and shrinking resources, and governments asking for more accountability from colleges and universities (ASHE). The framework provided by Schultz also allows entrepreneurship to be theoretically understood as a “constant, proactive variable in contemporary postsecondary education environment” (ASHE, p. 13).

A more recent entrepreneurial framework emerged in 2000 and has been applied to several research studies in the field of higher education (Clark, 1998, 2000, 2004). Similar to Schultz, Clark believed that entrepreneurship needed to be constant and proactive for an institution to become more entrepreneurial. Based on Clark’s framework, entrepreneurism is a method universities can use when experiencing change or planning for change. An entrepreneurial university, according to Clark, was one whose leadership takes risks by starting new initiatives when the outcome was unknown and constantly works on innovating strategies and actions that lead to organizational changes. According to Clark (1998), “collective entrepreneurial action” is when “groups, large and small – central and departmental – of faculty and administrators (and sometimes students) can fashion new structures, processes, and orientations whereby a university becomes biased toward adaptive change” (p.4). Collective entrepreneurial action is effective when it creates “resources and infrastructures that build capacity beyond what a university would
otherwise have, thereby allowing it to subsidize and enact an up-market climb in quality and reputation” (p.5). Thus entrepreneurship in the field of higher education could involve schools, departments, or the entire campus and may need the leadership of all levels of an institution -- from president to academic deans -- and could even involve the students.

This study was guided by the theoretical entrepreneurial perspective of Schultz (1980) and Clark (1998, 2000, 2004)) within the context of independent colleges and universities in Upstate New York State. This study explored whether a relationship exists between the entrepreneurial orientation of academic deans and successful entrepreneurial activity. The Clark framework suggests that if universities adopt certain elements and concepts of transformation they can become more entrepreneurial and better able to adapt to changes. This theoretical perspective also helped guide the investigation of how academic deans develop an entrepreneurial orientation, and how they create and manage entrepreneurial activity within their institutions.

Significance of the Study

The challenges faced by colleges and universities are compounded in the case of independent colleges and universities because of their reliance on tuition and fees as a main source of revenue. Any decline in the economic environment puts more pressure on independent colleges and universities as they work to convince parents, high school graduates and returning adults to spend more money on a private rather than a public college degree (Stimpert, 2004). As a result, independent colleges have additional pressures to verify and to measure student learning in order to validate high tuition costs (Stimpert).
Liberal arts colleges, especially small colleges, are all competing with the same donors to receive financial support, and according to Stimpert (2004) some may need to evaluate their course offerings in order to compete with for-profit institutions by offering night, weekend, or distance education courses. These issues may be some of the reasons why many colleges and universities are developing a brand and marketing position in order to have a more creative edge in the field of enrollment management in higher education (Kalsbeek & Hossler, 2009).

Independent educational institutions may find meeting enrollment goals another challenge in the near future. The traditional college student population will soon be changing (Digest of Education Statistics, 2008). The change stems from the significant number of white, non-Hispanic high school graduates decreasing and a large number of Hispanic high school graduates increasing over the next ten years (Western Interstate Commission for Higher Education ([WICHE], 2008). Some states will experience a growth of high school graduates of more than 30% due to this change, but 20 states will experience a 5% or more decrease (Digest of Education Statistics, 2008). Decreases in high school graduates could impact the traditional college student enrollment at degree-granting institutions (Digest of Education Statistics, 2008). These projected enrollment changes may cause an even more competitive market between institutions in higher education (WICHE, 2008; Commission on Independent Colleges and Universities [CICU], 2007).

According to the CICU projections (2008), New York State will soon experience a decline in the number of high school graduates, specifically white, non-Hispanic and African American students. Even accounting for an expected increase in minority
(Hispanic and Asian) graduates, New York State is still projected to have an estimated 14.5% net decrease in the number of high school graduates between 2008 and 2014 (CICU, 2008). Yet, the New York State Education Department (2009) projected the decline for the state to be even higher at 16.5% and extended the decline to continue to 2018, given the additional data collected over the last two years. This decrease of high school graduates is different across the state, with New York City expected to have a 19.8% decrease and the rest of the state to experience a 14.9% decline (NYSED, 2009).

Compounding this projected decrease is the fact that a majority of the independent colleges and universities in New York rely on tuition for more than 66% of total revenue (CICU, 2008). In 2008, CICU reported that 72 of these independent institutions rely on tuition to meet 67% to 100% of their operating expenses. Thus any decline of students’ directly entering college from high school will not only impact enrollment goals but also negatively impact institutional revenue in many of New York’s independent educational institutions. The projected enrollment decreases in independent colleges and universities in New York along with the declining economic environment will force institutions to become more competitive in order to attract students and meet financial goals. Eckel (2007) points out that competition in higher education is not going away and may end up becoming stronger and occur at a faster pace in the future. In some parts of the country economic pressures, needs from society, and changes in student markets have resulted in colleges and universities becoming more entrepreneurial (Breneman, 2005). Developing an entrepreneurial orientation and engaging in revenue-generating activities may be possible solutions colleges and universities choose to employ as a way to address financial challenges.
Several studies reveal that some college presidents find success when engaging in entrepreneurial practices and behavior (Fisher and Koch, 2004; Peck, 1984; Riggs, 2005, Smith, 2009). Yet, little is known about how the leadership of others in the field of higher education may impact entrepreneurial activity in colleges and institutions. If one accepts Clark’s entrepreneurial framework (2000, 2004) as a key to successful entrepreneurship, then knowing how other leaders on campus, such as academic deans, contribute and support revenue-generating activity can be valuable to colleges and universities struggling financially. In many independent institutions, academic deans are expected to be the leaders who develop and execute entrepreneurial activities. Academic deans tend to primarily work and support two groups of people in an institution, “senior administration and faculty,” thus they hold influential roles in the development and success of entrepreneurial activities (Rosser, Johnsrud, and Heck, 2003, p. 2).

This study provides academic deans with knowledge about which characteristics could help expand their entrepreneurial abilities to meet financial challenges. In addition, the results from this study provide strategies to assist some academic deans in becoming more entrepreneurial to help address the current challenges of institutions in Upstate New York. This study may assist some academic deans in gaining a better understanding of the processes employed by other deans to increase revenue. If an academic dean is expected to develop new revenue sources as part of their job responsibilities, this study may serve as a resource on how other academic deans in Upstate New York are engaging in that type of work.

In response to financial challenges and recessions, higher education institutions seem to raise tuition and put the additional revenue on the students and parents
(Toutkoushian, 2003). Yet, with tuition increasing faster than inflation, eventually these students and parents may not be able to shoulder this financial burden of some colleges and institutions (Toutkoushian), and additional sources of revenue need to be established. Other academic leaders who can successfully create multiple sources of revenue may be able to act more quickly in responding to challenges, such as an uncertain economy and decreases in student enrollment (Clark, 2000). Yet, not all leaders in higher education institutions are knowledgeable or experienced in developing entrepreneurial initiatives and activities.

Many studies have addressed the entrepreneurial leadership of college presidents (Fisher & Koch, 2004; Peck, 1983; Riggs, 2005; Smith, 2009), however few focused on academic deans who are in a position to affect change in colleges and universities (Krahenbuhl, 2004). Thus, understanding how some deans contribute to improving the financial health of an institution can be valuable to other academic deans as well as college and university presidents and chief financial officers. Entrepreneurial activities that are profitable for some academic deans can provide possible solutions to other academic leaders facing enrollment challenges, shrinking budgets, and increased competition.

This study added to the knowledge and research surrounding Clark’s Entrepreneurial Framework (1998, 2004) and further explores how some academic deans may be dealing with fiscal challenges identified in the research. The Association for the Study of Higher Education (ASHE) stated in 2006 that knowing more about how to execute entrepreneurial activity is a ground-breaking concept and valuable topic for
future research. This study expanded on the research of entrepreneurial leadership of academic deans as well as the research on the overall position in higher education.

Statement of Purpose

The overall intent of this study was to learn more about entrepreneurial characteristics and practices of academic deans. The primary purpose of this study was to examine the relationship between perceived entrepreneurial orientation of academic deans and certain demographic characteristics, entrepreneurial activity, discipline, and enrollment patterns at independent colleges and universities in Upstate New York. A secondary purpose was to explore how an academic dean gains an entrepreneurial orientation and to examine their experiences in developing and managing entrepreneurial activity in independent colleges and universities in Upstate New York. A mixed-method design was used in order to gain a more complete understanding of the problem by using quantitative and qualitative data collection and analysis (Creswell & Clark, 2011).

Research Questions

The quantitative research questions for the study were:

R1. What is the self-perceived entrepreneurial orientation of academic deans in Upstate New York independent colleges and universities?

R2. Is there a relationship between the self-perceived entrepreneurial orientation of academic deans and certain demographic characteristics of academic deans at Upstate New York independent colleges and universities?

R3. Is there a relationship between the self-perceived entrepreneurial orientation of academic deans and entrepreneurial activities carried out in their school at Upstate New York independent colleges and universities?
R4. Is there a relationship between entrepreneurial activity carried out by academic deans and the discipline of a school (e.g. School of Arts and Sciences, School of Education, School of Business) at Upstate New York independent colleges and universities?

R5. Is there a relationship between entrepreneurial activities of academic deans and changes in student enrollment since fall 2006 in New York State independent colleges and universities?

The guiding purpose for the qualitative portion of the proposed study was to further explore the entrepreneurial orientation of an academic dean and his or her experience in developing and managing entrepreneurial activity in Upstate New York independent colleges and universities.

A mixed methods study that focuses on the integration of qualitative and quantitative data needs to also include a mixed methods question (Creswell and Clark, 2011). The mixed methods research question for the proposed study asked in what ways do the qualitative data reporting the views of academic deans about their entrepreneurial orientation and activity help to explain the quantitative results about entrepreneurial orientation and activity reported on surveys?

**Definitions of Terms**

The definitions chosen for this study were based on the review of literature described in Chapter 2.

*Academic Dean* – a high ranking academic official (second to a president/chancellor and provost/chief academic officer) who oversees a school or
division of a particular discipline(s) (i.e., arts and sciences, education, business, engineering, fine arts, natural sciences, or health sciences).

*Collective Accountability* – being accountable for the collective performance and productivity of an academic unit and how that unit contributes to the overall mission and goals of the larger institution (Thompson, 2011, p.2).

*Educational Program Activities* – activities that enhance or grow academic programs and initiatives such as creating a new degree program or moving a degree program abroad.

*Entrepreneurial Activity* – revenue-generation activities that are (1) profit-based self-supporting operations that go beyond traditional sources, such as business development activities and innovative retail sales operations, (2) that develop and enhance traditional income streams such as endowment and tuition, or (3) that involve both traditional and nontraditional aspects, such as distance learning, which uses nontraditional methods of teaching to gain tuition, which is a traditional source of income. (Riggs, 2005, p. 10).

*Entrepreneurial Leadership* – a focus on cultivating leaders throughout the organization as a means to enhance opportunities for innovation and growth (ASHE, 2006, p. 92).

*Entrepreneurial Orientation* – the disposition of an individual or an organization to engage in entrepreneurial activities, determined by the degree to which they exhibit the following 10 attributes: innovative, risk-taker, creative, change agent, team-builder, competitive, flexible, visionary, proactive and persuasive (Riggs, 2005, p. 10).

*Entrepreneurship* – activities that combine risk, innovation, and opportunity, particularly in times of uncertain resources that could involve individuals (i.e., students,
faculty, administrators) or organizational units such as departments, colleges, or the entire institution (ASHE, 2009, p.3-4).

Fundraising Activities – activities in which raising money for the college or university is the main goal.

Independent Colleges and University – institutions that are members of the Commission on Independent Colleges and Universities in New York State and classified by the New York State Office of Higher Education as being independent, four-year and graduate institutions.

Intellectual Property Activities – activities that create products, processes, expressions, marks, or nonpublic information that has the potential to create revenue for a college or institution

Partnership Activities- any activity created to achieve some mutually beneficial goals and objectives between two or more organizations (e.g., a higher education institution and another organization).

Relational Capital - the set of all relationships established between firms, institutions and people that originate from a strong sense of belonging and a highly developed capacity of cooperation of culturally similar people and institutions (Capello & Faggian, 2005; Welbourne, & Pardo-del-Val, 2009).

School – an organizational unit of the same academic discipline within a college or university in which staff and faculty are grouped for administrative and academic purposes (e.g. School of Arts and Sciences, School of Education).
Small Business Development Activities - Activities in which faculty or administrators at colleges and universities engage with individuals in the form of consulting, training, research or product development.

Upstate New York – Independent four-year, graduate colleges and universities that reside in the following regions according to the Office of Higher Education of New York State (OHE): (a) Capital, (b) Central, (c) Finger Lakes, (d) Hudson Valley, (e) North County, (f) Mohawk Valley, (g) Southern Tier, and (h) Western. The Office of Higher Education OHE determines which counties and institutions reside in different regions.

Summary

Colleges and universities must face a multitude of challenges such as a declining economy, increased competition, and changes in student demographics. These challenges could impact the financial health of institutions in higher education creating a need for more revenue generating activities. Academic leaders, such as deans, who can successfully create multiple sources of revenue, may be able to act more quickly in responding to challenges such as an uncertain economy and decreases in student enrollment (Clark, 2000). This study provides a better understanding of the relationship between the self-perceived entrepreneurial orientation of academic deans in Upstate New York and entrepreneurial activity, in the form of partnerships, academic programs, intellectual capital, and small business development. This study also examined how academic deans acquire an entrepreneurial orientation and the management strategies they use to create and developing revenue generating activities.

The next chapter provides a review of the literature related to academic deans and entrepreneurial frameworks, theories and activity in higher education institutions.
Chapter 3 provided a detailed plan of the research method to include research context, research participants and the instruments that will be used in this study. Chapter 4 presents the results and analysis of the data collected and Chapter 5 provides a discussion and interpretation of the findings.
Chapter 2: Review of the Literature

Introduction

Colleges and universities in higher education are faced with pressure to expand access, decreases in state and federal funding, developing innovative ways to cut costs, and planning for an uncertain economic future (Breneman, 2005; Grumman, 2009). Additional challenges such as changes in enrollment (Digest of Education Statistics, 2008), a rise in online and distance education (Eckel, 2007), and increased competition locally and in the global market (Eckel) may lead higher education leaders to apply different strategies to meet their institutional goals. Becoming more entrepreneurial is one strategy that some institutions have adopted to address these challenges (Clark; 2000, 2004). This chapter provides a literature review of entrepreneurial frameworks, theories, and activity in higher education institutions.

The major categories covered in this chapter are: (a) Entrepreneurship in Colleges and Universities, (b) Entrepreneurial Leadership, (c) Entrepreneurial Orientation, (d) Academic Deans, and (e) Entrepreneurial Activities. These categories provide a background on the development of entrepreneurship in the field of higher education and the major research conducted on this topic. The chapter also shares an overview of the academic dean position and the different entrepreneurial activities associated with this level of leadership in colleges and universities. The research review presented in this chapter shows the gap in the literature regarding the entrepreneurial leadership and
activity of academic deans as well as the importance of expanding this knowledge for higher education administration.

**Entrepreneurship in Colleges and Universities**

Clark (2004) supports entrepreneurism as a method for universities to use when experiencing change or planning for change. Change is certain to happen in institutions of higher education, and colleges and universities “can be engulfed by it or they can work hard to alter their character in ways that allow them to better control their own destiny” (Clark, 2004, p. 7). Clark conducted a case study analysis of five universities in Europe. The purpose of the case studies was to examine how educational institutions engage in new activities while at the same time remaining collegial and adhering to long-established academic principles and traditions (Clark). The universities were selected by nominations from academics that had a professional relationship with the author. Universities were nominated based on the extent to which they were involved in self-instituting efforts to change their general character by moving away from the traditional way of practicing and reducing governmental regulation during the mid-1980’s to the mid-1990’s. Clark conducted an average of twelve interviews with faculty, administrators, and students at each university; reviewed institutional documents; sat in on meetings; and conducted observations of campus life, offices, and laboratories. Clark’s main purpose was to identify “common pathways of transformation” at each university, based on the triangulation of data (p. 4).

Based on the aforementioned case studies, Clark (1998) identified five elements that institutions and leaders could adopt to address competitive markets in an entrepreneurial manner. The elements identified were: (a) a strengthened steering core,
(b) an expanded developmental periphery, (c) a diversified funding base, (d) a stimulated academic heartland, and, (e) an integrated entrepreneurial culture (Clark, 1998, p.5). A strengthened steering core is accomplished by an increase in management capability, including both administration and academic departments, and by blending new management practices with traditional academic values. When expanding the periphery, universities become creative and develop units such as continuing education, fundraising, alumni affairs, intellectual property and possibly research centers which are outside traditional academic departments. A diversified funding base allows a university to take advantage of new opportunities quickly, rather than being limited by only a few sources. A stimulated academic heartland in an entrepreneurial university occurs when academic departments develop new programs or relationships and encourage new avenues for income throughout an institution. To truly experience transformation this integrated entrepreneurial culture must be embraced and practiced throughout the university (Clark).

Clark (2004) expanded the framework and conducted additional case studies to include colleges and universities from different parts of the world that were engaged in transformative efforts. In the second study, Clark revisited the universities in the first case study as well as universities in Uganda, Chile, Australia and six universities in the United States. The entrepreneurial framework was expanded to include the following new concepts: sustaining dynamics and the steady state of change (Clark). Entrepreneurial universities make constant adjustments to changing demands and new opportunities and these continuous efforts help an institution move forward to better adapt and prepare for the future. Transformation is ongoing in entrepreneurial universities and the leaders in these environments accept the risk that changes may fail but still strive for continuous
success. Clark identified three dynamics to explain further how universities can transform and be more entrepreneurial: (a) mutually supportive interaction (b) a continuous drive, and (c) a culture of shared decision making (p. 362). The five elements were observed by Clark as being just one part of transforming a university, and these additional concepts can help explain how transformation can be sustained over time.

The Clark framework suggests that if universities adopt the five elements and two concepts of transformation they can become more entrepreneurial and, in turn, better able to adapt to changes. Clark chose the term “entrepreneurial” because he believes the word reflects a stronger form of purposeful effort and describes actions that lead to change in organizational efforts. Clark believed that change is certain to happen in institutions of higher education and that colleges and universities “can be engulfed by it or they can work hard to alter their character in ways that allow them to better control their own destiny.” (Clark, 2004, p. 7)

Deem (2001) points out a limitation to Clark’s original case study in 1998. Due to the different strategies and organizational structures of each university, Deem is skeptical of Clark’s generalized results and reports he does not explain how local factors at institutions such as the internal culture, student groups, public funding, and social relations may limit or encourage entrepreneurial activities. Another factor suggesting the framework may not be generalizable is that all five universities selected in Clark’s 1998 case study were in existence for 30 years or less. Furthermore, the sample employed a narrow list of subjects, and enrolled a relatively small number of students (Pilbeam, 2008). An additional limitation is that the framework was not applied to small independent liberal arts colleges and universities. Additional elements of transformation
may be observed at these types of institutions given the greater reliance on tuition rather than state aid as a revenue source. In the second case study, however, the framework was applied to older universities in 2004 with a wide variety of subjects and a larger student population.

Based on the case studies from Clark (2000, 2004), 20 entrepreneurial practices were developed by Gjerding, Wilderom, Cameron, and Scheunert (2006) to measure a university’s entrepreneurship. Gjerding and his colleagues chose a grounded theory and hermeneutic approach to examine Clark’s term of “entrepreneurial university” and determine what problems, if any, can be identified in the framework. The purpose was to evaluate how entrepreneurship was understood and practiced by important leaders at four active European universities, to determine if the universities were as entrepreneurial as they declared, and to discover if the entrepreneurial practices could create an even greater entrepreneurial culture (Gjerding et al.). Twenty entrepreneurial practices were developed by the researchers through a detailed analysis of Clark’s studies and applied to evaluate the entrepreneurship level of the four European universities. Four to six leaders were interviewed at each university and were then asked to evaluate the degree to which they believed their university conformed to the twenty practices (Gjerding et al.). The leaders chosen for the study were identified as individuals who oversaw faculty, a department, or a school.

Three main topics of discussion arose as respondents defined entrepreneurial universities: (a) “the relationship between being innovative and entrepreneurial, (b) the importance of making money, and (c) the relationship between internal and external entrepreneurship” (Gjerding et al., 2006, p. 93). Entrepreneurialism, according to the
participants, denotes universities being innovative but also working externally with organizations in society at the same time. Not all participants agreed that entrepreneurship in universities is about gaining external funding, but they did agree that creating commercially feasible activities is important. The participants also agreed that entrepreneurship has to do with both internal and external relationships of the university.

The importance of a university’s history, the cultural willingness of a university to take risks, the difference in how and if entrepreneurship is carried out, and a clear understanding of commercialism were all themes identified by Gjerding et al. as important when assessing the level of the innovation and entrepreneurism in the universities. Leaders in the study identified “organizational culture, supporting organizational structures, strategy in practice, and external cooperation” (p. 96) as facilitators for entrepreneurship. Obstacles to entrepreneurship identified by leaders were (a) flexibility of administration and regulation, (b) risk-aversive culture, (c) absorptive capacity and recruitment of external users, (d) long-term commitment to external cooperation and applied research, and (e) systems for spin-offs (p. 97). It appears from these results that academic leaders are important for creating an entrepreneurial university, yet the structure and culture of a university can also play a vital role in whether or not entrepreneurial activities are successful.

Entrepreneurial practices identified in the Gjerding et al. (2006) study did not just involve the college or university presidents, but were also carried out by leaders in different levels of the universities. These findings support Eggert (1998) in that “entrepreneurial leaders are best created at the local level and where decisions and innovation happen” (as cited in ASHE, 2006, p. 92). Gjerding et al. also found a similarity
that was identified in Clark’s framework (2004) -- entrepreneurship needs to be supported and well-received at the top levels, but is actually developed and occurring from the bottom-up. Although it may be important for a college president to support and encourage entrepreneurial activity, to be successful those initiatives may require strong leadership and management of other academic leaders.

A limitation concerning the findings identified in the study by Gjerding et al. (2006) is that the twenty practices derived from Clark’s studies were based on the opinion of the authors and examined only by studying universities in Europe. Therefore, there could be other entrepreneurial practices of leaders in other types of colleges and universities that were not identified in the study. In addition, only universities with a high level of entrepreneurship were used in the sample, thus making the findings less generalizable to different institutions. Due to the study not specifically naming the positions of individuals in the study, the leaders could be academic deans, department chairs, associate deans, or possibly provosts. This lack of detail about those interviewed makes it difficult to generalize the results to just one type of academic leader.

The research of Clark (2000, 2004) and Gjerding et al (2006) was conducted in university environments. More recently, a mixed-methods study applied the five elements of Clark’s (2000) entrepreneurial framework (i.e. expanded developmental periphery; stimulated heartland; integrated entrepreneurial culture; strengthened steering core; diversified funding base) to determine the entrepreneurial leadership practices of community college presidents. Esters, McPhail, Singh, and Sygielski (2008) measured community college president involvement in entrepreneurial activity, based on Clark’s five elements of an entrepreneurial university, with a focus on nontraditional funding.
The mixed method design of the Esters et al. (2008) study was based on open-ended interviews of five community college presidents, and used purposive confirming case sampling. Purposive confirming case sampling is to “find specific sampling units that already fit into emerging patterns regarding the data” (Kemper, Stringfield & Teddlie, 2003, p. 281). The interviews also assisted in the development of the survey instrument for the quantitative phase of the study. The survey instrument was mailed to 23 community college presidents. The responses on the survey were analyzed and coded to determine an entrepreneurial practice score (EPS) for each respondent. All 23 presidents completed the survey, yielding a 100% response rate.

The themes developed in the interviews were compared to the survey results to determine if the views and statements from the participants were consistent with the results from the survey. The Esters et al. (2008) survey consisted of 37 questions that were then sorted by the five elements of Clark’s model to create five subscales of the EPS. Each question was scored on a five-point Likert scale and the total EPS score was calculated using the sum of the average scores on each survey item.

The five interviews resulted in a list of examples of different practices community college presidents engaged in to bring about transformation in their colleges. Overall, interview participants shared the most examples of entrepreneurial practices for integrating an entrepreneurial culture. Several of the activities identified were: a) gain the support and advocacy of the Board, b) use crisis as opportunity to change, c) let the data speak for itself, d) constantly communicate, and e) use the strategic plan to drive change. Although the sample size for the interview was small (n=5) and focused on
community college presidents, it suggests that academic deans may need to consider how the departmental culture can impact faculty members support for entrepreneurial efforts.

Based on the survey scores, Esters et al. (2008) found that 4% of community college presidents were rated as highly entrepreneurial, 73% scored moderately entrepreneurial and 23% of the presidents were rated low entrepreneurial. The survey did indicate that the community college presidents who were sampled demonstrated entrepreneurial practices that increased nontraditional funding based on Clark’s entrepreneurial framework. When comparing the sub scores of the EPS to the reported amount of nontraditional funding, the sole significant correlation was the expanded developmental periphery ($r = .44, p = .035$). Thus community college presidents who reported that they engaged in activities such as contracts with outside agencies, leasing of college facilities, or fundraising had a higher level of nontraditional funding.

However, a factor analysis was not conducted on the survey questions in order to determine which of the elements of the framework were the most successful in generating nontraditional funding. The survey measured the total number of entrepreneurial activities performed by community college presidents, but the categorization and alignment of those into the five elements of Clark’s framework was based solely on the opinion of the authors. In addition, the expanded developmental periphery element had 21 questions associated with it, whereas the other elements only had between two and six questions. Thus, any statistical analysis that compares the amount of nontraditional funding between the five elements of Clark’s model may not reveal valid or reliable results for this study.
Esters et al. (2008) and Gjerding et al. (2006) applied the elements of Clark’s (2004) entrepreneurial framework to assess if and how an institution and its leaders demonstrate entrepreneurial practices. The data collection for both studies consisted of interviewing leaders in colleges and universities. In addition, a survey instrument was administered to capture the level of a leader’s engagement in entrepreneurial practices or activities. Both studies demonstrated that elements of Clark’s framework were practiced and displayed at different levels by academic leaders in institutions of higher education. Yet, each measurement tool was different, even though based on the same entrepreneurial framework. In addition, neither study included a factor analysis to determine if other practices or behaviors should be included based on Clark’s entrepreneurial framework.

Entrepreneurial Leadership

Entrepreneurship has also been directly applied to the leadership of individuals. Leaders in the business industry describe the theory of entrepreneurial leadership as one that encourages “a strategic approach to entrepreneurship, so that the entrepreneurial initiatives can support development of enhanced capacities for continuously creating and appropriating value” in an organization (Gupta, MacMillan, & Surie, 2004, pg. 243). Entrepreneurial leadership in higher education is described as “a focus on cultivating leaders throughout the organization as a means to enhance opportunities for innovation and growth” (ASHE, 2006, p.92). According to the ASHE entrepreneurial leadership and how to be successful in carrying out entrepreneurial activities are a ground-breaking concepts and valuable topics for future research in higher education.

Entrepreneurial leadership can be viewed differently from other types of leadership because of its attention to, and the importance of, “creativity and innovation,
risk-taking, competition and the exploitation of opportunities” placed on the action of leaders (ASHEa, 2009, p.92). Based on a research review, Mars and Matcalfe (ASHE) provide several characteristics of entrepreneurial leadership that can help leaders in higher education be more successful. Entrepreneurial leaders are “individuals who make a significant difference, are creative and innovative, spot and exploit opportunities, find the resources and competencies required to translate opportunity into action, are good team builders and networkers, are determined in the face of adversity and competition, engage change and risk, have control of organization, put stakeholders first, and create capitol” (ASHE, p.92). The aforementioned characteristics are based on business and education sources, but have not been specifically used to measure entrepreneurial leadership of academic leaders in institutions of higher education.

One of the first citations of entrepreneurial leadership in higher education was by Peck (1983) who created a theory suggesting that success can originate through the entrepreneurial leadership within a college or university. Peck studied the leadership and relevant factors that explained the well-being of 20 small, independent colleges. Success was defined by the colleges in this study as having the following criteria: (a) sound fiscal condition, (b) modest endowment producing no more than 12% of the educational and general income, (c) strong student enrollment (FTE>2, 5000), (d) national visibility but still serving a limited geographical community, (e) recognized by one or more of the panel of expert members as being well administered, (f) the current president was in office at least five years or at the college for at least seven years in an administrative role, and (g) recognized as successful by those having intimate knowledge of the college (p.271). He discovered that these institutions were thriving, even as they managed
problems such as an uncertainty with finances, enrollment changes, and the challenge of maintaining a quality education.

Peck (1984) developed seven entrepreneurial characteristics that described a new style of leadership for academic administrators after interviewing the college president, chief academic officer and chief financial officer at each institution. The seven characteristics of successful college leadership according to the results of this study were: (a) strong commitment to mission and purpose, (b) constantly anticipating change and identifying opportunities to reach goals, (c) innovative and creative, (d) utilize intuition when making decisions about the future, (e) people oriented administration, (f) strive for academic program outcomes to be effective, and (g) operational level is well managed (p. 272). Due to the sample consisting of only leaders at small colleges, the results may be difficult to generalize to other leaders in large institutions. Thus, there may be additional or different characteristics of university presidents that could contribute to financial success in the field of higher education. Notwithstanding this limitation, Peck’s theory is still used to describe entrepreneurial leadership in higher education (Fisher & Koch, 2004).

A more recent study expanded Peck’s theory by examining if entrepreneurial presidents had commonalities in areas such as background and experiences. Fisher and Koch (2004) identified more than 700 college presidents, through a peer review process, who were described as either normative presidents or effective presidents. Based on a national survey, Fisher and Koch found that the leaders identified as effective presidents were significantly more entrepreneurial in character than those identified as normative presidents. The effective presidents displayed the following entrepreneurial
characteristics to a greater degree than the normative presidents: (a) taking risks; (b) not always following the organizational structure; (c) doing things in various ways which at times went against “the status quo”, and (d) developing partnerships with external organizations. Thus, Fisher and Koch’s findings supported Peck’s theory suggesting that engaging in entrepreneurial leadership strategies could lead to more success for college and university presidents. It should be noted that one possible limitation of the study is the fact that the authors relied on those participants nominating entrepreneurial presidents to define what is meant by “especially effective, especially successful” college presidents (Fisher & Koch, p. 35).

**Entrepreneurial Orientation**

Entrepreneurial orientation is another method of assessing entrepreneurship and leadership, first recognized by business and industry, and described as the “entrepreneurial strategy-making process that key decision makers use to enact their firm’s organizational purpose, sustain its vision, and create competitive advantage(s).” (Rauch, Wiklund, Lumpkin & Frese, 2009, p. 763). Entrepreneurial orientation has also been applied to leaders in higher education. Riggs (2005) defined entrepreneurial orientation as “the character of an individual or an organization to engage in entrepreneurial activities,” (p. 10) and reviewed the entrepreneurial orientation of 47 college presidents related to entrepreneurial activities at the institution.

Riggs (2005) examined how the entrepreneurial orientation of college and university presidents related to their institutions’ entrepreneurial activity. The entrepreneurial orientation of a president for the study was measured by a survey utilizing a five-point Likert scale. Level one indicated that an entrepreneurial orientation was not
at all characteristic of the individual whereas a level five indicated that an entrepreneurial orientation was very characteristic. The survey, a self-reporting instrument, attempted to gauge how presidents demonstrated the following ten attributes: (a) innovative, (b) risk-taker, (c) creative, (d) change agent, (d) team-builder, (e) competitive, (f) flexible, (g) visionary, (h) proactive, and (i) persuasive. Many of the characteristics in the instrument were chosen by Riggs based on her research of Sexton (1994) and also suggested by Clark (1998) as entrepreneurial responses from universities. Riggs found that entrepreneurial orientation of surveyed college presidents was positively correlated with total revenue generating activities. The study indicated that becoming more entrepreneurial through taking part in more entrepreneurial activities may be important to the overall financial health of many independent colleges and universities. Yet, because the study employed a purposive and convenience sampling to collect and analyze the data, the results may not be generalized to other populations.

In an effort to apply the same entrepreneurial orientation measure to a random population of college presidents, Smith (2009) examined the entrepreneurial orientation of presidents and revenue generating activity at independent colleges and universities in New York. The study found presidents reported the same entrepreneurial behaviors described by Riggs (2005) as mostly characteristic of themselves as leaders. However, the findings indicated no statistically significant correlation between the entrepreneurial orientation of college presidents and the revenue-generating activity of the institutions. This difference could be attributed to Riggs having a large convenience sample (n=47) of presidents whereas Smith had a random sample but smaller in size (n=25) of college presidents. On the other hand, Smith did find that alumni-program activity and
partnerships with other domestic institutions increased with the entrepreneurial orientation score of presidents leading colleges and universities in New York.

Both Smith (2009) and Riggs (2005) measured 10 traits of entrepreneurial orientation of college presidents and found that the traits were important to entrepreneurial leadership in the field of higher education. Yet, it may not be solely the leadership of a president that influences the success of different revenue-generating initiatives in colleges and universities. Based on a meta-analysis of entrepreneurial orientation in the business field, Rauch et al. (2009) found that innovativeness, risk taking and proactiveness were three major dimensions of entrepreneurial orientation. The top three traits selected as mostly characteristic by presidents in both studies were (a) proactive, (b) team builder, and (c) persuasive. Neither being innovative nor a risk taker was found to be one of the top five traits of college presidents in the Smith or Riggs study. Thus entrepreneurial behaviors may be displayed and experienced differently at various levels of an organization as well as in different industries. A president may not have to engage in risk-taking or innovative behaviors, but other academic leaders may have to when engaging in entrepreneurial activities.

Different levels of academic leaders in the field of higher education need to be studied in order to understand how to help colleges and universities become more entrepreneurial. Several studies have examined entrepreneurial leadership, practices, or orientation of college presidents (Peck, 1984; Fisher & Koch, 2004; Kirby, 2005; Riggs, 2005, Esters et al., 2008; Smith, 2009) and found that entrepreneurial characteristics of the college or university president often lead to greater success. Gjerding et al. (2006)
found that academic leaders, other than presidents, engaged and supported entrepreneurial practices based on the entrepreneurial framework of Clark (2004).

**Academic Deans**

The academic dean frequently serves as an important change agent for an entrepreneurial college or university because of his or her leadership role and interaction with faculty (Wolverton & Gmelch, 2002). Developing and participating in revenue generating activities often involves change, which requires the leadership of academic deans to successfully guide the activity to fruition. According to Krahenbuhl (2004), a dean is in a position to provide leadership for a major change due to his or her ability to facilitate different interactions across the college or university. These interactions could be between the faculty and administration or within the faculty, or administration (Krahenbuhl). Deans can develop an entrepreneurial environment many ways, including moving fast to seize new opportunities, becoming more collaborative with other organizations through partnerships and alliances, creating and protecting competitive advantages, and watching out for new ways to increase revenue and save money (Krahenbuhl). These management actions may be even more important in colleges and universities facing financial and enrollment challenges.

The National Study of Academic Deans (NSAD) (Wolverton & Gmelch, 2002) is the most recent large-scale study focusing on academic deans. This national study examined “who the college deans are, how they define their jobs, their perceptions of leadership, the stressors they face, the challenges they encounter, and the tradeoffs deans and their universities must make if deans are to be successful leaders” (Wolverton & Gmelch, p.viii). The purposive sample of 1370 deans (response rate of 60%) consisted of
deans from business, education, liberal arts, and nursing colleges in 360 institutions. The NSAD data was collected from 60 public and 60 private colleges and universities randomly selected from three different types of Carnegie classifications such as Research, Master’s (Comprehensive), or Baccalaureate.

Demographic data from the Wolverton & Gmelch (2002) study suggested that deans were approximately 54 years old, on average, and served for 5.6 years in that position. About 41% of those responded were women and almost 12% held minority status (over half being African-American). More than 90% of the respondents reported that their college or university was a good place to be employed and 57% were appointed to the deanship from within their institution. Most of the deans (59%) believed they acted as an administrator and faculty and 34% felt they were hired to initiate change or help the college manage growth (20%). The deans in the study indicated they wanted the job in order to “contribute to and improve their college” (Wolverton & Gmelch, p.x).

Based on the results of the NSAD, Wolverton and Gmelch (2002) found that a dean is an academic administrator who engages in the following four main activities: (a) planning, (b) organizing, (c) controlling, and (d) leading. Planning involves making goals and determining how the college can achieve those goals; organizing means prioritizing the goals and delegating to others the responsibility of accomplishing the goals; controlling entails ensuring that actual outcomes are consistent with projected ones; and leading involves changing the culture and possibly disrupting the status quo (Wolverton & Gmelch, p.6-7).

Data was further analyzed from the NSAD results to study more closely the role of a dean, causes of conflict and ambiguity experienced by deans, and the perceived
challenges of the near future (Montez, Wolverton, & Gmelch, 2002). Data was collected from the following areas in the NSAD: (a) Dean’s Task Inventory (DTI), (b) Role Conflict and Ambiguity Questionnaire (RCAQ), and (c) open-ended questions regarding future challenges of deans (Montez et al.). The six task dimensions identified from the DTI were (a) external and political relations, (b) personal, scholarship, (c) leadership, (d) resource management, (e) internal productivity, and (f) academic personnel management. A factor matrix of these dimensions indicated a high variance in external and political relations (23.5% variance); yet this task was listed as one of the three most important duties of a dean.

External and political relations tasks in the Montez et al (2002) study consisted of several entrepreneurial actions based on Clark’s (2004) entrepreneurial framework such as obtaining and managing external funds, building external community/stakeholders, and fostering alumni relations. The high level of importance in external and political relations, along with a high level of conflict and uncertainty for this task, may be due to academic deans not feeling administration is approachable in this area or that time constraints may prevent a dean’s involvement (Montez et al.). Thus, based on the findings of this study the role of an academic dean involves being entrepreneurial, yet could cause conflict and confusion in his or her job. A limitation in this study is that the findings are only generalizable to deans in the business, nursing, education and arts and sciences disciplines. Different results may be identified with deans from different backgrounds such as pharmacy, engineering, and other science-related disciplines.

Montez et al. (2002) found that deans can experience both role conflict and ambiguity to a certain degree and believed much of their role in the late 1990’s would
become the basis of future challenges in the profession. Deans in this study were asked to state their three greatest challenges of the over the next three to five years. The results were divided into the following seven categories of future challenges for academic deans: (a) fiscal, (b) administration, (c) curriculum and program planning, (d) faculty, (e) technology, (f) personal balance, and (e) diversity. Approximately 30% of the deans responding to this question rated fiscal challenges as number one, followed by administration (26%) and curriculum and program planning (20%). Fiscal challenges were identified by deans in the study as budget and finance issues, distribution and utilization of resources, and fundraising (Montez et al., 2002). Thus it may be helpful for an academic dean to engage in entrepreneurial activities to reduce fiscal challenges by creating new revenue sources. Several useful strategies were created by the authors to help deans address the seven categories of challenges found in the study. A brief list of those strategies are: (a) create a diverse culture, (b) know the legal environment, (c) become technologically connected, (d) strategically manage and secure financial resources, (e) seek and maintain personal and professional balance, and (f) nurture the integrity of the college. (p. 255).

Academic deans may find the financial tasks such as growing external resources and alumni relations important, yet potentially confusing and conflicting (Montez et al., 2000). Thus colleges and universities may be less successful at becoming more entrepreneurial if academic leaders, such as deans, do not have clear understanding of their role in this task. Clark’s (2004) entrepreneurial framework stresses the involvement of the different levels in an institution as an important factor of entrepreneurship in higher education. Assisting academic deans with understanding their role and supporting their
efforts at being entrepreneurial could be important to the financial health of a college or university. College and university presidents, need to provide academic deans with clear guidelines about budget priorities and the amount of time deans are expected to spend on increasing revenue sources.

The process through which deans learn and understand their role may be different for every dean. A nationwide study of 210 academic deans, from research and doctoral institutions, examined what experiences contributed to deans learning their role, and if there were differences in discipline with regard to the kinds of experiences which helped deans understand their role (Del Favero, 2006). Deans in the sample were trained in a wide range of disciplines such as engineering, medicine, chemistry, education, and humanities. Del Favero found that 80% of deans ranked past administrative posts and past relationships with faculty as their primary experiences in learning the role of a dean. Other supporting conditions such as leadership training, having a mentor, and trial and error were found to be far less crucial. The only significant difference found between a dean’s discipline and the six learning approaches were that deans from pure fields (i.e., sociology, history, and political science) significantly relied more on trial-and-error learning than those from applied fields (i.e., medicine, engineering, education, law) (Del Favero). Other learning approaches selected by deans, yet not reporting any significant differences, were past relationships with faculty leaders, past committee service, leadership training, and past administrative posts.

Based on the results of the Del Favero (2006) study, relationships with faculty and administrators could be important in the development and support of academic leaders such as deans in higher education. If deans draw on relationships with faculty and
previous administrative experiences as ways to prepare and to understand their role, then deans may depend more on these relationships when choosing to engage or not to engage in different types of entrepreneurial activity. Thus the faculty within a department and the previous experiences of an academic dean may impact the entrepreneurial orientation of academic deans and the amount or type of entrepreneurial activity they support within their school. The question arises as to if these experiences make an impact on whether or not an academic dean develops or supports entrepreneurial activity.

Glassman et al. (2003) described joint experiences of different academic leaders in relation to academic entrepreneurship and suggested academic leaders, other than the president, encourage entrepreneurship in several ways. Developing innovative activities or programs, supporting people who identify and act on new opportunities to attract revenue, and creating an environment that encourages entrepreneurial activities are all ways academic leaders could support entrepreneurship of universities (Glassman et al.). Four dimensions that could influence the potential of academic entrepreneurship thriving and growing in a university are: (a) development and presence of opportunities, (b) existence and encouragement of people who can identify and take action on opportunities, (c) skill and capability to gather resources, and (d) presence of a culture that permits and actively encourages entrepreneurial activities (Glassman et al.). These dimensions presented in Glassman et al.’s reflective report were based on the authors’ combined experiences in academic entrepreneurship.

An entrepreneurial culture could be created by an academic dean by managing faculty based on where faculty may be in their career (Glassman, et al., 2003). The goal of this strategy is to create an environment in which a dean “allocates available resources
differently to take advantage of – or encourage faculty to recognize and pursue – opportunities.” (p. 366). In following this path, a dean both encourages faculty to engage in opportunities that match their current career stage and interests as well as supports the goal of the college or university (Glassman et al.). The authors described six faculty environments that matched the different stages of faculty career paths and how in each environment faculty could be entrepreneurs. A dean choosing to engage in different management styles based on faculty career stages may lead to greater productivity in academic entrepreneurship for some faculty (Glassman et al.). A challenge for a dean using this strategy in other colleges and universities would be to ensure that he or she truly knows the stage and environment for all faculty.

Although the experiences shared by Glassman and colleagues were subjective and based on working in a university setting, approaches to encouraging entrepreneurial activity and behaviors were each shared from the perspective of a faculty member, academic chair, program manager, dean, and provost. This study added to the growing body of literature on this topic by focusing on the different perspectives of entrepreneurship in colleges and universities from various levels in a higher education institution. Yet, because the study was conducted at a university environment it may be hard to generalize to academic leaders in other types of institutions.

Recently, Williams (2009) performed a longitudinal case study of a business school based on sixty-three formal interviews of deans or university officers. Additionally, available archives, such as minutes from meetings and reports from key leaders in the school were also included in the data collection and analysis. The goal of the study was to document and to narrate the school’s history providing insightful
information about strategic leadership and change. The main focus of interpreting the data was on the interviews of ten deans (the remaining fifty-three were other positions). This focus was chosen due to the authors’ underlining belief that this position can determine the progress schools make and also for the availability and reliability of the data. (Williams)

Through the interviews of the deans, 14 strategic issues they managed during their tenure were narrowed down to the following four categories of dilemmas: (a) the market, (b) individual/school autonomy, (c) structure, and (d) school autonomy (Williams, 2009, p.136). According to Williams, the process of “balancing and managing these dilemmas is when deans are expected to lead by initiating and/or supporting appropriate change, given mission and objectives of the school” (p. 136). A model was created based on the data that describes important organizational elements but also how a dean can contribute the most to the leadership in his or her school. Based on the study, the contribution of a dean’s leadership in creating an environment that supports “goal-directed change” (p. 139) occurs when deans perform well in the following three functions: (a) determining the priorities to be followed in relation to an ongoing range of strategic dilemmas (p. 139), (b) taking the lead when changes are needed in the school’s relationships with the university and other stakeholders (p. 140), and (c) managing changes that are in conflict with the school” (p.140). This study supports the role of a dean in managing changes in the market and being a key leader of change in higher education institutions. Yet, this study only examined deans in one business school making the findings less generalizable to deans in other disciplines.

*Entrepreneurial Activities*
Defining entrepreneurial activity explains how academic leaders could influence enrollment and revenue at institutions through non-traditional methods. According to Kuratko (2007) the amount of entrepreneurial activity helps define the understanding of measuring entrepreneurial leadership. In the entrepreneurial study of college presidents, Riggs (2005) defined entrepreneurial activity as “revenue-generation activities that are (a) profit-based self-supporting operations that go beyond traditional sources, such as business development activities and innovative retail sales operations, (b) that develop and enhance traditional income streams such as endowment and tuition, or (c) that involve both traditional and nontraditional aspects, such as distance learning, which uses nontraditional methods of teaching to gain tuition, which is a traditional source of income” (p 10). The study identified 54 different entrepreneurial activities, based on Clark’s entrepreneurial framework, that help institutions create additional funding sources. The activities were then subdivided into eight categories: educational services, fundraising, partnerships, retail sales, intellectual property, small business development, securities, and off-campus real estate (Riggs). Based on additional research, Smith (2009) expanded the eight identified categories to include 64 total entrepreneurial activities.

In another study assessing entrepreneurial initiatives, Kirby (2005) analyzed the patterns of entrepreneurial activities of leaders in public liberal arts and general baccalaureate colleges along with which activities are more successful than others at producing revenue. A survey sent to presidents at 70 public higher education institutions and resulted in a response rate of 37%. Degree completion programs, increasing tuition and fees, increasing or developing endowments, and profit sharing with food service were activities found to be successful at more than 50% of the colleges in the study. The
research also showed significant relationships between the number of entrepreneurial activity and the level of success of the entrepreneurial initiatives with the number of full-time faculty (Kirby). Although the results were based on a small sample size of presidents (n=28), the study indicates that faculty may be an important resource for successful entrepreneurial activities. If academic deans encourage, support, and reward full-time faculty it may result in more entrepreneurial initiatives that are successful.

Academic deans may be in a crucial leadership role to be successful in carrying out entrepreneurial activities and programs that will impact finances, but they depend on the cooperation and support of faculty members and other leaders on campus. Deans may need to pay close attention to how the faculty is involved with endeavors such as entrepreneurial activities. A review of literature of the involvement of deans and faculty in five of the entrepreneurial categories identified by Riggs (2004) and Smith (2009) may provide an understanding of how the entrepreneurial leadership of a dean, or faculty member, may influence successful entrepreneurial activity. Partnerships, academic programs and services, fundraising, intellectual property, and small business development are the five entrepreneurial categories in which academic leaders, other than college or university presidents, may impact revenue generation for a college or university.

**Partnerships**

Several different types of partnerships have been created in higher education institutions that have been defined as entrepreneurial and have reached out to new student populations. Colleges and universities have developed partnerships with other domestic or international institutions, community groups, and business organizations for a variety of reasons (Riggs, 2005; Smith, 2009;). Kinser and Green (2009) suggest competition can
drive institutions to partner together in order to “accomplish with others what they could not do alone” (p. iv). By colleges and universities participating in partnerships with each other, academic programs may be enhanced and additional students may be recruited (Stein & Short, 2001). The two kinds of partnerships between institutions reviewed in this paper are transfer programs and collaborative degree programs.

Transfer Programs. There are several examples of institutions partnering with other domestic colleges and universities. Four-year institutions have partnered with community colleges through transfer programs to attract new students for over 20 years (O’Meara, Hall, & Carmichael, 2007). One popular type of community college partnership is a transfer program which can be defined as credits taken at one college or university, not always a part of an academic program, subsequently being acknowledged or accepted by another college or university (O’Meara et al.). Partnerships, such as transfer programs, are revenue generating and can reach new student populations by creating innovative ways for students to earn a college degree.

Deans and faculty may initiate and influence the success of developing a transfer program. Morphey, Twombly, and Wolf-Wendel (2001) conducted a case study between a top private college and two metropolitan community colleges to determine the reasons for transfer agreements, what the benefits were to the institutions, and what factors made the transfer agreements successful. Data was collected and analyzed based on visits to each campus and 10-15 semi-structured interviews with individuals responsible for the agreements. Additional sources of data were collected from presidents, college administrators, faculty, and students. Morphey et, al. identified the following four factors for successful transfer agreements: (a) all institutions benefit from the agreement, (b)
agreements were formal written documents involving the support and feedback of faculty from all campuses, (c) institutions agree that a high degree of personal attention and communication is needed, and (d) faculty and staff at all participating institutions focus and attend to the needs of transfer students.

Kisker (2007) used network embeddedness theory to study the methods involved in developing and sustaining a transfer agreement between a university and community college. Based on network embeddedness theory, organizational action is embedded in a social network of relationships, defined as "a set of nodes (e.g., persons, organizations) linked by a set of social relationships (e.g., friendship, transfer of funds, overlapping membership) of a specified type" (Laumann, Galaskiewicz, & Marsden as cited in Kisker, p.283). This study sought to examine these social networks of community colleges and universities in order to better understand what influences the creation, maintenance, and success or failure of inter-organizational collaborations (Gulati, 1998, Kisker, p.283). Therefore the purpose of the case study was to learn more about the process of developing and sustaining transfer program partnerships and to identify which factors may help or prevent the creation of these types of activities (Kisker).

The transfer program partnership of a large public university with nine community colleges was analyzed by Kisker (2007) through interviewing 13 administrators and faculty involved in the partnerships. In addition, data was collected and analyzed reviewing written documents such as proposals, agendas, and meeting notes. The study found that by involving administrators and faculty from all the institutions in the creation and execution of the partnership, the daily operations and long-term goals were less challenging for both institutions (Kisker).
Morphey et al (2001) and Kisker (2007) found that involving faculty in the development and maintenance of the transfer agreement was helpful in the success of the partnership as well as with efforts to recruit more diverse student populations. Each study provided evidence of the value of creating transfer programs and indicated the importance of faculty. Yet the reasons of the importance of faculty in the development of these types of partnerships or their motivation to engage in partnerships were not answered. However, the findings do support results found by Kirby (2004) in that faculty may be important to the development of successful entrepreneurial activity. Future studies may need to address how academic administrators, such as academic deans, can encourage and motivate more faculty to engage in entrepreneurial activity such as partnerships.

Some deans and faculty members may not support partnerships and could have difficulty looking beyond their own institution. Some studies have identified the role of a champion in assisting in the development and implementation of a transfer program partnership with community colleges (Amey, Eddy, & Ozaki, 2007; Hoffman-Johnson, 2007). To assist a community college and a private, four-year institution in forming a transfer program a “champion” was utilized to encourage resisting faculty to become involved in the collaborative effort (Hoffman-Johnson, p.18). The champion was an organizational consultant and a key component in the development and implementation of the partnership (Hoffman-Johnson). The case study by Hoffman-Johnson only evaluated one type of partnership, thus the role of a champion may have different outcomes in other types of partnerships.
The role of a champion in partnerships could be described differently as it relates to academic leaders. According to a partnership model developed by Amey et al. (2007), the champion can be a person or groups who support and promote the goals of the partnership and does not always have to be in a typical position of power, such as president or dean (Amey et al.). Two questions regarding the use of a champion in a partnership were raised: a) how does one go beyond the role of the champion in order to establish the partnership as part of the institution, and b) what role will the champion possess once the partnership has been accepted as part of the academic culture (Amey et al.)? The case studies above may suggest that a dean with faculty resistant to an entrepreneurial activity, such as partnerships, may consider the value of a consultant or a “champion” in assisting with the creation and development of new activities. Yet the role of a champion may need to be considered in order to garner support by faculty members.

*Collaborative Degree Programs.* In addition to transfer programs, deans and faculty may create entrepreneurial activity through collaborative degree programs. Stein and Short (2001) studied the obstacles that hinder the creation of collaborative degree programs, what differences are in program delivery of this type of degree, and what colleges, universities and states can do to allow and encourage faculty to create this type of collaborative degree-program. The results of the study were based on 10 different collaborative degree programs and 25 interviews conducted with students, faculty, administrators, and state leaders. The study also included reviews of formal documents associated with the program. This study found that developing collaborative degrees expanded program access and, because of the collaboration of faculty from different institutions, program quality was also enhanced. Stein and Short identified the obstacles
relating to faculty in these collaborative programs were issues surrounding territory and apprehension in having to share authority and decision making power. Whether or not faculty and administrators’ involvement and perception are different based on the type of collaborative degree program was another important question that remained unanswered (Stein and Short). A typology of collaborative degree programs (Appendix A) was created to provide a tool to help analyze the data.

Partnerships, such as transfer programs and collaborative degree programs, may provide colleges and universities with an increase in access to new student populations and provide opportunities for institutions to generate additional tuition. Some studies mention how faculty played a role in the development and management of the partnership (Amey et al., 2007; Hoffman-Johnson, 2007; Kirby, 2004; Stein & Short, 2001). Thus deans may have to work carefully and collaboratively with faculty when engaging in an entrepreneurial activity such as creating or changing partnerships. Identifying best practices implemented by deans on motivating faculty to participate in these types of activities may be valuable to institutions facing financial challenges.

*Academic Programs*

Academic programs are the foundation of higher education. Academic deans and faculty are essential to successful implementation of academic programs. There are many examples of academic programs that could be described as entrepreneurial such as new undergraduate or graduate degree programs, degree-completion programs, recruitment of foreign students, off-campus programs, summer sessions, and continuing education programs (Doane & Pusser, 2005; Kirby, 2005; Pusser, Gansneder, Gallaway, & Pope, 2005; Riggs, 2005; Smith, 2009). Educational programs and services, such as these, may
need the leadership and management of an academic dean in order to attract new types of student populations and create additional sources of revenue for an institution.

Academic leaders might decide to choose a different time and place to deliver an academic program to attract more students and impact revenue. For example, Doane and Pusser (2005) share that adding summer sessions at public colleges and universities could be seen as entrepreneurial due to summer class tuition generating a revenue surplus. The two main professional incentives for faculty participation in international summer courses can be personal satisfaction and the opportunity to innovate (Doane & Pusser). The authors report there are groups of faculty interested in innovative and entrepreneurial initiatives, such as teaching summer programs. Yet, a challenge for some deans may be identifying faculty members interested in this type of entrepreneurial behavior.

Online education is another academic entrepreneurial activity that colleges and universities have implemented to create more access to students, stay competitive with international and domestic institutions, and deal with reductions in financial resources (Dykman and Davis, 2008). Integrating technology into the classroom and academic programs can be a challenge for some deans. According to Lessen and Sorensen (2006) a dean must be a leader and set the priorities for technology use in the academic unit as well as develop a culture in which technology is accessible. A dean must also provide resources, beyond the budget, to incorporate new technology and to follow-up with support for faculty, staff, and students in order to ensure appropriate training is provided (Lessen & Sorensen).

Continuing education programs have been described as entrepreneurial in nature when they are “innovative, competitive, revenue seeking but are also at some risk” due to
receiving less financial support than other programs of the institution (Pusser et al.; 2005). A nationwide survey of the status and customs of continuing education programs was mailed to a random sample of over 1700 public and private institutions. Based on a sample of 700 colleges and universities, 60% of the institutions reported that continuing education programs were offered at their college or university. Based on this study, continuing education programs that recruit non-traditional students (i.e. parents, commuters, or adults) are successful in several different entrepreneurial academic activities, such as offering courses during the evening and weekend as well as in different formats such as hybrid or online (Pusser et al.). The authors did not identify who completed the survey at the institutions which could be a limitation. Yet this study suggests academic deans could choose to develop or expand continuing education programs within their school in order to reach new non-traditional student populations.

Continuing education departments are not the only area in higher education that is creating off-campus programs. Many institutions may choose to deliver all or a portion of an academic program at a different location to reach new students of all types. In New York State, off campus instructional programs expanded rapidly in the last two decades to increase access to non-traditional student populations (New York State Education Department, 2010). There also tends to be a growing interest in adding locations by institutions accredited by Middle States on Higher Education [MSHE] (MSHE, 2009a). An additional location defined by MSHE (2009a) is an off-campus site in which “50% or more of an educational program is offered” (p.4). According to the MSCHE Summaries of Commission Actions on Institutions (2009b), the number of additional locations requesting MSCHE approval increased approximately 44% from 2005 to 2008. The
reasons for the increase of MSCHE accredited additional locations have not been fully investigated and it is not yet known if this change reflects an increase in enrollment or revenue in those institutions.

Many entrepreneurial activities require the dean to become involved in program development, which without prior experience could be challenging for some deans. Program development provides a dean with several options to increase student populations and impact revenue. A dean may choose to find a new market for an existing program, develop a new academic program, or change a current program to become more competitive (Voorhees, 2005). If choosing to modify an existing program or to develop a new academic program, Voorhees suggested a dean answer the following four questions: (a) what is the association between current program and proposed new one?; (b) what student population will the proposed program target and help?; (c) how will institutional resources be impacted by proposed program?; and d) what will be the impact of the proposed program on the institutional position and mission? Institutional research departments may be a valuable resource to deans looking to create new academic programs or alter existing programs. Deans that can partner with members in an institutional research department may have better success in program development which could lead to increases in revenue or students (Voorhees).

Fundraising

Fundraising has been identified as an entrepreneurial activity engaged in by college and university presidents (Kirby, 2004; Riggs, 2004; Smith, 2009) and by academic deans (Wolverton & Gmelch, 2002). According to Wolverton and Gmelch, there may be increased pressure put on academic deans by administration to engage in
fundraising which can lead to an increase in work-related stress. In some institutions, academic deans play a leading role in fundraising in order to increase financial resources (Hodson, 2010).

A qualitative study was conducted to discover how and to what degree academic deans are required to perform fundraising responsibilities at their institutions (Piazza, 2008). Focus groups and interviews were conducted with academic deans to learn more about their experiences and participation in fundraising along with their relationship with the institutional advancement director at their institution. Although this study only surveyed deans in northeastern colleges and universities, the results provide several explanations as to why some deans may participate in fundraising more than others. Piazza concluded the following six key results from the study:

1. Deans recognize there is a need for fundraising in their college and university.
2. Many deans are not accustomed to the fundraising ask for help in engaging in this type of activity.
3. The type of school in which the dean presides may make a difference in the level of financial success in fundraising.
4. Those deans that are in areas that teach people skills may have more success in acquiring a major gift.
5. A new dean may be more likely to ask for help in how to fundraise than those deans with more work experience.
6. Financial success may be more likely if there is a positive relationship between an academic dean and the leader in institutional advancement.
A survey of academic leaders in member institutions of the Association of Schools of Journalism and Mass Communication was conducted, by Thomas Kunkel, to understand key pressures and issues of journalism and mass communication (JMC) leaders (Sheehan & Mihailidis, 2007). The survey had a 54% response rate and found that one-third or more of the JMC leaders’ time was spent on fundraising (Sheehan & Mihailidis). In addition, 78% of those responding indicated that pressure to engage in fundraising activities had significantly increased over the last five years (Sheehan & Mihailidis), yet only 57% reported they liked that part of their job. The sample in the study included other leaders in addition to deans, thus it may be hard to generalize the results to all academic deans. Sheehan & Mihailidis and Piazza (2008) both found that some deans engage in fundraising as a way to increase revenue at their institution yet more empirical research is needed on the involvement of academic deans in this type of entrepreneurial activity.

*Intellectual Property*

Activities such as the development of an on line course or technology transfer, actions used to move university research to the market, are types of intellectual property that are being used in colleges and universities to increase revenue (ASHE, 2008). Intellectual property involves the development or creation of “products, processes, expressions, marks or nonpublic information” that has the potential to create revenue for a college or institution (ASHE, p. 1). Some academic deans may engage in their own intellectual property activities or support faculty in developing types of intellectual property in order to increase revenue. Yet, Powers and Campbell (2009) report that few universities have received large increases in revenues from technology transfer such as
patents and licenses. More important than creating intellectual property to make a financial impact is to develop a university-industry relationship that can be successful for each industry (Powers and Campbell). There is a lack of empirical research on the involvement and experiences of academic deans in this type of entrepreneurial activity. In addition, academic deans in some smaller independent colleges and universities may find increasing revenue through intellectual property more challenging due to having smaller research teams and time to commit to this activity.

Small Business Development.

Faculty or administrators at colleges and universities engaging with individuals at other organizations in the form of consulting, training, research or product development can be described as small business development activities. Faculty at some institutions are providing workshops to outside agencies and other colleges have assisted new small businesses with training and support (Allen, 2007).

Some disciplines, such as nursing, are encouraged to engage in this type of entrepreneurial activity. Miller et al. (2004) suggested an alternative model for the academic nursing practice to create new funding sources to meet challenges such as decrease in resources and increased in program expenses. The three dimensions in the model proposed by Miller et al. model are: (a) to provide direct care at a designated place such as a hospital associated with the college or institution and provide direct care as a “contractor” for another agency, (b) to provide opportunities to faculty to develop a consulting practice, and (c) to market the teaching experience to consumers, such as other colleges or universities and community agencies, to provide educational development classes or programs. The authors stated that “entrepreneurial creativity” by
academic leaders and faculty in nursing schools or departments can make a positive impact in revenue which can sustain and improve academic programs (p. 58).

Research Summary

During the last several years, quantitative, qualitative, and mixed-methods methodological approaches have been applied to the study of entrepreneurship and entrepreneurial activity in the field of higher education. The research literature identifies several quantitative studies (Riggs, 2005; Smith, 2009,) that used the level of revenue gained as a means of determining if entrepreneurial activities were successful. Yet other quantitative studies (Peck, 1983; Fisher & Koch, 2004) assessed the degree and amount in which leaders engaged in entrepreneurial characteristics and practices. Kirby (2005) measured the level of success according to the number of entrepreneurial initiatives instituted by presidents during their tenure. Qualitative studies focusing on entrepreneurship in higher education utilized case study analysis (Clark, 2000; Clark 2004) and interviews with academic leaders (Gjerding et al., 2006) to define and determine entrepreneurship and the level of entrepreneurial activity.

Gjerding et al. (2006) used mixed methods research to examine how leaders, other than presidents, engage in entrepreneurial practices. Esters et al. (2008) also conducted a mixed-methods study to explore entrepreneurial practices of community college presidents. Yet there have not been any recent studies which have expanded on the results of Gjerding et al. or applied the elements of Clark’s (2004) model to other important positions such as, academic deans, in American colleges and universities. If being more entrepreneurial helps a president be successful, then other academic leaders may also need to know how to engage in these types of behaviors to increase revenue. Further
investigation is needed to know what types of entrepreneurial activities academic deans engaging and if there are barriers or facilitators in conducting entrepreneurial activities.

This study aims at gaining a better understanding of the relationship between the self perceived entrepreneurial orientation of academic deans in Upstate New York and entrepreneurial activity, in the form of partnerships, academic programs, intellectual capital and small business development. This study also further examines an academic dean’s entrepreneurial orientation and their experience in developing and managing entrepreneurial activity in Upstate New York independent colleges and universities.

Mixed Method Studies in the Field of Higher Education

This study is an explanatory sequential mixed methods design (Teddlie & Tashakkori, 2009) and involves two phases. According to Creswell and Clark (2011), this method consists of two phases in which the researcher begins with the collection and analysis of quantitative data, followed by the collection and analysis of qualitative data to help explain and clarify the initial quantitative results. Some studies have used explanatory sequential mixed methods design in the field of higher education.

Although not identified as mixed methods research design, the study conducted by Riggs (2005) included two phases of data collecting and analysis. Riggs examined how the entrepreneurial orientation of independent college and university presidents related to their institutions’ entrepreneurial activity through responses to a survey and interviews. Based on the results of the survey, Riggs conducted four interviews with college presidents to further describe the quantitative data and enrich the study. Riggs selected the two presidents with the highest entrepreneurial orientation score from the questionnaire and the two presidents with the lowest entrepreneurial orientation score.
from the questionnaire. Riggs analyzed the questionnaire data which was then used to
develop the open-ended interview questions. Riggs further explained the experience of
entrepreneurial independent college presidents by applying quantitative and qualitative
methods in the study. Several conclusions were made based on the merged data of the
survey and interviews.

Ivankova and Sticks (2010) conducted an explanatory sequential mixed methods
design to assess the factors contributing to students’ persistence in a distance educational
doctorate program in educational leadership. An online survey was sent to 278 current
and former doctoral students which resulted in 207 completed surveys, a 74.5% response
rate. Respondents were organized into four groups based on their status in the doctoral
program (Beginning, Matriculated, Graduated, and Withdrawn/Inactive). Ivankova and
Sticks selected an individual from each group using a maximal variation strategy that
allows individuals with different dimensions to be selected. The qualitative phase
included the following sources: (a) semi-structured telephone interviews, (b) follow-up
telephone surveys, (c) academic transcript review, (d) elicitation materials (e.g., photos),
(d) responses to the open-ended questions on the survey, and (e) selected online classes
taken by participants. By collecting both quantitative and qualitative data, the researchers
found the following factors to contribute to students’ persistence in an online doctoral
program: (a) quality of the program factors, (b) academic advisor- and faculty-related
factors, (c) institution-related factors, (d) student-related factors, and (e) external factors.

Conclusion

This chapter summarizes the major research literature relating to entrepreneurship
and entrepreneurial activity in the field of higher education. Research on the
entrepreneurial leadership practices and behaviors of different academic leaders such as college presidents, deans, and faculty were also described. The research indicates that academic leaders in colleges and universities have entrepreneurial characteristics and are engaging in different entrepreneurial activities to address fiscal and economic challenges. Several studies (Esters et al., 2008; Kirby, 2005; Riggs, 2005; Smith, 2009,) described the entrepreneurial leadership of college presidents. However, according to Clark (2004), entrepreneurship requires strong leaders at all levels such as an academic dean.

The role and challenges of academic deans was reviewed in this chapter, which suggests deans do engage in entrepreneurial activity. Yet, few studies have addressed the influence of a dean’s leadership on the amount or success of revenue-generating activity and how best to implement these types of initiatives. The research described in this chapter indicates that academic deans are in a position to effect change and influence the development and success of entrepreneurial activity. Partnerships, academic programs, fundraising, intellectual property, and small business activities were entrepreneurial activities engaged in by academic deans according to the research reviewed in this chapter. This study describes the factors that may impact if and how an academic dean engages in entrepreneurial activity. The next chapter provides a detailed plan of the research method to include research context, research participants, and the instruments that are used in this study.
Chapter 3: Research Design Methodology

Introduction

Colleges and universities in higher education are faced with pressure to expand access, adjust to decreases in state and federal funding, develop innovative ways to cut costs, and plan for an uncertain economic future (Breneman, 2005; Grumman, 2009). Additional challenges such as changes in enrollment (Digest of Education Statistics, 2008), a rise in online and distance education (Eckel, 2007), and increased competition locally and in the global market (Eckel) may require higher education leaders to apply different strategies to meet their institutional goals. Becoming more entrepreneurial is one strategy that some institutions have adopted to address these challenges (Clark, 2000, 2004). This chapter provides a methodological review of the study that includes the research design, summary of the participants, and type of instruments, along with an overview of the data collection procedures and analysis.

Several studies have examined the entrepreneurial leadership of college presidents, yet few have investigated academic deans (Fisher & Koch, 2004; Peck, 1983; Riggs, 2005; Smith, 2009). Based on the entrepreneurial framework described by Clark (2000), an entrepreneurial college president is just one factor to consider when creating an entrepreneurial institution of higher education and participating in entrepreneurial activities. Clark stressed the involvement of the different levels in an institution as an important characteristic of successful entrepreneurship in higher education. Additional
positions on campus need to be studied in relation to entrepreneurial leadership to understand how to help colleges and universities achieve their goals.

A mixed methods approach to measuring entrepreneurial practices by Esters et al. (2008) used interviews with community college presidents along with an instrument that measured the perceived success level of different entrepreneurial activities defined by Clark’s 2004 entrepreneurial framework. Drawing information from this framework to develop survey questions, entrepreneurial activity inventories, and interview questions is a common practice in quantitative and qualitative studies as well (Esters et al., 2008; Gjerding et al., 2006; Kirby, 2005; Riggs, 2005, Smith, 2009). Yet, Clark’s framework has not been applied universally and the elements may be interpreted differently based on author bias and the reported limitations.

There have been multiple methods utilized to measure and interpret entrepreneurial activity at colleges and universities (Clark, 2004; Esters et al., Gjerding et al., 2006; Kirby, 2005; Peck, 1984; Riggs, 2005, 2008; Smith, 2009). Yet, most of the instruments (e.g., surveys) seem to be subjective and borrowed from Clark’s entrepreneurial framework. In addition, entrepreneurial activities seem to be broadly defined in each study reviewed in this paper. Riggs (2005) and Smith used the same definition of entrepreneurial activity and created the most extensive list of revenue-generating activities from the reviewed literature. The list was originally developed by Riggs through research of the business literature on entrepreneurial activity and Clark’s entrepreneurial framework. Yet, only college presidents were utilized to establish validity and reliability of the survey and also measure the number of entrepreneurial activities. This list of activities may be expanded on if other academic leaders, such as academic
deans, are consulted and included in future research studies on entrepreneurship in the field of higher education.

This study expanded the research of entrepreneurial leadership and activity of Riggs (2005) and Smith (2009), yet with a different population. The study also included a qualitative phase to further examine the research problem. The study investigated the relationship between the self-perceived entrepreneurial orientation of academic deans and entrepreneurial activities in independent colleges and universities in Upstate New York. In addition, the study examined the entrepreneurial orientation of an academic dean and their experiences in developing and managing entrepreneurial activity.

In this study, quantitative data was collected and analyzed through an online survey in the first phase, followed by the collection and analysis of qualitative data through interviews in the second phase. Phase one looked at statistical relationships between self-perceived entrepreneurial orientation of academic deans and certain demographic characteristics, entrepreneurial activity, discipline, and enrollment patterns at independent colleges and universities in Upstate New York. In this study, the quantitative data assisted in identifying entrepreneurial academic deans who engage in a high amount of entrepreneurial activity. Based on the phase one quantitative analysis, phase two of the study examined the experiences of three academic deans. The qualitative data analysis further defined the development and experience of an entrepreneurial academic dean. Thus, the quantitative data and results provide an overview of the research problem, while the qualitative data and analysis give explanations of the statistical results of the entrepreneurial leadership and activities of academic deans. Both
types of data are needed in order to fully understand the entrepreneurial leadership of academic deans in Upstate New York.

The quantitative research questions for this study were:

R1. What is the self-perceived entrepreneurial orientation of academic deans in Upstate New York independent colleges and universities?

R2. Is there a relationship between the self-perceived entrepreneurial orientation of academic deans and certain demographic characteristics of academic deans at Upstate New York independent colleges and universities?

R3. Is there a relationship between the self-perceived entrepreneurial orientation of academic deans and entrepreneurial activities carried out in their school at Upstate New York independent colleges and universities?

R4. Is there a relationship between entrepreneurial activity carried out by academic deans and the discipline of a school (e.g., School of Arts and Sciences, School of Education, School of Business) at Upstate New York independent colleges and universities?

R5. Is there a relationship between entrepreneurial activities of academic deans and changes in student enrollment since fall 2006 in New York State independent colleges and universities?

The guiding purpose for the qualitative portion of the proposed study was to further explore the entrepreneurial orientation of academic deans and their experiences in developing and managing entrepreneurial activity in Upstate New York independent colleges and universities.
A mixed methods study that focuses on the integration of qualitative and quantitative needs to also include a mixed methods question (Creswell & Clark, 2011). The mixed methods research question for the proposed study asks, “In what ways do the quantitative data reporting the views of academic deans about their entrepreneurial orientation and activity help to explain the quantitative results about entrepreneurial orientation and activity reported on surveys?”

*Research Design*

The three different research paradigms are quantitative, qualitative, and mixed-methods (Creswell, 2009) and all have been used in examining entrepreneurship in higher education.

This study employed a mixed methods design which Creswell (2009) described as “an approach to inquiry that combines or associates both quantitative and qualitative forms” (p. 4). By using multiple measures and approaches, this study utilizes the strengths of both methods, which can provide a clearer and expanded understanding of the research problem (Creswell). Mixed methods allows for integrating quantitative and qualitative data during some stage in the research process of a study to better examine and comprehend the research problem (Ivankova, Creswell, & Stick, 2006). Mixed methods research is supported by pragmatism, which is not committing to just one set of principles and reality (Creswell), and allows the researcher the best opportunities for responding to research questions (Johnson & Onwuegbuzie, 2004). Researchers are pragmatic when they use mixed methods research “in that inquiries draw liberally from both quantitative and qualitative assumptions when they engage in their research” (Creswell, p. 10).
The proposed study is an explanatory sequential mixed methods design (Teddlie & Tashakkori, 2009) and involves two phases. According to Creswell and Clark (2011), this method consists of two phases in which the researcher begins with the collection and analysis of quantitative data, followed by the collection and analysis of qualitative data to help explain and clarify the initial quantitative results. The first phase consists of examining the problem in a post positivism perspective by measuring variables and conducting statistical tests; whereas, the second phase involves adapting a more inductive perspective to the research problem and using a constructivism philosophy (Creswell, 2009). Thus, by using two methods, different philosophical assumptions can be applied in the study. Creswell suggests this design is usually implemented to understand and explain quantitative results by gathering and interpreting follow-up qualitative data, such as through interviews. The rationale of an explanatory sequential research design is to use the results from the qualitative phase to aid in expanding on the findings from the quantitative phase (Clark & Creswell, 2009).

There are both strengths and limitations when using an explanatory sequential mixed methods design. This type of mixed methods design is straightforward and useful at exploring the quantitative results more fully and with greater detail (Clark & Creswell, 2008). An explanatory sequential mixed methods design is also helpful when quantitative results are surprising or inconsistent with initial hypothesis. There are, however, additional costs and time involved in collecting and analyzing two types of data (Clark & Creswell, 2008; Teddlike & Tashakkori, 2009).

An additional limitation using a mixed-methods design is that the theories and categories used in the quantitative section of the study may not accurately reflect the
academic deans’ understanding or perception, and some may believe the findings are too broad or too narrow to generalize to academic deans in Upstate New York (Johnson & Onwuegbuzie, 2004). The qualitative approach was a useful method in this study by making sure the study was responsive to local situations, conditions, and stakeholders’ needs in order to address this limitation (Creswell, 2009).

A further limitation to the study was that qualitative content analysis may have led the researcher to examine the data used in developing themes from academic deans with an informed, yet strong bias (Hsieh & Shannon, 2005). In addition, a researcher may give excessive emphasis on the framework or theory guiding the study and not see other situational aspects of entrepreneurial leadership of academic deans (Hsieh and Shannon). This researcher acknowledged any biases based on previous experiences and consulted current and former academic deans on code and theme development to address possible biases or over attention to the Clark entrepreneurial framework (2004).

Qualitative content analysis used in this study may have caused the researcher to examine the data used in developing themes from academic dean interviews with an informed, yet also strong bias (Hsieh & Shannon, 2005). In addition, a researcher may give excessive emphasis on the framework or theory guiding the study and not see other situational aspects of entrepreneurial leadership of academic deans (Hsieh and Shannon). This researcher acknowledged any biases based on previous experiences as well as consulted current and former academic deans on code and theme development to address possible biases and over attention to the Clark entrepreneurial framework (2004).
Greene, Caracelli, & Graham (1989) conducted a theoretical review of 57 mixed-method evaluation studies and suggest the following five major purposes for performing mixed-methods research:

1. Triangulation seeks convergence and validation of results from different methods and designs studying the same phenomenon (Greene et al., 1989). The study searched for validation and convergence of the results from a quantitative survey and qualitative interviews studying self-perceived entrepreneurial orientation and activity of academic deans in Upstate New York. Triangulation assisted the researcher in performing a cross-check of the data and a merged data analysis.

2. Complementarity seeks elaboration, enhancement, illustration, and clarification of the results from one method with results from the other method (Greene et al., 1989). The study was complementary as participants were asked in their interviews to expand further on their reported self-perceived entrepreneurial orientation and personal experiences in the engagement of entrepreneurial activities. The researcher may not have achieved the same level of depth by employing only a quantitative method, and complementarity assisted the researcher in assessing any overlap with the data.

3. Development seeks to use the results from one method to help develop or inform the other method (Greene et al., 1989). The study used the findings from the quantitative survey to help inform and further develop the academic dean interview questions in the qualitative research phase.

4. Initiation seeks the discovery of paradoxes and contradiction, new perspectives of frameworks, and the recasting of questions or results from one method with questions or results from the other method (Greene et al., 1989). As a result of the
quantitative survey data of academic deans, the interview questions were reframed to ask more relevant questions. In addition, the results from the qualitative data brought about new perspectives on the entrepreneurial activity of academic deans reported in the survey.

5. Expansion seeks to extend the breadth and range of inquiry by using different methods for different inquiry components (Greene et al., 1989). The study of academic deans had multiple components. The quantitative data allowed the researcher to assess outcomes of self-perceived entrepreneurial orientations of academic deans and entrepreneurial activity. The qualitative interviews helped identify a process to develop entrepreneurial activities used by some deans.

When choosing a mixed methods design, the following methodological factors need to be considered: (a) priority and weight assigned to the quantitative and qualitative data collection and analysis (method with greater emphasis is shown in all caps), (b) the sequence of the data collection and analysis must be carefully designed, (c) stages in the research process that connect the quantitative and qualitative data collection and analysis, and (d) how the results of the quantitative and qualitative phases will be integrated to answer the research question (Ivankova, Creswell, & Stick, 2006). These issues are addressed in the visual model along with additional details of the research design in Appendix B.

Research Context

Higher education institutions in the United States encounter and manage a multitude of challenges. Yet, the types of these challenges are usually dependent on where these institutions are geographically located. Based on a report from WICHE
New York State graduation rates are expected to decrease by 16.5% with the population most impacted being those of White non-Hispanic and African American background (NYSED, 2009). This decrease will impact the enrollment of students entering college directly from high school and could create financial challenges for independent colleges and universities receiving a significant amount of revenue from tuition (CICU, 2008).

The Office of Higher Education (OHE) manages the New York State’s Higher Education system, which includes 263 colleges and universities and 246 non-degree proprietary schools (http://www.highered.nysed.gov/about.html). According to the OHE, there are 83 public, 145 independent, and 35 proprietary degree-granting institutions in New York State. The OHE determines which counties and institutions reside in different regions among the state, and this study utilizes the recently updated 2009 New York State Regents Regions to use in selecting the population. Colleges and universities in New York State reside in one of the following ten regions: (a) Capital, (b) Central, (c) Finger Lakes, (d) Hudson Valley, (e) Long Island, (f) New York City, (g) North County, (h) Mohawk Valley, (i) Southern Tier, and (g) Western.

To narrow the population for this study, the colleges and universities are those that are in Upstate New York regions and have academic deans. To help the results of the study be more generalizable to other populations, those institutions located in the New York City and Long Island regions were excluded due to their existing in urban environments and having different social, political, economic, demographic, and regulatory issues (Smith, 2009). Thus, the population for this study consisted of 24 independent colleges and universities in Upstate New York listed in Appendix C.
Research Participants

The study included academic deans who oversee a school or division of a particular academic discipline(s). The deans are employed in higher education institutions that are classified by the New York State Office of Higher Education (OHE) as independent four-year and graduate institutions. The 2009-10 Online Higher Directory (OHED) provided contact information for the deans in the proposed study. The OHED is a resource used for locating academic and administrative leaders at degree-granting colleges and universities that are accredited by agencies recognized by the Secretary of Education and/or the Council on Higher Education Accreditation (OHED, 2009). The information is verified and updated with a 99.9% response rate from colleges and universities. Based on The 2009-10 Online Higher Education Directory, there were 103 academic deans in independent colleges in Upstate New York.

Interview participants were academic deans who completed the survey, shared contact information on the survey, and indicated an interest in participating in a follow-up interview.

Instruments Used in Data Collection

The explanatory sequential mixed methods design (Teddlie & Tashakkori, 2009) was used in this study that involved two phases and two types of data collection instruments. Quantitative data was collected and analyzed through surveys in the first phase, followed by the collection and analysis of qualitative data through interviews in the second phase. In this study, phase one examined statistical relationships between self-perceived entrepreneurial orientation of academic deans and certain demographic characteristics, entrepreneurial activity, discipline of school, and enrollment patterns at
independent colleges and universities in Upstate New York. Based on the phase one analysis, phase two of the study examined the experiences of three respondents who reported to be highly entrepreneurial. Both types of data were needed in order to fully understand the entrepreneurial leadership of academic deans in Upstate New York. The rationale of a sequential explanatory research design is to use the results from the qualitative phase to aid in explaining and expanding on the findings from the quantitative phase (Clark & Creswell, 2009).

Survey Instrument

The research instrument for the proposed study was based on an instrument originally developed by Riggs (2005) and then enhanced by Smith (2009). Both researchers gave written consent to use and adapt the survey for this study (Appendix D & E). Riggs developed the instrument to collect quantitative data on entrepreneurial activity and leadership of college presidents. Presidents working at national independent colleges and universities who were members of the Council of Independent Colleges (CIC) made up the convenience sample for Riggs. The Office of Measurement and Evaluation at the University of Pittsburgh reviewed and approved the instrument. Smith further developed The Riggs instrument by making several modifications such as adding different demographic questions (e.g., race/ethnicity, scholarly activity, highest degree earned, gender, and years as president) and the impact of the economic condition on the institution.

The instrument for this study included four sections and 14 questions. The first section asked questions about certain demographic and institutional information, such as gender, age, ethnicity, career history, and enrollment trends. The second section used a
Likert-type scale to ask academic deans to rate themselves in regards to ten entrepreneurial characteristics. The third section asked academic deans which of the 50 entrepreneurial activities are being carried out in their school. The fourth section was optional and asked for deans’ contact information if they were interested in participating in an interview and if they would like to receive the abstract of the completed dissertation.

The Riggs Instrument listed 54 entrepreneurial activities; whereas, the instrument used by Smith (2009) expanded the list to 64 activities. The activities for both instruments were subdivided into eight categories: educational services, fundraising, partnerships, retail sales, intellectual property, small business development, securities, and off-campus real estate (Riggs, 2005; Smith, 2009). The instrument for the proposed study did not include retail sales, securities, and off-campus real estate as entrepreneurial categories. The review of the literature did not show any empirical evidence of academic deans’ involvement in those three categories, and the panel of experts agreed that academic deans typically do not engage in activities in those categories. Eliminating these categories created 50 activities in the instrument for this study.

The Riggs (2005) and Smith (2009) instruments were modified for this study to answer the research questions and examine a new population. The ten entrepreneurial characteristics used to measure entrepreneurial orientation in the studies by Riggs (2005) and Smith (2009) were not pre-screened with academic deans, which could impact the validity of the instrument. A panel of experts was used in this study to indicate if the instrument accurately represents what it intends to measure (Vogt, 2005). Current and former academic deans, as well as other academic leaders, from independent colleges and
universities made up the panel of experts for this study. The letter and survey sent to the panel is included in Appendix F. The panel was asked to review the survey and answer the following questions:

1. Is the survey measuring what it intended to measure?
2. Is the survey and associated questions appropriate for the sample/population?
3. Is the survey comprehensive enough to collect all the information needed to address the research questions?
4. Are the survey items clearly written?
5. Are there additional questions that should be included in the survey?
6. Is the amount of estimated time (20 minutes) to complete the survey a reasonable expectation for respondents?

The panel of experts for the study included a former dean of a business school, a current dean of a school of education, and a college vice-president. The researcher’s dissertation chair is a former dean of a school of education and the committee member is a current dean of a school of nursing who also reviewed and provided feedback on the survey. The panel of experts agreed that the instrument measured what it intended to measure for each research question. The panel members also suggested reducing the number of questions and further refined a few questions to improve clarity. The only major change to the survey following the pilot study was eliminating the question asking deans to state if an entrepreneurial activity made a profit, broke even, or lost money. The question was changed to model the Riggs (2005) survey due to the panel of experts’ concern over the difference in academic deans’ budget control in colleges and
universities. Members of the panel did not suggest adding or changing any of the entrepreneurial characteristics listed in the survey.

*Interviews*

The qualitative data collection method was semi-structured interview questions consisting of a number of open-ended questions (Creswell, 2009). According to Kvale and Brinkman (2009), it is common for researchers to pilot the interview questions with other people. One pilot interview was conducted with a current dean in order for the researcher to practice interviewing and listening to the interviews and also to check to see if changes needed to be made to improve the forming or sequence of the question (Kvale & Brinkman).

*Data Collection Procedures*

The sequential explanatory mixed methods design is implemented in two phases. This section describes the procedures for the data collection in the first phase followed by the data collection procedures for the second phase. Data for both phases of the study were downloaded to a secure source and kept in a locked file cabinet accessed only by the researcher.

*Phase I: Quantitative*

The cover letter (Appendix G) and modified instrument (Appendix H) was distributed using Qualtrics, an online survey software package, in November 2010 and concluded in December 2010 (Appendix E). The e-mail addresses for each academic dean were compiled from the 2009-10 Online Higher Education Directory. An introductory letter and link to the survey was sent in an e-mail to academic deans. The letter explained the purpose of the study, provided any background information, and
asked the academic dean for participation in the study. Contact information of the researcher was included in the e-mail for respondents who had any questions regarding the study.

*Phase II: Qualitative*

The data collection method for the qualitative research phase of the study was interviews (Kvale & Brinkman, 2009). Three academic deans were selected for interviews based on the analysis of the quantitative phase of the proposed study and represented a different type of institution with varying levels of student enrollment. The purposive sample allowed for the researcher to understand the research problem and questions (Creswell, 2009). The interview sample for this study was respondents who indicated an interest in participating in a follow-up interview with a possible 30-minute, follow-up conversation for clarification and confirmation of the findings (survey question #13). Each respondent received and interview information letter and completed a consent form prior to the interview (Appendix I). The interview schedule included 20 questions based on the results and analysis of the quantitative phase of the study (Appendix J). Each face-to-face interview averaged 60 minutes and was recorded through a digital recording device. Participants who agreed to be interviewed were assured confidentiality by the researcher prior to the start of each interview. The recordings were then transcribed into written notes for the researcher to analyze (Creswell, 2009). The researcher also took brief notes to record any observations or nuances that were not picked up in a recording.

Validity in qualitative studies can be established by assessing whether the information obtained by the interviews is accurate (Creswell & Clark, 2011). In the
proposed study, the researcher used member checking to establish validity with the qualitative data. Member checking is defined, by Creswell and Clark, as a qualitative validity approach in which the researcher takes summaries of the findings (e.g., interviews) back to the participants in the study to ask them whether the findings are an accurate reflection of their experiences.

**Data Analysis**

*Quantitative Data Analysis*

The Statistical Package for the Social Sciences (SPSS) software program assisted in providing detailed data analysis for the study. Descriptive statistics (i.e., frequencies, percentages, means, and standard deviations), Pearson correlation coefficients, and analysis of variance (ANOVA) were used to summarize the results from the survey (Huck, 2008; Vogt, 2005).

Research question one asked what was the self-perceived entrepreneurial orientation of academic deans. This question was answered through summing the responses from each dean in survey question #11 to provide an entrepreneurial summary score for each participant. Based on Riggs (2005) and Smith (2009), the range of scores was between 10 and 50 with 10 being *low* and 50 being *high*. Mean scores were calculated for all participants. The participants’ entrepreneurial orientation scores were sorted into different groups (i.e., low entrepreneurial orientation, moderate entrepreneurial orientation, and high entrepreneurial orientation) and analyzed further using a one-way Analysis of Variance (ANOVA) (Vogt, 2005).

The second research question asked if there is a relationship between the self-perceived entrepreneurial orientation of academic deans and certain demographic
characteristics of academic deans at Upstate New York independent colleges and universities. Data from survey questions #1-7 and #9-11 were used for data analysis. Descriptive statistics, Pearson correlation coefficients ANOVAs, were computed to evaluate the data due to the demographic questions producing nominal, dichotomous, and interval ratio data (Huck, 2008). The statistical analysis determined the relationship or a statistical difference between participant’s entrepreneurial summary score scores in survey question #11 and certain demographic characteristics in survey questions #1-7 and #9-10.

The third research question asked if there was a relationship between the self-perceived entrepreneurial orientation of academic deans and entrepreneurial activities carried out in their school at Upstate New York independent colleges and universities. Data from survey questions #11 and #12 were used for data analysis. Survey question #12 asked academic deans to check a box if the activity is being carried out in their school. The data for survey question #12 was then sorted into yes/no answers to create a total entrepreneurial activity score based on the number of activities academic deans checked. There were 50 entrepreneurial activities in the survey. Entrepreneurial orientation and entrepreneurial activity are both interval ratio data; thus, Pearson correlation coefficients were computed to determine the relationship between participant’s entrepreneurial orientation in survey question #11 and participant’s entrepreneurial activity score in survey question #12 (Huck, 2008).

The fourth research question asked if there was a relationship between entrepreneurial activity carried out by academic deans and the discipline of a school (e.g., School of Arts and Sciences, School of Education, School of Business) at Upstate New
York independent colleges and universities. Data from survey questions #7 and #12 was used for data analysis. The discipline of a school asked in survey question #7 is nominal data that provided several mean scores, and entrepreneurial activity in survey question #12 is an interval ratio data that produced a raw score. Descriptive statistics and ANOVAs were computed to determine if there was a significant difference between entrepreneurial activity scores in survey question #12 and academic discipline of the school selected in question #7.

Research question five asked if there was a relationship between entrepreneurial activities of academic deans and changes in student enrollment since fall 2006 in New York State independent colleges and universities. Data from survey questions #8 and #12 were used for data analysis. Enrollment trends in survey question #8 were nominal data that provided several mean scores, and entrepreneurial activity in survey question #12 was an interval ratio data that produced a raw score. Descriptive statistics and ANOVAs were computed to determine if there was a significant difference between the academic dean entrepreneurial activity scores (i.e., low, medium, and high) in survey question #12 and enrollment patterns over the last five years in survey question #8. The student enrollment was divided into three categories (i.e., enrollment increased, enrollment decreased, and enrollment did not increase or decrease) and analyzed further.

Qualitative data analysis

A data analysis used in qualitative research is content analysis, which focuses on the substance of the text (Hsieh & Shannon, 2005). Qualitative content analysis can be described as “a research method for the subjective interpretation of the content of text data through the systematic classification process of coding and identifying themes or
patterns” (p. 1278). A content analysis was performed on the data collected from the interviews of academic deans.

Conducting an ongoing and reflective analysis of text can help a researcher gain a deeper understanding of qualitative data (Creswell, 2009; Creswell & Clark, 2011). A directed content analysis is used when existing theory and prior research is available on a phenomena, such as entrepreneurial leadership, yet is “incomplete or may benefit from further description” (Hsieh & Shannon, 2005, p. 1281). The researcher performed the following steps according to Hsieh and Shannon (2005) in analyzing the qualitative data from each interview of the academic dean: (a) transcribed the audio tapes from each academic dean interview, (b) read each transcription at least six times and highlighted all text that appeared to represent an emotional reaction, (c) coded all highlighted passages using predetermined codes from the survey, (d) categorized passages that were not with predetermined codes and gave them a new code, (e) generated a number of themes using the codes; (f) created further discussion using the themes in order to have a narrative passage that showed an interconnection between the themes; and (g) formulated the overall meaning or interpretation of the data through discussions of the findings using prior research and theory (Creswell; Creswell & Clark; Hsieh & Shannon).

**Mixed methods data analysis**

In a mixed methods study, integration refers to the mixing of the quantitative and qualitative data (Creswell & Clark, 2011). The first part of the integration of data in the proposed study occurred after the quantitative portion has been analyzed. The possible results of the quantitative data that were considered for follow-up in phase two of the study include: (a) statistically significant results, (b) key significant predictors, (c)
variables that distinguish between groups such as deans with a high entrepreneurial orientation versus a low entrepreneurial orientation, (d) outliers or extreme cases such as academic deans reporting to engage in an extremely high amount of entrepreneurial activity, and (e) distinguishing demographic characteristics (Creswell & Clark). Data integration occurred again following the analysis of the qualitative portion to fully integrate the results of both data collection methods and connecting the results from both methods occurs.

Summary

This chapter outlined the research design and methodology for the study. The overall intent of the study was to learn more about entrepreneurial characteristics and practices of academic deans. The primary purpose of this study was to examine whether or not there is a relationship between perceived entrepreneurial orientation of academic deans and certain demographic characteristics, entrepreneurial activity, discipline, and enrollment patterns at independent colleges and universities in Upstate New York. A secondary purpose was to explore how an academic dean gains an entrepreneurial orientation and their experience in developing and managing entrepreneurial activity in independent colleges and universities in Upstate New York.

An explanatory sequential mixed methods study was conducted that examined the entrepreneurial leadership and entrepreneurial activity of academic deans in Upstate New York. A total of 103 academic deans who oversaw an academic discipline or specialization were identified as the population for this study. This study utilized quantitative and qualitative forms of data collection and analysis. The instruments used in the data collection consisted of an online survey and interviews with three academic
deans from three different colleges and universities. Statistical analysis was conducted on the data from the surveys, and a content analysis was used to analyze the transcripts from the three interviews with academic deans. The mixed methods analysis consisted of merging the quantitative and qualitative data in order to fully integrate the results. The next chapter presents the findings for this study.
Chapter 4: Results

This study focused on the entrepreneurial characteristics and practices of academic deans. The primary purpose of this study was to examine whether a relationship exists between perceived entrepreneurial orientation of academic deans and certain demographic characteristics, entrepreneurial activity, discipline, and enrollment patterns at independent colleges and universities in Upstate New York. A secondary purpose was to explore how academic deans acquire an entrepreneurial orientation and engage in entrepreneurial activities in independent colleges and universities in New York.

This chapter presents the results of the study based on a statistical analysis of the responses to the study’s survey questionnaire and a content analysis of three personal interviews. The chapter has four sections. The first section discusses the analysis and results of the responses to the survey items in the context of the quantitative research questions. The second section describes the analysis and results of the responses to the interviews in the context of the qualitative guiding purpose. The analysis and results of the quantitative and qualitative responses in the context of the mixed methods research question is discussed in the third section. The final section provides a summary of the chapter.

Quantitative Results

Forty-two of the 103 academic deans contacted responded to the survey. After removing incomplete responses there were a total of 37 academic deans who completed the survey, which represents a 36% response rate. The response rate also includes
academic deans from 20 different independent colleges and universities in Upstate New York. The ethnicity of the respondents were 87.2% White, 7.7% Black or African American, 2.6% American Indian or Alaska Native, and 2.6% Hispanic or Latino.

The responses to the survey along with information collected from the Integrated Postsecondary Educational Data System (IPEDS) and Intelius (2011) are presented in this section. For purposes of the quantitative analysis, the dependent variable was the self-perceived entrepreneurial orientation of academic deans and the independent variables were demographic characteristics, entrepreneurial activity, academic discipline, and student enrollment. The level of significance was set at .05 for all statistical analysis in this study.

Research Question One

The first research question asked what the self-perceived entrepreneurial orientation of academic deans was in Upstate New York independent colleges and universities.

Research question 1 was answered by the replies of respondents to question 10 of the survey. This question utilized a four-point Likert scale asking academic deans to report how they perceived themselves in regard to 10 characteristics that were identified by the research (Riggs, 2005; Smith, 2009) as contributing to an entrepreneurial orientation. The Likert scale ranged from 0 (the characteristic is “not at all” descriptive of them) to 4 (the characteristic is “very” descriptive of them). The mean score and standard deviation of each of the 10 characteristics or attributes, for the 37 academic deans that completed the question, was calculated to determine the rank order of the characteristics.
The 10 characteristics of entrepreneurial orientation identified in the literature were:

1. Innovative
2. Risk Taker
3. Creative
4. Change Agent
5. Team Builder
6. Competitive
7. Opportunistic
8. Visionary
9. Proactive
10. Persuasive

The mean scores of each of the 10 entrepreneurial characteristics ranged from 3.57 to 4.51 regarding the academic deans’ perception of how the characteristics described them. The three highest mean scores of the entrepreneurial characteristics of participants were Team Builder, Proactive, and Change Agent. The three lowest mean scores of the entrepreneurial characteristics of the participants were Risk Taker, Competitive, and Opportunistic. Only one participant perceived an attribute as not at all characteristic and that was for Competitive, which also had the highest standard deviation (SD=1.07). These results are summarized in Table 4.1.
Table 4.1

Frequencies and Percentages of Perceived Entrepreneurial Orientation Characteristics of Academic Deans

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>n</th>
<th>n</th>
<th>n</th>
<th>n</th>
<th>n</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Innovative</td>
<td>0</td>
<td>2</td>
<td>5</td>
<td>14</td>
<td>16</td>
<td>4.19</td>
<td>.88</td>
</tr>
<tr>
<td>Risk taker</td>
<td>0</td>
<td>4</td>
<td>14</td>
<td>13</td>
<td>6</td>
<td>3.57</td>
<td>.90</td>
</tr>
<tr>
<td>Creative</td>
<td>0</td>
<td>2</td>
<td>5</td>
<td>15</td>
<td>15</td>
<td>4.19</td>
<td>.86</td>
</tr>
<tr>
<td>Change agent</td>
<td>0</td>
<td>0</td>
<td>6</td>
<td>12</td>
<td>19</td>
<td>4.35</td>
<td>.75</td>
</tr>
<tr>
<td>Team builder</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>14</td>
<td>21</td>
<td>4.51</td>
<td>.61</td>
</tr>
<tr>
<td>Competitive</td>
<td>1</td>
<td>4</td>
<td>13</td>
<td>10</td>
<td>9</td>
<td>3.59</td>
<td>1.07</td>
</tr>
<tr>
<td>Opportunist</td>
<td>0</td>
<td>3</td>
<td>10</td>
<td>14</td>
<td>10</td>
<td>3.84</td>
<td>.93</td>
</tr>
<tr>
<td>Visionary</td>
<td>0</td>
<td>0</td>
<td>6</td>
<td>14</td>
<td>17</td>
<td>4.30</td>
<td>.74</td>
</tr>
<tr>
<td>Proactive</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>15</td>
<td>19</td>
<td>4.43</td>
<td>.65</td>
</tr>
<tr>
<td>Persuasive</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>24</td>
<td>12</td>
<td>4.30</td>
<td>.52</td>
</tr>
</tbody>
</table>

To compute the total entrepreneurial orientation score the responses from each of the deans in survey question 10 were summed to provide a total entrepreneurial
orientation score that could range from 0 to 50. The participants’ entrepreneurial orientation score was then sorted into different groups (i.e., low entrepreneurial orientation, moderate entrepreneurial orientation, and high entrepreneurial orientation).

The mean total entrepreneurial score was 41.24 for all academic deans and the median was 41.00 with a SD of 4.87. The lowest total entrepreneurial score was 33 and the highest total entrepreneurial score was 50. The mean total entrepreneurial scores were then broken down into three different groups. A low entrepreneurial orientation score ranged from zero to 30, a moderate entrepreneurial orientation score ranged from 31 to 40, and a high entrepreneurial orientation score ranged from 41 to 50. Academic deans in this study reported moderate and high total entrepreneurial orientation scores. None of the participants reported having a low entrepreneurial orientation score. Sixteen deans reported a moderate total entrepreneurial score and 21 deans reported a high entrepreneurial score. Table 4.2 shows the frequencies and summary statistics for the total entrepreneurial orientation scores for academic deans based on the three different groups.
Table 4.2

*Frequencies and Summary Statistics for Total Entrepreneurial Orientation Scores*

<table>
<thead>
<tr>
<th>Total Entrepreneurial Orientation Score Range</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 – 30</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>31 – 40</td>
<td>16</td>
<td>43.24</td>
</tr>
<tr>
<td>41 – 50</td>
<td>21</td>
<td>56.76</td>
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</tbody>
</table>

**Summary Statistics**

<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th>Mdn</th>
<th>SD</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>41.24</td>
<td>41.00</td>
<td>4.87</td>
<td>33</td>
<td>50</td>
</tr>
</tbody>
</table>

**Research Question Two and Related Survey Items**

Research question 2 asked if there was a relationship between the self-perceived entrepreneurial orientation of academic deans and certain demographic characteristics of academic deans at Upstate New York independent colleges and universities. To answer this question the total entrepreneurial orientation score computed from survey question 10 was compared to data from the demographic survey questions 1, 3, 4, 5, 6, 8, 9 and the age data collected from Intelius. Intelius is a website that contains public records, including age, and provides services for individuals and businesses such as background checks and identity theft protection (Intelius, 2011).

Descriptive statistics and a Pearson product-moment correlation were calculated to examine the relationship between the academic deans’ age and the total entrepreneurial
orientation score. The total entrepreneurial orientation score was computed by summing
the responses from each dean in survey question 10 to provide a total entrepreneurial
summary score that could range from 0 to 50 for each dean. The age of 28 academic
deans was collected and entered into SPSS for further analysis.

The mean age for the academic deans in this study was 58 (SD=6.74) and the
mode was 52. The age of participants ranged from 41 to 68. A Pearson correlation was
calculated to examine the relationship between the age of participants and their total
entrepreneurial orientation score. A correlation that was not significant was found, (r (2)
= .153, p = .44). Age was not related to total entrepreneurial orientation scores of
academic deans in this study.

Survey question 1 asked the deans to select their gender. Descriptive statistics and
an ANOVA were computed to evaluate the relationship between gender and
entrepreneurial orientation of academic deans. The total entrepreneurial orientation score
was computed by summing the responses from each dean in survey question #10 to
provide a total entrepreneurial summary score that could range from 0 to 50 for each
dean.

Of the 37 academic deans that responded to question 1, 20 were male and 17 were
female. The entrepreneurial score for male academic deans in this study ranged from 33
to 50 with a mean entrepreneurial score of 39.95 and a standard deviation of 4.55. The
entrepreneurial orientation scores for female academic deans in this study ranged from 34
to 50 with a mean score of 42.76 and a standard deviation of 4.92. Table 4.3 represents
means and standard deviations for total entrepreneurial orientation scores for males and
females in this study.
Table 4.3

Means and Standard Deviations for Total Entrepreneurial Orientation Scores of Academic Deans by Gender

<table>
<thead>
<tr>
<th>Gender</th>
<th>n</th>
<th>%</th>
<th>M</th>
<th>SD</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>20</td>
<td>54.05</td>
<td>39.95</td>
<td>4.55</td>
<td>33</td>
<td>50</td>
</tr>
<tr>
<td>Female</td>
<td>17</td>
<td>45.99</td>
<td>42.76</td>
<td>4.92</td>
<td>34</td>
<td>50</td>
</tr>
</tbody>
</table>

An ANOVA was computed to determine if there was a statistically significant difference in the mean total entrepreneurial orientation scores of males and the mean total entrepreneurial orientation scores of females that participated in this study. The ANOVA resulted in a ratio of 3.27 which indicates the variance between the mean entrepreneurial orientation scores of males and females. There were no statistically significant differences found between the mean entrepreneurial orientation score of males and the mean entrepreneurial orientation scores of females, $F (1, 35) = 3.27, p = .08$.

Survey question 3 asked the dean to indicate the position held prior to becoming an academic dean. The prior positions reported by the 36 participants that answered the question were sorted into seven categories and then analyzed using descriptive statistics. To evaluate if there was a relationship between prior positions of an academic dean and total entrepreneurial orientation score, a one-way ANOVA was calculated. The total entrepreneurial orientation score was computed by summing the responses from each dean in survey question 10 to provide a total entrepreneurial summary score that could range from 0 to 50 for each dean.
The prior position held most frequently by the respondents in the study was Department Chair. The two prior positions held least frequently by respondents were Local/State/Federal Government Positions and Associate Provost. These two positions were reported by one respondent under the Other position category on the survey item. The mean scores of the total entrepreneurial orientation scores for the seven prior position categories showed a range of 37.50 to 44.00. The prior position with the highest mean total entrepreneurial orientation score was Dean, previous to current position (M=44, SD=5.20). Those participants that held previous Local/State/Federal Government Positions and Associate Provost had the lowest mean total entrepreneurial orientation score.

An ANOVA was computed to determine if there was a statistically significant difference in the prior positions of respondents and the mean total entrepreneurial orientation scores. The ANOVA resulted in a ratio of .86, which indicates the variance between the mean entrepreneurial orientation scores of all seven categories of prior positions. There were no statistically significant differences found between the mean entrepreneurial orientation score and prior position of academic deans, F (6, 30) = .86, p = .54. The summary statistics for the total entrepreneurial orientation scores of academic deans by category of previous position are listed in Table 4.4.
Table 4.4

*Means and Standard Deviations of Total Entrepreneurial Orientation Scores of Academic Deans by Category of Previous Position*

<table>
<thead>
<tr>
<th>Previous Position</th>
<th>n</th>
<th>M</th>
<th>SD</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dean, previous to current position</td>
<td>7</td>
<td>44.00</td>
<td>5.20</td>
<td>37</td>
<td>50</td>
</tr>
<tr>
<td>Associate Dean</td>
<td>10</td>
<td>40.70</td>
<td>5.06</td>
<td>35</td>
<td>49</td>
</tr>
<tr>
<td>Department Chair</td>
<td>12</td>
<td>41.75</td>
<td>4.39</td>
<td>36</td>
<td>47</td>
</tr>
<tr>
<td>Tenured Faculty</td>
<td>4</td>
<td>38.25</td>
<td>5.73</td>
<td>33</td>
<td>45</td>
</tr>
<tr>
<td>Other Higher Education Academic Position</td>
<td>2</td>
<td>37.50</td>
<td>4.95</td>
<td>34</td>
<td>41</td>
</tr>
<tr>
<td>Local/State/Federal Government Position</td>
<td>1</td>
<td>42.00</td>
<td>0</td>
<td>42</td>
<td>42</td>
</tr>
<tr>
<td>Other, Assistant Provost</td>
<td>1</td>
<td>40.00</td>
<td>0</td>
<td>42</td>
<td>42</td>
</tr>
</tbody>
</table>

The fourth question in the survey asked academic deans to indicate if they were considered to be the founding dean in their current position or a non-founding dean. A founding dean was described as “instrumental in the creation and establishment of the school.” Descriptive statistics and a one-way ANOVA were computed to evaluate the relationship between the total entrepreneurial orientation of founding deans and the total entrepreneurial orientation of non-founding deans. The total entrepreneurial orientation score was computed by summing the responses from each dean in survey question 10 to
provide a total entrepreneurial summary score that could range from 0 to 50 for each dean.

Seven of the 35 academic deans who answered this question indicated they were the founding dean and 28 academic deans indicated they were not founding deans. The mean score for the total entrepreneurial orientation score of the founding deans was 41.57 with a range of 33 to 47. The mean score for the total entrepreneurial orientation score of non-founding deans was 39.57 with a range of 34 to 50.

An ANOVA was computed to determine if there was a statistically significant difference between the mean total entrepreneurial orientation scores of participants who were a founding dean and those who were not a founding dean. The ANOVA resulted in a ratio of 1.17, which indicates the variance between the mean total entrepreneurial orientation scores of participants who reported they were a founding dean and those who did not report to be a founding dean. There were no statistically significant differences found between the mean total entrepreneurial orientation scores of participants that were founding deans and non-founding deans, $F (1, 34) = 1.173, p = .29$. Table 4.5 displays the summary statistics for the total entrepreneurial orientation scores for founding dean and non-founding deans.
Table 4.5

*Means and Standard Deviations of Total Entrepreneurial Orientation Scores by Founding Dean and Non-Founding Dean*

<table>
<thead>
<tr>
<th></th>
<th>n</th>
<th>%</th>
<th>M</th>
<th>SD</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Founding Dean</td>
<td>7</td>
<td>22.2</td>
<td>41.57</td>
<td>4.92</td>
<td>34</td>
<td>50</td>
</tr>
<tr>
<td>Non-Founding Dean</td>
<td>29</td>
<td>77.8</td>
<td>39.57</td>
<td>4.47</td>
<td>33</td>
<td>47</td>
</tr>
</tbody>
</table>

In survey question 5 academic deans were asked to indicate the academic discipline and specialization of their area of responsibility. Participants were divided into six discipline groups according to the academic discipline reported on the survey. The six disciplines were liberal arts, business/management, education, engineering, health sciences, and other. Descriptive statistics and an ANOVA were computed to evaluate the relationship between the total entrepreneurial orientation and each of the six discipline groups. The total entrepreneurial orientation score was computed by summing the responses from each dean in survey question 10 to provide a total entrepreneurial summary score that could range from 0 to 50 for each dean.

Of the 37 academic deans who responded to this question, the deans who identified business as their academic discipline and specialization for their area of responsibility had the highest number of respondents (n=7) and reported the lowest mean total entrepreneurial orientation score (M=39.15). The total entrepreneurial score for the six discipline groups ranged from 39.15 to 43.60. The respondents who indicated an
“Other” discipline category on the survey scored the highest mean total entrepreneurial orientation score of 39.15. Positions listed in the “Other” category included Interdisciplinary Studies and Information Technology. Table 4.6 includes the means and standard deviations of the total entrepreneurial orientation scores for the six academic discipline groups.

Table 4.6

*Mean and Standard Deviations of Total Entrepreneurial Orientation Scores by Academic Discipline of School of Academic Deans*

<table>
<thead>
<tr>
<th>Deans’ Academic Discipline of School</th>
<th>n</th>
<th>M</th>
<th>SD</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liberal Arts</td>
<td>4</td>
<td>41.75</td>
<td>7.67</td>
<td>33.00</td>
<td>50.00</td>
</tr>
<tr>
<td>Business</td>
<td>7</td>
<td>39.15</td>
<td>4.67</td>
<td>34.00</td>
<td>45.00</td>
</tr>
<tr>
<td>Education</td>
<td>6</td>
<td>41.50</td>
<td>3.94</td>
<td>36.00</td>
<td>46.00</td>
</tr>
<tr>
<td>Engineering</td>
<td>5</td>
<td>41.20</td>
<td>4.27</td>
<td>37.00</td>
<td>46.00</td>
</tr>
<tr>
<td>Health Sciences</td>
<td>5</td>
<td>42.20</td>
<td>4.60</td>
<td>37.00</td>
<td>47.00</td>
</tr>
<tr>
<td>Other</td>
<td>5</td>
<td>43.60</td>
<td>4.72</td>
<td>37.00</td>
<td>50.00</td>
</tr>
</tbody>
</table>

An ANOVA was computed to determine if there was a statistically significant difference in the mean total entrepreneurial orientation scores of participants and the six academic discipline categories of the participants. The ANOVA resulted in a ratio of .525, which indicates the variance between the mean entrepreneurial orientation scores of
participants and the six academic discipline groups. There were no statistically significant
differences found between the mean total entrepreneurial orientation scores of
participants and the academic discipline and specialization of their area of responsibility,
\( F(5, 26) = .525, p = .76. \)

In survey question 6 academic deans reported the number of years of experience
in their current position. The years reported by the academic deans were rounded to the
nearest whole number for analysis. For example, two deans who reported having .5 years
of experience were analyzed as having 1 year of experience in their job. Descriptive
statistics and Pearson product-moment correlations were calculated examining the
relationship between the academic deans’ total entrepreneurial orientation score and their
years of experience in their current position. The total entrepreneurial orientation score
was computed by summing the responses from each dean in survey question 10 to
provide a total entrepreneurial summary score that could range from 0 to 50 for each
dean.

The range of years of experience for the 28 participants that completed this
question was 1 year to 15 years. The mean number of years of experience was 4.42 (SD=
3.57). Seventy-nine percent of the respondents had 5 years of experience or less in their
current position as an academic dean and 21% of the respondents had 6 years or more
experience in their current position.

A Pearson correlation coefficient was calculated for the relationship between the
years of experience of respondents in their current position and their total entrepreneurial
orientation score. It was anticipated, based on the results of Riggs (2004), that there
might be a higher entrepreneurial orientation for deans with fewer years of experience,
thus a 1-tailed significance test (alpha=.05) was conducted. A significant negative correlation was found between the number of years in their current position and the total entrepreneurial orientation score of academic deans in this study, $r (26) = - .364, p = .028$ (1-tailed).

The Pearson correlation test makes an assumption that the scores were normally distributed, yet there was evidence that the years of experience variable was skewed due to an outlier in the data. The outlier in the years of experience variable was identified as a participant reporting 15 years of experience, which was 3 standard deviations above the mean. The data point was re-coded to the next highest value, which was 13 years of experience. The Pearson correlation coefficient was then recalculated for the relationship between the years of experience of respondents in their current position and their total entrepreneurial orientation score. A negative significant correlation was found between the number of years in their current position and the total entrepreneurial orientation score of academic deans in this study, $r (26) = - .391, p = .02$ (1-tailed). The coefficient of determination ($r^2$) indicated that 15% of the variability in entrepreneurial orientation scores was explained by the years of experience.

Survey question 7 asked deans to describe the enrollment pattern (e.g., total student head count) of their school since fall 2006 (i.e., the last five years). Based on the responses, academic deans were divided into three groups: (a) student enrollment increased in the school, (b) student enrollment decreased in the school, and (c) student enrollment did not increase or decrease. Descriptive statistics and a one-way ANOVA were computed to explore the impact of the enrollment pattern of the academic deans’ school on their total entrepreneurial orientation score as reported in the survey. The total
entrepreneurial orientation score was computed by summing the responses from each dean in survey question 10 to provide a total entrepreneurial summary score that could range from 0 to 50 for each dean.

Further analysis was conducted for this survey question by dividing academic deans into two enrollment pattern groups: (a) student enrollment increased in the school and (b) student enrollment remained the same or decreased. A one-way ANOVA was calculated to examine differences between these two enrollment pattern groups and total entrepreneurial orientation scores of the participants.

Thirty seven academic deans responded to the question on enrollment pattern. The group that indicated their enrollment pattern “increased over the last five years” had the highest number of respondents (n=25). The range for the total entrepreneurial orientation score of the three enrollment pattern groups was 37.83 to 42.28. The respondents reporting an increase in enrollment over the last five years had the highest mean total entrepreneurial orientation score of 42.28 and the respondents reporting that enrollment did not increase or decrease over the past five years reported the lowest mean total entrepreneurial score, 37.83. Table 4.7 displays the means and standard deviations of the total entrepreneurial orientation scores of academic deans for the three categories of student enrollment pattern.
Table 4.7

Means and Standard Deviations of Total Entrepreneurial Orientation Scores of

Academic Deans by Three Categories of Student Enrollment Pattern

<table>
<thead>
<tr>
<th>5 Year Enrollment Patterns Reported by Academic Deans</th>
<th>n</th>
<th>M</th>
<th>SD</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enrollment increased</td>
<td>25</td>
<td>42.28</td>
<td>4.35</td>
<td>35.00</td>
<td>50.00</td>
</tr>
<tr>
<td>Enrollment decreased</td>
<td>6</td>
<td>40.33</td>
<td>4.50</td>
<td>34.00</td>
<td>46.00</td>
</tr>
<tr>
<td>Enrollment did not increase or decrease</td>
<td>6</td>
<td>37.83</td>
<td>6.24</td>
<td>33.00</td>
<td>50.00</td>
</tr>
</tbody>
</table>

An ANOVA was computed to determine if there was a statistically significant difference in the mean total entrepreneurial orientation scores of participants and three enrollment pattern groups of the participants. The ANOVA resulted in a ratio of 2.29, which indicates the variance between the mean entrepreneurial orientation scores of participants and the three enrollment pattern groups. There were no statistically significant differences found between the mean total entrepreneurial orientation scores of participants and the pattern of enrollment of their school since 2005 when broken down into three enrollment groups, $F(2,34) = 2.29, p = .12$.

The enrollment pattern categories were then divided into two groups for further analysis. The first group included data from the academic deans reporting that enrollment increased over the last five years. The second group combined data from deans reporting
that enrollment did not increase or decrease with deans reporting that enrollment decreased over the last five years. Table 4.8 lists the means and standard deviations for the total entrepreneurial orientation scores for each of these two groups of enrollment patterns.

Table 4.8

*Means and Standard Deviations of the Total Entrepreneurial Orientation Scores of Academic Deans by Two Categories of School Enrollment Patterns*

<table>
<thead>
<tr>
<th>5 Year Enrollment Patterns Reported by Academic Deans</th>
<th>n</th>
<th>M</th>
<th>SD</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enrollment increased</td>
<td>25</td>
<td>42.28</td>
<td>4.35</td>
<td>35.00</td>
<td>50.00</td>
</tr>
<tr>
<td>Enrollment decreased OR enrollment remained the same</td>
<td>12</td>
<td>39.08</td>
<td>5.35</td>
<td>33.00</td>
<td>50.00</td>
</tr>
</tbody>
</table>

An ANOVA was computed to determine if there was a statistically significant difference in the mean total entrepreneurial orientation scores of participants and two enrollment pattern groups of the participants. The ANOVA resulted in a ratio of 3.75, which indicates the variance between the mean entrepreneurial orientation scores of participants and the two enrollment pattern groups of participants. There were no statistically significant differences found between the mean total entrepreneurial orientation scores of participants and the pattern of enrollment of their school since 2005 when broken down into two enrollment groups, $F (1, 35) = 3.75, p = .06$. 

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Survey question 8 asked if academic deans were expected to engage in entrepreneurial activities as part of their job responsibilities. Participants were divided into two groups based on whether they were or were not expected to engage in entrepreneurial activity. Descriptive statistics and a one-way ANOVA between groups were computed to explore the impact of the expectation to engage in entrepreneurial activity of academic deans on their total entrepreneurial orientation score as reported in the survey. The total entrepreneurial orientation score was computed by summing the responses from each dean in survey question 10 to provide a total entrepreneurial summary score that could range from 0 to 50 for each dean.

Of the 36 participants who responded to this question, the eight who reported they were not expected to engage in entrepreneurial activity had a mean total entrepreneurial orientation score of 37.86. The twenty-eight participants who reported they were expected to engage in entrepreneurial activity had a mean total entrepreneurial orientation score of 42.07. Table 4.9 lists the means and standard deviations of entrepreneurial orientation scores by job expectations for academic deans.
An ANOVA was computed to determine if there was a statistically significant difference in the mean total entrepreneurial orientation scores of participants and if they were expected to engage in entrepreneurial activity as part of their job responsibility. The ANOVA resulted in a ratio of 5.112, which indicates the variance between the mean entrepreneurial orientation scores of participants and the job expectation groups. A significant difference was found, $F(1, 34) = 5.112, p = .03$, between the two entrepreneurial job expectation groups and the mean total entrepreneurial scores. For this sample, those who were expected to engage in entrepreneurial activity as part of their job responsibilities reported a significantly higher self-perceived entrepreneurial orientation than those deans who were not expected to engage in entrepreneurial activity. A statistical summary is presented in Table 4.10.
A Levene’s test of equality of error variances was used to identify unequal error variances in the variables. A violation of assumption in the data was found (Levine’s F (1, 24) =4.8, p=.036). In order to control for the inequality in variances, a Welch’s test was then used to confirm any statistically significant differences in entrepreneurial orientation between academic deans expected to engage in entrepreneurial activity and those that were not expected to engage in entrepreneurial activity. A significant difference was still found between the two entrepreneurial job expectation groups and the mean total entrepreneurial orientation scores, Welch’s F (1, 21.5) = 9.58, p=.005, when controlling the equality of the variances.

Survey question 9 asked academic deans the degree of autonomy they feel they have in making decisions about the execution of entrepreneurial activity. Participants were divided into four groups according to their degree of autonomy (high degree, moderate degree, low degree, no autonomy). Descriptive statistics and a one-way ANOVA was computed to explore the impact of the reported academic deans’ degree of autonomy in making decisions about the execution of entrepreneurial activity on their
total entrepreneurial orientation score as reported in the survey. The total entrepreneurial orientation score was computed by summing the responses from each dean in survey question 10 to provide a total entrepreneurial summary score that could range from 0 to 50 for each dean.

Of the 37 academic deans who responded to this question, 15 reported a high degree of autonomy and 15 reported a moderate degree of autonomy in making decisions about the execution of entrepreneurial activity. Five deans reported a low degree of autonomy and two deans reported no autonomy in making decisions about the execution of entrepreneurial activity. Those respondents who reported having a high degree of autonomy in making decisions about the execution of entrepreneurial activity also had the highest mean total entrepreneurial score of 42.60. The lowest mean total entrepreneurial score was 39.40, reported by respondents indicating a low degree of autonomy in making decisions about the execution of entrepreneurial activity. Table 4.11 lists the means and standard deviations of entrepreneurial orientation scores by degree of autonomy in making decisions about the execution of entrepreneurial activity for academic deans.
Table 4.11

Means and Standard Deviations of Total Entrepreneurial Orientation Scores of Academic Deans by Degree of Autonomy

<table>
<thead>
<tr>
<th>Degree of autonomy</th>
<th>n</th>
<th>M</th>
<th>SD</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>High degree of autonomy</td>
<td>15</td>
<td>42.60</td>
<td>5.14</td>
<td>35.00</td>
<td>50.00</td>
</tr>
<tr>
<td>Moderate degree of autonomy</td>
<td>15</td>
<td>40.73</td>
<td>4.92</td>
<td>33.00</td>
<td>47.00</td>
</tr>
<tr>
<td>Low degree of autonomy</td>
<td>5</td>
<td>39.40</td>
<td>.71</td>
<td>34.00</td>
<td>46.00</td>
</tr>
<tr>
<td>No degree of autonomy</td>
<td>2</td>
<td>39.50</td>
<td>4.24</td>
<td>39.00</td>
<td>40.00</td>
</tr>
</tbody>
</table>

An ANOVA was computed to determine if there was a statistically significant difference in the mean total entrepreneurial orientation scores of participants and the degree of autonomy participants reported in making decisions about the execution of entrepreneurial activity. The ANOVA resulted in a ratio of .752, which indicates the variance between the mean entrepreneurial orientation scores of participants and the four levels of autonomy reported by the participants. There were no statistically significant differences found between the mean total entrepreneurial orientation scores of participants and the degree of autonomy the participants reported in making decisions about the execution of entrepreneurial activity, $F(3, 33) = .752, p = .53.$
Research Question Three

Research question three asked if there was a relationship between the self-perceived entrepreneurial orientation of academic deans and entrepreneurial activities carried out in their schools.

To answer this research question, descriptive statistics were analyzed for survey questions 11, 12, 13, 14, and 15. These questions asked academic deans to indicate which entrepreneurial activities were being carried out in their area of responsibility in five categories: (a) Educational Programs, (b) Partnerships, (c) Fundraising, (d) Intellectual Property, and (e) Small Business Development. The number and percent of academic deans who indicated that an entrepreneurial activity was carried out in their area of responsibility was calculated for each of the five entrepreneurial categories and is shown in Tables 4.12 through 4.16. The tables allow for a comparison between the most reported and least reported entrepreneurial activity of the 36 deans who responded to the entrepreneurial category questions.

Results of entrepreneurial activity categories. Survey question 11 asked deans to select from the 16 listed educational, program-related, revenue-generating activities that were being carried out in their area of responsibility. Of the 36 academic deans that responded to the question, new traditional undergraduate programs were reported the most (56%). Table 4.12 shows the number and percent of academic deans reporting educational program related entrepreneurial activities carried out by academic deans in this study.
Table 4.12

*Number and Percent of Academic Deans Reporting Educational Program Related Entrepreneurial Activities*

<table>
<thead>
<tr>
<th>Activity</th>
<th>Number of Academic Deans</th>
<th>Percent of Academic Deans</th>
</tr>
</thead>
<tbody>
<tr>
<td>New traditional undergraduate programs</td>
<td>20</td>
<td>56</td>
</tr>
<tr>
<td>New traditional graduate programs</td>
<td>19</td>
<td>53</td>
</tr>
<tr>
<td>(Masters level)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Distance education programs</td>
<td>19</td>
<td>53</td>
</tr>
<tr>
<td>New non-traditional undergraduate programs</td>
<td>17</td>
<td>47</td>
</tr>
<tr>
<td>New non-traditional graduate programs (Masters level)</td>
<td>17</td>
<td>47</td>
</tr>
<tr>
<td>Continuing education programs</td>
<td>17</td>
<td>47</td>
</tr>
<tr>
<td>Study abroad programs</td>
<td>16</td>
<td>44</td>
</tr>
<tr>
<td>Niche programs</td>
<td>12</td>
<td>33</td>
</tr>
<tr>
<td>Off-campus programs</td>
<td>11</td>
<td>31</td>
</tr>
<tr>
<td>New doctoral programs</td>
<td>11</td>
<td>31</td>
</tr>
<tr>
<td>Recruitment of foreign students</td>
<td>10</td>
<td>28</td>
</tr>
<tr>
<td>Educational seminars</td>
<td>7</td>
<td>19</td>
</tr>
<tr>
<td>Degree completion programs</td>
<td>6</td>
<td>17</td>
</tr>
<tr>
<td>Other (please specify):</td>
<td>5</td>
<td>14</td>
</tr>
<tr>
<td>Educational consulting</td>
<td>4</td>
<td>11</td>
</tr>
<tr>
<td>Degree programs in foreign countries</td>
<td>4</td>
<td>11</td>
</tr>
<tr>
<td>Contract education programs</td>
<td>4</td>
<td>11</td>
</tr>
</tbody>
</table>
Survey question 12 asked deans to select from six partnership related revenue
generating activities that were being carried out in their area of responsibility. Of the 36
academic deans who responded to the question, 32 reported that they engaged in
partnership entrepreneurial activities. Of those 32 responses, partnerships with outside
business were reported most frequently (63%). Table 4.13 shows the number and percent
of academic deans reporting partnership entrepreneurial activities carried out by
academic deans in this study.

Table 4.13

*Number and Percent of Academic Deans Reporting Partnership Entrepreneurial Activities*

<table>
<thead>
<tr>
<th>Activity</th>
<th>Number of Academic Deans</th>
<th>Percent of Academic Deans</th>
</tr>
</thead>
<tbody>
<tr>
<td>Partnerships with outside business</td>
<td>20</td>
<td>63</td>
</tr>
<tr>
<td>Partnership alliances with community projects</td>
<td>18</td>
<td>56</td>
</tr>
<tr>
<td>Partnerships with other international educational institution</td>
<td>16</td>
<td>50</td>
</tr>
<tr>
<td>Partnerships with domestic educational institutions</td>
<td>16</td>
<td>50</td>
</tr>
<tr>
<td>Partnership in joint ventures</td>
<td>4</td>
<td>13</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Investment with outside parties</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Survey question 13 asked deans to select from nine listed fundraising-related,
revenue-generating activities that were being carried out in their area of responsibility.
All of the 36 academic deans who responded to the question reported engaging in
fundraising activity. The grants category was the fundraising activity reported most frequently (63%) by the participants. Table 4.14 shows the number and percent of academic deans reporting fundraising entrepreneurial activities carried out by academic deans in this study.

Table 4.14

*Number and Percent of Academic Deans Reporting Fundraising Entrepreneurial Activities*

<table>
<thead>
<tr>
<th>Activity</th>
<th>Number of Academic Deans</th>
<th>Percent of Academic Deans</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grants</td>
<td>30</td>
<td>83</td>
</tr>
<tr>
<td>Alumni programs or events</td>
<td>28</td>
<td>78</td>
</tr>
<tr>
<td>Federal or private foundation support</td>
<td>25</td>
<td>69</td>
</tr>
<tr>
<td>Made request to donors for a special award or scholarship</td>
<td>21</td>
<td>58</td>
</tr>
<tr>
<td>Special events (e.g., lunches, hosting special dinners, golf tournaments)</td>
<td>19</td>
<td>53</td>
</tr>
<tr>
<td>Capitol campaign</td>
<td>17</td>
<td>47</td>
</tr>
<tr>
<td>Planned giving programs</td>
<td>14</td>
<td>39</td>
</tr>
<tr>
<td>Comprehensive campaign</td>
<td>8</td>
<td>22</td>
</tr>
<tr>
<td>Athletics related activities (e.g., team expansion, summer camps)</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td>1</td>
<td>3</td>
</tr>
</tbody>
</table>

Survey question 14 asked deans to select from three listed intellectual property-related, revenue-generating activities that were being carried out in their area of responsibility. Of the 36 academic deans who responded to the question, 28 academic
deans reported engaging in intellectual property-related activities. Of those 28 responses, grants were reported the most frequently (83%) by the participants. Table 4.15 shows the number and percent of academic deans reporting intellectual property entrepreneurial activities carried out by academic deans in this study.

Table 4.15

*Number and Percent of Academic Deans Reporting Intellectual Property Entrepreneurial Activities*

<table>
<thead>
<tr>
<th>Activity</th>
<th>Number of Academic Deans</th>
<th>Percent of Academic Deans</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grants</td>
<td>25</td>
<td>89</td>
</tr>
<tr>
<td>Research and technology transfer activity</td>
<td>20</td>
<td>71</td>
</tr>
<tr>
<td>Intellectual property licensing and patenting</td>
<td>12</td>
<td>43</td>
</tr>
<tr>
<td>Other (please specify):</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Survey question 15 asked deans to select from 16 listed small business-related, revenue generating activities that were being carried out in their area of responsibility. Of the 36 academic deans who responded to the question only 22 reported engaging in small business activities. Of those 22 responses, conducting training programs for businesses was reported most frequently (64%) by the participants. Table 4.16 shows the number and percent of academic deans reporting small business entrepreneurial activities carried out by academic deans in this study.
Table 4.16

*Number and Percent of Academic Deans Reporting Small Business Entrepreneurial Activities*

<table>
<thead>
<tr>
<th>Activity</th>
<th>Number of Academic Deans</th>
<th>Percent of Academic Deans</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conducting training programs for businesses</td>
<td>14</td>
<td>64</td>
</tr>
<tr>
<td>Conducting conferences and workshops for businesses</td>
<td>13</td>
<td>59</td>
</tr>
<tr>
<td>Counseling small business firms</td>
<td>9</td>
<td>41</td>
</tr>
<tr>
<td>Coordinating and conducting research into technical and general small business programs</td>
<td>8</td>
<td>36</td>
</tr>
<tr>
<td>Offering assistance with small business start-up</td>
<td>7</td>
<td>32</td>
</tr>
<tr>
<td>Assisting business in technology research</td>
<td>6</td>
<td>27</td>
</tr>
<tr>
<td>Offering specialty and high technology services to the business client</td>
<td>6</td>
<td>27</td>
</tr>
<tr>
<td>Providing special assistance to technology oriented firms</td>
<td>5</td>
<td>23</td>
</tr>
<tr>
<td>Establishing incubator businesses with businesses</td>
<td>4</td>
<td>18</td>
</tr>
<tr>
<td>Establishing for-profit companies</td>
<td>4</td>
<td>18</td>
</tr>
<tr>
<td>Assisting business with in product engineering</td>
<td>3</td>
<td>14</td>
</tr>
<tr>
<td>Offering product testing</td>
<td>2</td>
<td>9</td>
</tr>
<tr>
<td>Training for businesses with businesses</td>
<td>2</td>
<td>9</td>
</tr>
<tr>
<td>Providing businesses with patent searches</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Providing plant layout and design</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Offering feasibility studies</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Other</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
The total entrepreneurial activity score for each dean was computed by totaling the number of activities academic deans identified as being carried out in their area of responsibility for all five entrepreneurial categories. The total entrepreneurial activity score could range from 0 to 50 activities. Descriptive statistics and a Pearson product-moment correlation were calculated examining the relationship between the academic deans’ total entrepreneurial orientation score and the total entrepreneurial activity score. The total entrepreneurial orientation score was computed by summing the responses from each dean in survey question 10 to provide a total entrepreneurial summary score that could range from 0 to 50 for each dean.

Of a total of 50 entrepreneurial activities listed on the survey instrument, total entrepreneurial activity scores ranged from 3 (2.4%) to 32 (2.4%) for the 36 respondents who answered this question. Overall, academic deans reported a mean total entrepreneurial activity score of 16.08 entrepreneurial activities (SD=6.86, Mdn=15.5, Mo=9). Table 4.17 shows the descriptive statistics for all the entrepreneurial activity categories and total entrepreneurial activity scores of academic deans in this study.
Table 4.17

*Descriptive Statistics of Entrepreneurial Activities of Academic Deans within the Entrepreneurial Activity Categories*

<table>
<thead>
<tr>
<th>Entrepreneurial Category</th>
<th>Activities listed on the survey</th>
<th>n</th>
<th>M</th>
<th>Mdn</th>
<th>SD</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Educational Programs</td>
<td>16</td>
<td>36</td>
<td>6.56</td>
<td>6.50</td>
<td>2.28</td>
<td>3</td>
<td>11</td>
</tr>
<tr>
<td>Partnerships</td>
<td>6</td>
<td>32</td>
<td>2.56</td>
<td>2.50</td>
<td>1.14</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Fundraising</td>
<td>9</td>
<td>36</td>
<td>4.78</td>
<td>5.00</td>
<td>2.26</td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td>Intellectual Property</td>
<td>3</td>
<td>28</td>
<td>1.94</td>
<td>2.00</td>
<td>.73</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Small Business Development</td>
<td>16</td>
<td>22</td>
<td>4</td>
<td>3</td>
<td>3.25</td>
<td>1</td>
<td>11</td>
</tr>
<tr>
<td>All Activities</td>
<td>50</td>
<td>36</td>
<td>16.08</td>
<td>15.5</td>
<td>6.86</td>
<td>3</td>
<td>32</td>
</tr>
</tbody>
</table>

A Pearson product-moment correlation was calculated to examine the relationship between the academic deans’ total entrepreneurial orientation score and the total entrepreneurial activity score. There was positive correlation that was not significant between the total entrepreneurial orientation score and the summary entrepreneurial activity score of respondents, $r = .215$, $n=36$, $p = .21$. There was no significant statistical relationship between the self-reported entrepreneurial orientation of academic deans in this study and the total number of entrepreneurial activities they engage in at their institution.
Research Question Four

Research question 4 asked if there was a relationship between entrepreneurial activities carried out by academic deans and the academic discipline or specialization of their school (e.g., School of Arts and Sciences, School of Education, School of Business) at Upstate New York independent colleges and universities.

In survey question 5, participants were asked to indicate the academic discipline and specialization of their area of responsibility. Participants were divided into six groups according to the academic discipline reported on the survey. The six disciplines were liberal arts, business/management, education, engineering, health sciences, and other. The total entrepreneurial activity score for each dean was computed by totaling the number of activities participants indicated were being carried out in their area of responsibility for each entrepreneurial category. The total entrepreneurial activity score could range from 0 to 50 activities. Descriptive statistics and a one-way between groups analysis of variance was computed to explore the impact of the academic discipline of each dean on their total entrepreneurial orientation score as reported in the survey.

Of the 31 academic deans who completed this question, the academic discipline of Engineering had the highest mean total entrepreneurial activity score, 23.60 (SD=4.28). Academic deans who reported having a business management discipline had the lowest mean total entrepreneurial activity score of 13.43 (SD=8.23). Table 4.18 shows the means and standard deviations of total entrepreneurial activity score for each academic discipline of the participants who completed the survey.
<table>
<thead>
<tr>
<th>Academic Discipline</th>
<th>n</th>
<th>M</th>
<th>SD</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liberal Arts</td>
<td>4</td>
<td>16.00</td>
<td>8.23</td>
<td>5</td>
<td>25</td>
</tr>
<tr>
<td>Business Management</td>
<td>7</td>
<td>13.43</td>
<td>4.96</td>
<td>7</td>
<td>23</td>
</tr>
<tr>
<td>Education</td>
<td>5</td>
<td>17.40</td>
<td>5.32</td>
<td>10</td>
<td>23</td>
</tr>
<tr>
<td>Engineering</td>
<td>5</td>
<td>23.60</td>
<td>4.28</td>
<td>17</td>
<td>28</td>
</tr>
<tr>
<td>Health Sciences</td>
<td>5</td>
<td>15.20</td>
<td>5.12</td>
<td>9</td>
<td>23</td>
</tr>
<tr>
<td>Other</td>
<td>5</td>
<td>15.80</td>
<td>9.78</td>
<td>9</td>
<td>32</td>
</tr>
</tbody>
</table>

An ANOVA was computed to determine if there was a statistically significant difference in the mean total entrepreneurial activity scores of participants and academic discipline and specialization of their area of responsibility. The ANOVA resulted in a ratio of 1.62, which indicates the variance between the mean entrepreneurial activity scores of participants and the six academic disciplines reported by the participants. There were no statistically significant differences found between the mean total entrepreneurial activity scores of academic deans and the academic discipline and specialization of their responsibility, $F (5, 25) = 1.62, p = .12$. 
Research Question Five

Research question 5 asked if there was a relationship between entrepreneurial activities of academic deans and changes in student enrollment in their school since fall 2006.

Survey question 7 asked deans to describe the enrollment pattern (e.g., total student head count) of their school since fall 2006 (i.e., the last five years). Based on the responses, academic deans were divided into three groups: (a) student enrollment increased in the school, (b) student enrollment decreased in the school, and (c) student enrollment did not increase or decrease. The total entrepreneurial activity score for each dean was computed by totaling the number of activities academic deans indicated were being carried out in their area of responsibility for each entrepreneurial category. The total entrepreneurial activity score could range from 0 to 50 activities. Descriptive statistics and a one-way ANOVA was computed to explore the impact of the academic deans’ total entrepreneurial activity score on the student enrollment patterns of the school as reported in the survey.

Thirty six academic deans responded to the questions on entrepreneurial activity. The category of student enrollment patterns that had an increase over the last five years had the highest number of respondents (n=24). The range for the total entrepreneurial activity score of the three enrollment pattern groups was 12.00 to 17.08. The respondents reporting an increase in enrollment over the last five years had the highest mean total entrepreneurial activity score, 17.08. The respondents reporting that enrollment did not increase or decrease over the past five years reported the lowest mean total entrepreneurial score of 12.00. Table 4.19 displays the means and standard deviations of
the total entrepreneurial activity scores for the three enrollment categories of enrollment patterns reported by academic deans.

Table 4.19

Means and Standard Deviations of Total Entrepreneurial Activity Scores by Three Categories of Enrollment Patterns Reported by Academic Deans

<table>
<thead>
<tr>
<th>5 Year Enrollment Pattern</th>
<th>n</th>
<th>M</th>
<th>SD</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enrollment increased</td>
<td>24</td>
<td>17.08</td>
<td>6.90</td>
<td>3</td>
<td>32</td>
</tr>
<tr>
<td>Enrollment decreased</td>
<td>6</td>
<td>16.17</td>
<td>6.34</td>
<td>9</td>
<td>28</td>
</tr>
<tr>
<td>Enrollment did not increase or decrease</td>
<td>6</td>
<td>12.00</td>
<td>6.81</td>
<td>5</td>
<td>25</td>
</tr>
</tbody>
</table>

An ANOVA was computed to determine if there was a statistically significant difference in the mean total entrepreneurial activity scores of participants and the enrollment pattern (e.g., total student head count) of their school since fall 2006 (i.e., the last five years). The ANOVA resulted in a ratio of 1.38, which indicates the variance between the mean entrepreneurial activity scores of participants and the enrollment pattern of their school since fall 2006. There were no statistically significant differences found between the mean total entrepreneurial activity scores of academic deans and the enrollment pattern of their school since fall 2006, $F(2, 33) = 1.38, p = .28$.  

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Additional Quantitative Analysis

Further data analysis was conducted to determine if there was a relationship between the total institutional enrollments for each dean’s institution as reported in IPEDS for fall 2010 and the total entrepreneurial orientation score and the total entrepreneurial activity score of participants. Enrollment data reported on the IPED website was recorded by the researcher in December 2010 and used for the analysis. The mean institutional enrollment for academic deans in this study was 9,962 (SD= 9,205.42) with a range of 686 to 30,755.

The first part of the analysis, total entrepreneurial orientation, was tested for a relationship with the total institutional enrollment of each of the 37 respondents who completed this question.

A Pearson product-moment correlation was calculated examining the relationship between the academic deans’ total entrepreneurial orientation score and enrollment of the institution of academic deans. The total entrepreneurial orientation score was computed by summing the responses from each dean in survey question 10 to provide a total entrepreneurial summary score that could range from 0 to 50 for each dean. There was a positive correlation that was not significant between the entrepreneurial orientation score and the enrollment of the institution, r (2) = .227, p = .18.

The second part of the analysis involved testing the total entrepreneurial activity with the total enrollment of the 36 academic deans who responded to this question. A Pearson product-moment correlation was calculated to examine the relationship between the academic deans’ total entrepreneurial activity score and enrollment of the institution of the academic deans. The total entrepreneurial activity score for each dean was
computed by totaling the number of activities academic deans checked were being carried out in their area of responsibility for each entrepreneurial category. The total entrepreneurial activity score could range from 0 to 50 activities. There was positive correlation that was not significant between the entrepreneurial activity score and the enrollment of the institution variables, \( r (2) = .190, p = .27 \).

**Quantitative Results Summary**

The first section of Chapter 4 presented the results of the quantitative analysis for this study. An examination of the data revealed several significant relationships among self-perceived entrepreneurial orientation of academic deans in Upstate New York independent colleges and universities and certain demographic characteristics. The results indicated there are significant relationships with certain demographic variables of academic deans, such as years of experience and job expectation, with the self-perceived entrepreneurial orientation of academic deans. A qualitative analysis and the corresponding results of three academic dean interviews are presented in the next section.

**Qualitative Results**

This section describes the results from the analysis of interviews with academic deans in Upstate New York independent colleges and universities. The guiding purpose for the qualitative portion of the proposed study was to further explore the entrepreneurial orientation of an academic dean and his or her experience in developing and managing entrepreneurial activity in Upstate New York independent colleges and universities. The data for the qualitative section was collected through semi-structured interviews and a content analysis was conducted on the interview transcripts. The three academic deans in the purposive interview sample reported a high self-percieved entrepreneurial orientation
and a high amount of entrepreneurial activities in their area of responsibility in the survey.

The interviews were conducted with three Caucasian female deans employed at different types of colleges and universities. The deans reported to have between 1 and 3 years of experience in their current position and represented different academic disciplines. The first academic dean will be referred to as Rural Dean in this study as she worked in an institution located in a small town in a rural area of New York State. The second dean worked in a college in a suburban area with a focus on distance education, and will be referred to as Suburban Dean throughout this study. The third dean worked in a large research university and will be referred to as University Dean. The specific academic discipline and age of each dean will not be shared in order to protect the anonymity of the participants.

The survey and quantitative analysis were used to develop categories and priori codes which were then used in the identification themes through passages in the interview transcriptions (Hsieh & Shannon, 2005). The themes further describe the development of entrepreneurial orientation of academic deans interviewed and their experience in developing and managing entrepreneurial activity in higher education institutions. Content analysis was the method used to make inferences from the interview transcripts into meaningful themes in higher education (Krippendorff, 2004). The following themes were identified after an extensive content analysis: a) entrepreneurial orientation and life experiences, b) entrepreneurial academic deans know how to form relationships, collaborate, and build relational capital as a way to develop and nurture entrepreneurial activity, c) entrepreneurial academic deans know how to identify
opportunities, and e) academic deans exhibit collective accountability when assessing risks and rewards of entrepreneurial activity.

**Theme One: Entrepreneurial Orientation and Life Experience**

The first theme, Entrepreneurial Orientation and Life Experience, explored how participants described the development of their entrepreneurial characteristics. Stories were shared by participants that highlighted how different life experiences shaped their entrepreneurial orientation. The academic deans interviewed all believed they had an entrepreneurial orientation prior to becoming a dean at their institution. Much of the life experiences provided participants with entrepreneurial characteristics that they internally draw upon in their role as academic deans. For example, the Rural Dean described how her experience in a previous job showed her the importance of taking initiative and being proactive to develop financial resources:

Two years after I received my bachelor’s degree I began work at a contract research lab. That was a laboratory that had to basically go out to industries, write proposals, get money to do the work that we were doing and so that is where I really learned the whole process of you were not going to have a sugar daddy who was just going to give you money and you could be complacent with your budget. You had to hustle to get your money (Interview #1- p.3).

Entrepreneurship for this dean was developed in a former job by being assertive in gaining additional revenue. The rural dean believed her previous experiences in her career helped prepare her to be more entrepreneurial as an academic dean and have the skills to create and support new activities or programs to increase revenue or student populations.
The Suburban Dean also shared how a previous life experience helped develop her entrepreneurial orientation. She believed that convincing people was an entrepreneurial characteristic and she developed this skill in the business industry. In one of her work experiences she shared that:

As a trainer I’ve always had to convince people (Interview #2, p. 2). Convincing was described by the Suburban Dean as persuading others to buy a product, engage in a new behavior, or enroll in an academic program. This dean leaned on her experience of influencing others through being a trainer and a job coach to persuade faculty and other leaders at her institution to support entrepreneurial activities in her area of responsibility. These kinds of experiences have carried over to help her create and convince others to support entrepreneurial endeavors in her institution:

I was a job coach for [organization]. I developed a lot of leadership training and then had to train people from both union and non-union leadership positions. I worked one-on-one with senior managers too, where they had issues and we would try to work on those. So I’ve always been in the convincing role, if you will. Also I had worked at another school and did a lot of their marketing for them, so I would hold like a college fair open house, those kinds of things where you were really, literally trying to have people come in and learn about it, whether it was another school to learn about it or organizations and businesses or individual students, so it’s kind of a role I’ve been familiar with (Interview #2, p. 2).

Yet, the Suburban Dean did not feel this was a skill that comes naturally to a typical faculty member in higher education.
I think you may have more [of an entrepreneurial orientation] as a trainer than a professor. A college professor is there to give out information; sometimes they don’t feel they need to convince people of it. I’m giving it to you; you can accept it or not accept (Interview #2, p. 1).

The University Dean also shared how some faculty or other deans may not have an entrepreneurial orientation due to a career path focused only on academics:

They [other faculty and deans] were raised to be academics, I mean people …have come through career paths and that’s what they were hoping to do. So you thought you were prepared on this path and all of a sudden someone else comes in from a different perspective and really is your fellow academic and it’s like, well, are they really an academic? (Interview #3, p.10)

The University Dean’s perspective tended to be more business than academic. She developed her entrepreneurial orientation through life experiences surrounding family and career. At the beginning of the interview she stated,

So I am an entrepreneur—I just want you to know that, I had a start-up company for five years. Yes my whole family is, my father was, all my [siblings], everyone has companies (Interview #3, p.2)

The University Dean described how growing up in an entrepreneurial family helped her gain an entrepreneurial orientation:

So I grew up in a family in which I saw my father start his own company. He actually bought a company and then it was very, very small and it became a very large company. There were five kids, we all worked in it. I joke about it, I say I learned to color by coloring sales charts on Sundays while my father would write
regular reports to the sales people and there would be pie charts with colored pencils (Interview #3, p.6).

The University Dean believed the experience of watching her dad start a company and lead that company to become a highly successful organization helped her develop entrepreneurial characteristics. She shared that risks were taken as a family in order to support the company. After running a successful business she now manages her school very much like how she managed her company. She stated:

I run the school as a business; I mean it is business (Interview #3, p.6)

She did not think she would be able to be a dean if she could not manage her area of responsibility similar to a business. The life experiences shared by the women in this study helped form their entrepreneurial orientation, which can be observed in their entrepreneurial characteristics displayed and described in the interviews.

*Theme Two: Entrepreneurial Academic Deans Know How to Form Relationships and Collaborate to Build Relational Capital*

The deans in this study shared how they spend a great deal of their time reaching out to other professionals, organizations, academic departments, and other institutions to form relationships. Academic deans interviewed created new partnerships or collaborated with leaders in different organizations such as other colleges, research organizations, and businesses in order to build resources to accomplish their financial goals. Each participant voiced that forming external relationships was a key driver to increase revenue for their area of responsibility. Two deans felt it was expected of them in their role as academic dean.
The external relationships were developed by deans through different methods and focused on a variety of organizational fields. The rural dean shared that the dean is:

…the face of the college on the outside and so you are required to do a lot of work with alumni donors and corporate sponsorships and sponsored research and meeting with other institutions to define partnerships (Interview #1, p.5).

Creating partnerships was a consistent type of external relationship formed by academic deans in this study. The Suburban Dean went on to explain why developing a partnership was so important:

We do a lot of things to see where we can partner with businesses and organizations for a variety of reasons, one because we feel their target population is a good fit for us, for the college, for our school and the other reason is there is a lot of competition today for programs, so we are always on the outlook for where would we be a good fit and how could we approach the people without looking, we are not anxious to look like a sales organization, we are a college, but we do need to raise people’s awareness in many cases of what we have to offer (Interview #2, p.1).

The Suburban Dean sought to connect and build a trusting relationship with other organizations and businesses. She stated that she was expected to:

…be out in the community, out in the business arena where needed to make the contacts and raise people’s awareness of what we do, who we serve, what programs we have to offer. We try to build some sort of partnership relationship (Interview #2, p.3).
Academic deans described these relationships as something that is part of their job and necessary to increase revenue for their institution. There seemed to be a degree of job expectation for deans in the suburban and rural institutions to grow external relationships with community, business, research, and educational organizations.

Participants also described that entrepreneurial deans know how to be collaborative in relationships and work as a team. The Suburban Dean shared that entrepreneurial deans need:

…to be able to build rapport with people (Interview #2, p.6).

The University Dean agreed, saying that a dean:

…has to hear ideas from everywhere, I think you have to be very, very collaborative and no stove piping (Interview #3, p.5).

The Rural Dean shared that entrepreneurial deans need to be collaborative by seeing things from multiple viewpoints and shared a story in which she demonstrated how she was collaborative in developing an entrepreneurial activity:

I had a situation where I was going to lose a program because of poor performance; they were not getting the students in, right? At the same time I had an influential board member who had a pet project that was not a good match for us, okay? But being able to take [board members’] enthusiasm and channel it into a way that my other problem could get solved is one that I have done. So you have to go into these things [entrepreneurial activities] not having a rigid idea of how this problem is going to be getting solved but be able to take all of the people at the table and say, well what can I do for this person that is going to make them
happy and what can I do for this group that is going to make them happy and weave it together into a bigger story (Interview #1, p.2).

The Rural Dean shared that through collaboration the end result included:

…a portion of this person’s idea, a portion of this person’s idea and portions of this person’s idea…and to be able to weave those together to get a product where everyone can get a little bit of buy-in is a way to do that…through it[ collaboration] we were able to start down a new venture which is much more modern and much more in tune with today’s times. It is likely that we are going to end up with facility money to go forward and so it has the potential for really doing wonderful things for this school (Interview #1, p.2).

The Rural Dean utilized the relationship with an influential board member and her collaboration skills to create a new entrepreneurial endeavor and increase her relational capital with this board member. Relational capital is defined as the set of all relationships established between firms, institutions, and people that originate from a strong sense of belonging and a highly developed capacity of cooperation of culturally similar people and institutions (Capello & Faggian, 2005; Welbourne, & Pardo-del-Val, 2009). The external relationships described by the participants were created in order to build, manage, and increase revenue opportunities for their higher education institutions. The people and organizations that deans reach out to in order to form external relationships are important, but the actual “relationship” is the real benefit and has to be developed first. There is a need for academic deans to form these relationships and then collaborate in order to have resources and relational capital to utilize to increase entrepreneurial activities in their area of responsibility.
The academic deans interviewed in this study reported different ways in which external relationships and collaboration skills were utilized as a means to build relational capital. The rural dean focused on two key relationships:

With regard to raising funds what I spend my time a lot on actually is partnerships with corporations and trying to promote [discipline] research, okay, so that is probably the number one, and number two is corporate alumni donations, those were the two that I spent a lot of time on (Interview #1, p.8).

The dean from the suburban school shared that she engaged in entrepreneurial endeavors by working with:

…other colleges, community colleges, and businesses (Interview #2, p.1).

The University Dean developed relational capital through reaching out to businesses and organizations in the area but also throughout the country. She reached out to alumni in several national cities to build new relationships and increase awareness of the programs within her area of responsibility. The dean and university development representatives held events in cities all over the United States as a way to continue developing external relationships in a tough economic climate. In fact, she described these cities as:

…geographies of opportunity (Interview #3, p.15).

They attracted up to 150 people at each event and then utilized social media sources such as Facebook and Twitter to continue the relationship and recruit new students. The University Dean shared that by doing these events their enrollment increased:
We’ve got folks coming from all around the country, we didn’t use to have many students come from LA and it’s just going to keep going and going because then those people follow you [on Twitter or Facebook] (Interview #3, p.16).

**Theme Three: Entrepreneurial Academic Deans Know How to Identify Opportunities**

The interview participants discussed how they have to be able to recognize opportunities that could be potential entrepreneurial activities. The Suburban Dean shared that an entrepreneurial dean needs to:

…be able to think on their feet and just do what they are seeing, so if you see that somebody seems interested then you’ve got to take that opportunity to step in and deal with the situation rather than let it pass, I would say taking advantage of opportunities that present themselves (Interview #2, p. 6).

The Rural Dean went on to describe how she has to evaluate the opportunity costs of entrepreneurial endeavors presented by faculty:

Opportunity cost is something that a lot of faculty and academic administrators may not get right away. So, for example, you know faculty have creative ideas let’s do this, let’s do this, let’s do this. But then you are going to get so many hours in a day that you going to work and if you do this, it means you are not doing this and so somebody either is going to backfill that and so you have to weigh those opportunities (Interview #1, p.10).

The University Dean shared that entrepreneurial means a dean has to:

…recognize first of all what a good idea is, and then second, you know I mean…you have to really act on it, I mean you can’t have a good idea and do nothing with it (Interview #3, p.5).
Entrepreneurial deans know how to identifying an opportunity and then assess the opportunity costs in order to decide whether or not to engage in an entrepreneurial activity.

**Theme Four: Entrepreneurial Academic Deans Exhibit Collective Accountability When Assessing Risks and Rewards of Entrepreneurial Activity**

This theme explored the methods participants utilized when choosing whether or not to take a risk and pursue and engage in an entrepreneurial activity. The Suburban Dean stated:

I’m not sure you’re going to be much of a leader if you’re not much of a risk taker (Interview #2, p.11).

The deans in this study described that engaging in entrepreneurial activity involved a degree of risk, and when assessing the level of risk, they thought more about their institution, college, faculty, and staff rather than just themselves. They seemed to engage in collective accountability when making a decision to approve and move forward with a new entrepreneurial endeavor (Thompson, 2011). Collective accountability is described as “a leader who is accountable for the collective performance and productivity of an academic unit and how that unit contributes to the overall mission and goals of the larger institution” (Thompson, p.2). The University Dean described how she thought of the reputation of the school, but even more how taking a risk on an entrepreneurial activity may affect the faculty and staff:

My family used to think it’s [the business] a big group, I started with like six people in the company and grew it to a thousand and I thought about the same thing when I had [a] company – you actually feel responsible for the education of
everyone’s kids. So he would think about which kids he’s got to get through college, you know that’s what you think about. I mean I think you need that emotional attachment to your organization and to the people in it that you worry about…(Interview #3, p. 19).

The Rural Dean shared that risk taking is calculated and involves more than just herself.

I don’t think I take risks that are going to be devastating to the university, right? I definitely have my risk-taking ability go, what’s the worst if I take this risk and that worst thing happens, what’s going to be the end of it, right? (Interview #1, p. 12).

The interview participants also looked at the financial gain to their area of responsibility and the institution, not just the intrinsic and extrinsic individual rewards. The Suburban Dean shared that:

You have to be able to figure out how you could measure the results of the entrepreneurial activity and how it is going to benefit the college or the area of responsibility in a financial situation (Interview #2, p. 4).

The participants shared that academic deans assess opportunities and take risks in their role in the college or university yet they use a broader perspective. The collective accountability was also involved in assessing the rewards of entrepreneurial activity. Participants looked at how their faculty and area of responsibility was rewarded rather than focusing on the individual rewards. All deans interviewed agreed that if a portion of the revenue made from the entrepreneurial activity was returned to their area of responsibility they would be encouraged to continue in this type of activity. The Rural Dean described that being rewarded is helpful and by receiving all or a portion of the
revenue she and other faculty would be motivated to continue being entrepreneurial. She went on to state that rewards for faculty from an entrepreneurial activity may be even more important than for a dean. She said,

> If you are in a traditional or academic unit, you get paid to do your courses and you know what’s expected out of you and that’s it, its [entrepreneurial activity] not something that one would take on to go do, if there is no benefit. Because really you are taking on more work and you are not getting more compensation for it (Interview #1, p. 11).

The Rural Dean finished the conversation by pointing out that:

> If entrepreneurial activity is a good thing then it needs to have a reward system (Interview #1, p. 11).

The Suburban Dean also shared the importance of being rewarded for engaging in entrepreneurial activity and that the reward was a sign of being successful and would encourage her and others to continue this kind of activity. Yet she felt if a dean was discouraged each time he or she attempted to take a risk then it may prevent them from initiating future entrepreneurial activities or ideas:

> I think that if you have only got your head stepped down, or whatever term you like, a lot of times for risk taking you would probably not be a risk taker. I think being rewarded for risk taking is important, it does always turn out positive but if people can give you an 80% on it, that’s pretty rewarding (Interview #2, p. 9).

The University Dean shared a story in which she took a risk by offering a course that only had three students registered because she knew it was the right decision for her area of responsibility:
…the first time we got to offer it, it was a summer course only three students registered, so my associate dean said we ought to cancel, there was not much interest. I said no we are going to teach it, we now have like 400 students in the class. I can guess that is the entrepreneurial part of it—recognizing that this is going to be hot then investing in it, supporting it and now it’s booming. It’s so exciting (Interview #3, p. 4).

The University Dean also believed in rewarding people, and because the university had a decentralized budget, she had more control over distributing rewards for successful entrepreneurial endeavors. She identified an entrepreneurial group, in her area of responsibility, and stated:

So if I’ve got faculty who want to do something, I can support them and so it’s like I kind of get this buy-in from them because they know the better we do financially, then the more there is for them to do what they want to do (Interview #3, p.18).

The structure and control of her budget allowed her the ability and flexibility to reward faculty and administrators with financial incentives for being entrepreneurial.

Qualitative Analysis Summary

Three academic deans from independent colleges and universities in Upstate New York shared experiences about entrepreneurial orientation and entrepreneurial activity, which produced five themes. The first theme recognized that entrepreneurial orientation was developed through life experiences. All academic deans interviewed believed they had an entrepreneurial orientation prior to being in their current position. The second theme identified that entrepreneurial academic deans know how to form relationships,
collaborate, and build relational capital as a way to develop and nurture entrepreneurial activity. The relational capital was created by academic deans through external relationships with people such as alumni as well as with organizations such as businesses and other colleges or universities. The third theme recognized that entrepreneurial academic deans know how to identify opportunities. The fourth theme highlighted that engaging in entrepreneurial activity includes collective accountability when assessing risks and rewards. Entrepreneurial academic deans have a collective accountability to a wide range of people and groups such their institution, faculty, staff, and alumni when choosing to participate or support entrepreneurial activities. The themes provided a deeper level of understanding of the entrepreneurial orientation of academic deans and their experience in engaging in entrepreneurial activities. In addition, the themes offer a better understanding of the experiences of an entrepreneurial academic dean in Upstate New York independent colleges and universities.

*Mixed Methods Results*

A mixed methods study that focuses on the integration of qualitative and quantitative data needs to include a mixed methods question (Creswell & Clark, 2011). The mixed methods research question for this study was: In what ways do the qualitative results that report the views of academic deans about their entrepreneurial orientation and activity help to explain the quantitative results about entrepreneurial orientation and activity reported on survey? This section describes how the information from the interviews with the three academic deans and quantitative results from the survey were integrated to provide the researcher with a clearer understanding of the relationship between the entrepreneurial orientations and entrepreneurial activities of academic deans.
Triangulation occurred in this study through searching for validation and convergence by cross-checking both sets of data (Green, Caracelli, & Graham, 1989).

Meta-inferences were developed to further understand the problem of this study and connect the results in an explanatory mixed methods research design (Creswell & Clark, 2011). The meta-inferences from the quantitative and qualitative results described in this section addressed the mixed methods research question (Creswell & Clark). The merged data analysis comparison of qualitative themes to quantitative results further extended the scope of inquiry for this study and provided the following four meta-inferences:

1. Academic deans in this study reported team builder and proactive as the two highest self-perceived entrepreneurial characteristics on the survey. Similarly, a theme identified from the qualitative analysis was that entrepreneurial deans must know how to identify opportunities. This qualitative theme may further explain why being proactive was reported as a high entrepreneurial characteristic of academic deans on the survey used for this study. Based on the triangulation of these sets of data, the researcher postulates that once academic deans identify an opportunity, they must be, a team builder and proactive to ensure that opportunity translates into an entrepreneurial activity.

2. Risk taker being reported as the entrepreneurial characteristic with the lowest mean score on the survey by academic deans in this study (M=3.84, SD=.90). The fourth theme derived from the qualitative analysis was that entrepreneurial academic deans have a collective accountability to a wide range of people and groups such their institution, faculty, staff, and alumni. Academic deans with a collective accountability may not choose to engage in a risky entrepreneurial activity if it will negatively impact
their academic unit or institution. This inference may further explain why risk taker was not reported as the entrepreneurial characteristic with the highest mean as perceived by academic deans in this study. Based on this inference, the researcher postulates that academic deans may be averse to taking certain risks, particularly in institutions where there is a high degree of collective accountability.

3. A negative significant correlation was found between the number of years in the academic dean’s current position and the total entrepreneurial orientation score of academic deans, r (26) = -3.91. In other words, the entrepreneurial orientation of academic deans in this study appeared to decrease if they remained in the same position over an extended period of time. The academic deans who were interviewed for this study seemed to develop an entrepreneurial orientation through life experiences. The self-perceived entrepreneurial orientation may decrease the longer academic deans are in this role due to not having events or occasions which could provide them with opportunities to experience entrepreneurial practices. Therefore, academic deans may require entrepreneurial life experiences in order to perceive themselves as entrepreneurial and create revenue generating activities for their institution.

4. The quantitative analysis found that academic deans who were expected to engage in entrepreneurial activity as a part of their job responsibilities reported having a significantly higher self-perceived entrepreneurial orientation than those deans that reported they were not expected to engage in entrepreneurial activity, F(1,34) = 5.112, p = .03. The quantitative analysis indicated that 78% (n=22) of the respondents were expected to engage in entrepreneurial activity as part of their job requirements. A theme identified in the qualitative analysis was that academic deans know how to form
relationships, collaborate and build relational capital. Based on the triangulation of these sets of data, the researcher postulates that academic deans working in institutions which expect them to create external relationships may have higher self-perceived entrepreneurial orientations. In addition, academic deans with this type of job expectation may be more motivated to build relationships and collaborate to increase relational capital to utilize for entrepreneurial activity.

Table 4.20 illustrates the merged data analysis comparison of quantitative and qualitative results of this study.

Summary of Results

This study focused on the entrepreneurial characteristics and practices of academic deans. The primary purpose of this study was to examine whether a relationship exists between perceived entrepreneurial orientation of academic deans and certain demographic characteristics, entrepreneurial activity, discipline, and enrollment patterns at independent colleges and universities in Upstate New York. A secondary purpose was to explore how an academic dean gains an entrepreneurial orientation as well as their overall experience of engaging in entrepreneurial activity in independent colleges and universities in New York. This chapter presented the results of the study based on a statistical analysis of the responses to the study’s survey questionnaire and a content analysis of three personal interviews.
Table 4.20

Merged Data Analysis Comparison of Quantitative and Qualitative Results

<table>
<thead>
<tr>
<th>Quantitative Results</th>
<th>Qualitative Results</th>
<th>Meta-Analysis</th>
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<tbody>
<tr>
<td>Team builder (M=4.51, SD=.61) and proactive (M=4.43, SD=.65) were the entrepreneurial characteristics with the highest mean score reported on the survey.</td>
<td>Theme Three: The third theme recognized that entrepreneurial academic deans know how to identify opportunities.</td>
<td>Entrepreneurial academic deans are team builders, proactive and know how to identify opportunities for entrepreneurial activity.</td>
</tr>
<tr>
<td>Risk taker (M=3.84, SD=.90) was entrepreneurial characteristic with the lowest mean score reported by academic deans.</td>
<td>Theme Four: Entrepreneurial academic deans have a collective accountability when choosing to participate or support entrepreneurial activities.</td>
<td>Collective accountability may prevent an academic dean from taking risks related to entrepreneurial activity.</td>
</tr>
<tr>
<td>A negative significant correlation was found between the number of years in their current position and the total entrepreneurial orientation score of academic deans, r (26) = -3.91.</td>
<td>Theme One: Entrepreneurial orientation was developed through life experiences.</td>
<td>Academic deans may require entrepreneurial life experiences in order to perceive themselves as entrepreneurial and create revenue generating activities for their institution.</td>
</tr>
<tr>
<td>Deans expected to engage in entrepreneurial activity as a part of their job responsibilities reported having a significantly higher self-perceived entrepreneurial orientation than those deans that reported not expected to engage in entrepreneurial activity, F(1,34) = 5.112, p=.03.</td>
<td>Theme Two: Entrepreneurial academic deans know how to form relationships, collaborate and build relational capital.</td>
<td>Academic deans working in institutions which expect this position to create external relationships may have a higher entrepreneurial orientation and more motivation to build relationships that could increase relational capital for developing entrepreneurial activity.</td>
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The quantitative section revealed several significant relationships among self-perceived entrepreneurial orientation of academic deans in Upstate New York independent colleges and universities and certain demographic variables such as years of
experience and job expectation. The second section presented four themes derived from the analysis and results of the interviews with academic deans. The themes further described the development of an entrepreneurial orientation of academic deans and their experience in engaging in entrepreneurial activities. The third section addressed how the themes from the interviews provided further understanding and explanation of the quantitative results from the survey. Chapter 5 provides a discussion and interpretation of the findings in this study, as well as implications and recommendations for future research.
Chapter 5: Discussion

Introduction

Many colleges and universities are facing mounting enrollment challenges and difficult financial times due to the recession in 2007, changes in student demographics, and decreases in enrollments in several parts of the country (Edirisooriya, 2003; New York State Education Department, 2009; Smith, 2004; Thornton, 2009). These challenges can place additional financial pressure on leaders in colleges and universities to seek out alternate funding sources through entrepreneurial activities. Leaders in colleges and universities need to acquire entrepreneurial skills in order to meet the changes of a dynamic and competitive environment, if they are to be successful (Clark, 2000, 2004, 2008). Academic deans are in a vital leadership position to engage in entrepreneurial activity when faced with limited resources (Krahenbuhl, 2004). In addition, academic deans who have experience in leading successful entrepreneurial endeavors may make a positive impact on the financial health of an institution. The research problem of this study addressed the entrepreneurial leadership of an academic dean and their involvement in entrepreneurial endeavors in higher education institutions.

The focus of inquiry for this study was to learn more about entrepreneurial characteristics and practices of academic deans. The primary purpose of this study was to examine whether a relationship exists between perceived entrepreneurial orientation of academic deans and certain demographic characteristics, entrepreneurial activity, discipline, and enrollment patterns at independent colleges and universities in Upstate
New York. A secondary purpose of this study was to explore how academic deans acquire their entrepreneurial orientation and the extent of their overall experience in entrepreneurial activities in independent colleges and universities in New York. The research paradigm of the study was a sequential explanatory mixed-method design that allowed the researcher to gain a broader perspective of the role of academic deans in entrepreneurial activity in higher education institutions.

Chapter 5 presents a discussion and interpretation of the results found in Chapter 4 of this study. Chapter 5 is divided into four sections. The first section discusses implications of the findings from the survey and interviews of academic deans in independent colleges and universities in Upstate New York. The second section describes the limitations of the study. The third section includes recommendations for future research, organizational procedures, professional practice, and executive leaders in higher education. The final section provides a summary of the chapter.

*Implications of Findings*

The results from this study provide several implications related to academic deans and entrepreneurship in higher education institutions. The implications for professional practice of academic deans as well as the body of knowledge on entrepreneurship in higher education are discussed in this section. This section also discusses the findings of the study in the context of policy implications for educational leadership and academic programs in higher education institutions. The last section focuses on the findings of the study and implications for executive leaders in colleges and universities.
Many studies have addressed the entrepreneurial leadership of college presidents (Fisher & Koch, 2004; Peck, 1983; Riggs, 2005; Smith, 2009), yet few focused on academic deans. The findings of this study indicated that academic deans had a moderate to high entrepreneurial orientation with a mean total entrepreneurial score to be 41.24 out of a possible 50.00. This finding suggested that, on average, academic deans in the study perceived the following ten entrepreneurial characteristics as being mostly characteristic: innovative, risk-taker, creative, change agent, team-builder, competitive, flexible, visionary, proactive, and persuasive.

Results from the survey found that academic deans identified team builder as the highest ranked entrepreneurial characteristic. In the literature review, Clark (1998) described how leaders in entrepreneurial universities engage in “collective entrepreneurial action,” which is when “groups, large and small, central and departmental, of faculty and administrators (and sometimes students) can fashion new structures, processes, and orientations” (p. 4). This type of group action may lead to increases in resources and infrastructures (Clark). Consistent with Clark’s research, this study concluded that academic deans striving to create an entrepreneurial environment in their college or university through collective entrepreneurial action need to be team builders and work with leaders at all levels of an institution.

An additional entrepreneurial characteristic of academic deans derived from interview transcripts was the ability to identify opportunities. This finding supports Glassman et al. (2003) that recognized the existence and encouragement of people who can identify and take action on opportunities as a dimension that could influence the potential of academic entrepreneurship thriving and growing in a university. Therefore, if
academic deans are not team builders and able to identify opportunities, they may be less likely to successfully develop entrepreneurial activities and create new resources for their college or university. Moreover, academic deans who know how to identify opportunities and build strong leadership teams in their area of responsibility can be valuable to organizations seeking to expand entrepreneurial endeavors.

Risk taking was ranked the lowest entrepreneurial characteristic of academic deans in this study, which was also the lowest ranked characteristic reported by independent college presidents in studies conducted by Riggs (2005) and Smith (2009). However, contradictory to the survey results, academic deans expressed in the interviews the importance of being a risk taker in their position. What may prevent deans from describing themselves as a risk taker in the survey may be related to the fourth theme identified in the interviews: collective accountability (Thompson, 2011). If the groups and individuals an academic dean is accountable to are not supportive of entrepreneurial actions, it may prevent academic deans from supporting and developing entrepreneurial activity. Therefore, academic deans who can build support for entrepreneurial activity from the college or university president, alumni, members of their academic unit, and other groups for which they are responsible may be more likely to take risks and create more revenue sources.

The findings of this study also indicated the self-perceived entrepreneurial orientation of academic deans decreased with the number of years in the position. The interviews identified a theme that indicated entrepreneurial orientation may be developed through prior life experiences. This finding may imply that some academic deans are being hired after already having several entrepreneurial characteristics, but these
characteristics may decrease over time due to certain internal and external factors. For example, academic deans may need to have experiences, while in this position, that provide them with entrepreneurial opportunities to maintain and further develop their entrepreneurial orientation. A lack of entrepreneurial experiences may be due to certain challenges that were expressed by academic deans participating in the interviews. For example, there may be time constraints due to the demanding schedule of an academic dean. In addition, there may not be what the rural academic dean described as seed money:

Funding the seed portion of it [entrepreneurial activity] is another really large challenge in academia….our academic institution is not flushed with people. So you can engage in all sorts of things but what it comes down to is that there is a handful of people that will do entrepreneurial type activities so it is easy to overload them and what is not really available are the resources to throw in to try to grow things (Interview #1, p. 5).

These challenges could impact the entrepreneurial orientation of an academic dean over time and decrease their self perception of their entrepreneurial traits and skills. Therefore, the findings from this study suggest academic deans need supportive and available faculty as well as initial funding to develop entrepreneurial activities.

Montez et al. (2002) found that fiscal challenges such as budget and finance issues, distribution, and utilization of resources and fundraising were challenges for academic deans. A useful strategy to address these challenges, suggested by Montez et al., was for academic deans to strategically manage and secure financial resources. This study suggests another strategy for academic deans experiencing fiscal challenges. The
findings from this study may imply that more institutions are including specific entrepreneurial endeavors as part of the function of a dean and that these duties may impact a dean’s entrepreneurial leadership. Academic deans with clear guidelines and expectations on entrepreneurial initiatives may have less stress and more financial support to face fiscal challenges. The quantitative analysis of this study indicated that 78% (n=22) of the academic deans were expected to engage in entrepreneurial activity as part of their job requirements. Similarly, the results from the interviews conducted for this study revealed that entrepreneurial job expectations included developing external relationships, building partnerships, creating new academic programs, and fundraising. Based on these combined findings, the researcher postulates that academic deans with clear entrepreneurial job expectations may be better prepared to face financial challenges.

Expanding the Body of Knowledge

Consistent with Schultz’s (1980) research and entrepreneurial framework, the findings of this study suggest that academic deans develop relational capital through building external relationships. Schultz’s framework described entrepreneurship in higher education through individuals in academia as people who “invest their human and intellectual capital in creative and innovative strategies for gaining stability in the academy and in certain circumstances, the external markets that surround colleges and universities” (ASHE, p. 13). The findings in this study expand upon Schultz’s entrepreneurial framework by including relational capital as an additional resource of academic deans for achieving stability in the changing environment of higher education.

This study’s findings also inform Clark’s (2000, 2004) entrepreneurial framework that suggests that if universities adopt certain elements and concepts of transformation
they can become more entrepreneurial and better able to adapt to changes. Specifically, the results of this study support the *diversified funding base* element of Clark’s framework, which indicates entrepreneurial universities have more than one funding base. For example, the results of this study indicate that academic deans in Upstate New York independent colleges and universities are developing new streams of revenue through academic programs, partnerships, fundraising, intellectual property, and small business programs. In addition, the academic deans in the interview expressed the need to create more sources of revenue to support their area of responsibility. While Clark’s entrepreneurial framework was based on case studies of large universities, the findings of this study suggest that certain elements of Clark’s framework also may be applicable to independent colleges and universities seeking to promote, expand, and support entrepreneurial activities.

This study also expanded on the entrepreneurial leadership research in higher education by utilizing the same entrepreneurial orientation measurement tool as Riggs (2005) and Smith (2009) but with a new population of academic deans. The academic deans in this study reported a very similar total mean score of entrepreneurial orientation (M= 41.24, SD=4.87) as the independent college presidents in the study conducted by Smith (M=41.42, SD=4.74). Both samples were drawn from similar Upstate New York independent colleges and institutions. This comparison could imply that presidents and academic deans in independent colleges and universities in Upstate New York seem to perceive the ten entrepreneurial traits of the survey to be mostly characteristic of their behavior. Yet, the college and university presidents in the Smith study ranked the entrepreneurial characteristics differently than did academic deans in this study. Smith
found that college presidents ranked *persuasive* as the trait perceived as most characteristic. This study found academic deans to rank *team builder* as the highest trait. This variation in results may be related to the differences in roles, responsibilities, and entrepreneurial expectations for deans and presidents. For example, a college president, as the chief executive officer of an institution, may be required to be more persuasive in order to engage a broader range of internal and external publics and to secure buy-in and financial support for the mission of the institution. Conversely, an academic dean, as the chief academic officer of a school within an institution, may be required to be more of a team builder in order to build strong leadership teams of assistant deans, department chairs, faculty, and staff to get buy-in and support for entrepreneurial activities.

This study has added to the body of knowledge of entrepreneurial leadership in higher education by identifying the process of developing entrepreneurial activity for some academic deans (Fisher & Koch, 2004; Peck, 1983; Riggs, 2005; Smith, 2009). Academic deans need certain entrepreneurial skills to develop collaborative relationships. The collaborative relationships will support entrepreneurial activity and build relational capital with external organizations. Kale and Singh (2000) suggested that relational capital can be connections between individuals who rely upon close, respectful, and trusting interactions. The findings of this study indicate that some deans create relational capital through the development of external relationships. Often times, these relationships can serve as valuable resources or support for new entrepreneurial endeavors (Kale & Singh; Welbourne & Pardo-del-Val, 2009). This new conceptual approach for how academic deans can develop revenue-generating activities extends what is known in the
research on entrepreneurship in higher education institutions. A visual of the process for developing entrepreneurial activity of some academic deans is provided in Appendix K.

The findings of this study suggest that to create entrepreneurial activities, academic deans need to continuously develop collaborative relationships with leaders in external organizations in order to build relational capital. Academic deans, in this study, developed collaborative relationships through meeting with alumni and business leaders, reaching out to community organizations, as well as building liaisons with community colleges. The university dean in this study used social media sources such as Facebook and Twitter to develop external relationships. Academic deans who participated in the interviews for this study identified external relationships as an imperative for increasing entrepreneurial activities in their area of responsibility. This finding supports the recommendation by Krahenbuhl (2004) that indicates deans can be entrepreneurial by becoming more collaborative with other organizations through partnerships and alliances.

This study expands the body of research on entrepreneurial leadership in the field of higher education by examining the characteristics of academic deans who engage in entrepreneurial activities, including the development of external relationships (Fisher & Koch, 2004; Peck, 1983; Riggs, 2005; Smith, 2009). At the time of this study, the researcher did not find any studies focusing on academic deans and entrepreneurship in higher education institutions. The results of this study suggest that most academic deans are entrepreneurial leaders who are engaging in activities that generate income for their area of responsibility. The results for this study also provide further support for a 2006 report from The Association for the Study of Higher Education (ASHE), which indicated
that knowing more about how to execute entrepreneurial activity is a ground-breaking concept and a valuable topic for future research.

The role of an academic dean may be changing in higher education institutions as a result of increasing expectations relating to the development of external relationships (Masterson, 2011) to support their area of responsibility. Consistent with the findings of this study, the change may be stemming from academic deans shifting to more external initiatives rather than internal activities. Academic deans must be willing to reach out and form relationships in order to acquire additional financial support and to sustain and expand their academic programs. This study further expands this notion by suggesting that academic deans must also collaborate with leaders in external organizations to build relational capital.

Policy and Procedures

The findings of this study have implications for policies and procedures in higher education institutions. For example, colleges and universities concerned with increasing revenue sources may need to assess their budget models and the manner in which resources are allocated. The university dean in this study revealed a unique budget model in her interview called Responsibility Centered Management [RCM], which seemed to give her more control in making decisions regarding entrepreneurial activity. The RCM budget model is not new to higher education institutions and was first established at the University of Pennsylvania in the late 1970s (Resource Allocation and Governance, 2006). This budget model decentralizes the financial management and accountability within an institution and creates responsibility for revenue and expenses for centers or units that could be a school, an academic department, or an administrative department.
This model has the following three principles according to Whalen (1991): (a) all costs and income associated to a unit is allocated to that unit; (b) incentives are created for units in order to boost revenue, lower expense, and meet needs identified in the strategic plan of the institution; and (c) support or cost units, such as the library, share costs and receive income from the units that generate revenue (responsibility center). The university dean described how her institution adopted RCM:

Every school is responsible for their own bottom line…some schools that aren’t successful get some central money but what it is, you make your own decisions about what courses, what degrees are we are going to offer, how many staff we are going to hire, and how many faculty. It is not centralized (Interview #3, p. 5).

She believed this budget model worked for her because

…you can manage it yourself, it’s not somebody else making decisions...you control your own destiny. The interview with the university dean implies that budget control may have implications on entrepreneurial leadership and activities of academic dean (Interview #3, p. 5).

While this model is not meant to serve as the only solution for institutions, it seems (from the experiences of the university dean in this study) to provide more flexibility to act quicker and respond to as well as develop entrepreneurial endeavors.

This model shifts the role of an academic dean from someone who petitions central administration for more resources and focuses on management of academic operations to an academic leader overseeing the allocation and development of resources for an independent financial unit (McBride, Neiman, & Johnson, 2000). This change in financial responsibility may lead academic leaders to have a more “entrepreneurial mind
set” and be more innovative in accomplishing goals (McBride et al., p. 209). An RCM model may allow academic deans and faculty to be more involved in the budget process and understand the overall financial health of their college or university. If a college or university chooses to adopt RCM as a budget model, the institution must insure that there is effective leadership and agreed upon academic priorities that are linked with the overall institutional budget (Resource Allocation and Governance, 2006). Generally, RCM can assist academic leaders to think differently in making decisions about how to generate and encourage entrepreneurial activity within a college or university.

The findings in this study, which suggest that some academic deans are expected to engage in entrepreneurial activity as part of their job responsibility, could have contract implications for institutions in higher education. Contracts could facilitate or create barriers to an academic dean’s ability to engage in entrepreneurial activity. For example, possible facilitators that might assist an academic dean’s entrepreneurial ability include (a) autonomy, control, and accountability in managing the budget in their area of responsibility; (b) incentives or rewards for increasing revenue; (c) clear job expectations regarding revenue-generating activities; and (d) a reduction in teaching loads, in order to have time to create new entrepreneurial activities. Barriers in an academic dean’s contract that might impede entrepreneurial activity include the lack of (a) autonomy and control in managing the budget in their area of responsibility, (b) clear job expectations regarding revenue-generating activities, (c) incentives and rewards for creating new revenue sources, and (d) time to develop entrepreneurial activities. To this end, higher education institutions will need to assess how existing job contracts support or hinder an academic dean’s ability to develop and implement entrepreneurial activities.
Educational Programs

Academic programs in higher education administration and leadership may need to include courses related to entrepreneurial leadership and activity in higher education institutions to better prepare future academic leaders for financial challenges. For example, one of the elective courses offered in The Warner School of Education at The University of Rochester is titled The Entrepreneurial University. This course provides a historical and critical review of entrepreneurial universities as well as addresses topics such as how universities respond to fiscal resource tensions and entrepreneurial leadership and action (The University of Rochester, 2011).

Executive Leadership

The results from this study suggest the importance of trust for executive leaders in institutions of higher education. Kouzes and Posner (2002) found that when control is removed and a climate of trust is created, individuals are allowed to be more innovative and contribute to an organization. Trust, is engendered in colleges and universities when the viewpoints of academic deans are requested, considered, and valued in financial decisions. For example, the university dean in this study felt the institution demonstrated a high degree of trust based on its support of a decentralized and collaborative budget and financial model. If leaders of a college or university do not demonstrate trust in their academic deans, it may decrease a dean’s motivation and desire to be innovative, which could impact their entrepreneurial leadership and revenue-generating endeavors (Kouzes & Posner).

Trust is also essential in the development of external relationships and relational capital for academic deans (Kale & Singh, 2000). In order to develop, expand and sustain
relationships and relational capital with external constituencies, academic deans must understand the importance of trust in building relationships and relational capital as they seek to achieve the desired outcomes of their organization. Therefore, executive leaders in higher education institutions must learn how to develop trusting relationships and share power as they move up in their career because, “without trust you cannot get extraordinary things gone” (Kouzes & Posner, p. 244).

Limitations

This section describes the limitations of the study that may impact the results and findings. The scope of the study was limited to academic deans working in four-year independent colleges and universities in Upstate New York. The study included only those deans who oversaw a school or division of a particular discipline(s). Academic deans in public, for-profit, or two-year institutions were not included in this study. Thus, any generalizations that may be inferred are limited to academic deans, who oversee a school or division of a particular discipline(s), of independent colleges and universities in Upstate New York.

A second limitation is the small number of academic deans who participated in this study. There were 37 academic deans from a population of 103 in a specific geographic area (Upstate New York). The purposive sample for the interviews was also small and consisted of three academic deans who reported a high entrepreneurial orientation score and a high entrepreneurial activity score on the survey and agreed to be interviewed. The purposive sample consisted of female academic deans, yet they represented three different types of institutions in the field of higher education.
The culture or mission of the institution, number of full-time faculty overseen by the academic dean, or institutional budget models were not variables assessed in this study. Academic deans who had a low entrepreneurial orientation score or a low entrepreneurial activity score were not interviewed. These factors could impact the entrepreneurial orientation of academic deans as well as their ability to engage in entrepreneurial activities.

The ten entrepreneurial characteristics used to measure entrepreneurial orientation in this study had only been used on independent college and university presidents and were not pre-screened with academic deans. This could impact the validity of the instrument (Huck, 2007). However, the researcher used a panel of experts made up of current and former academic deans who agreed that the instrument was accurately representing what it intended to measure (Vogt, 2005). In addition, many of the entrepreneurial traits listed on the survey were shared as perceived characteristics of entrepreneurial deans in the interviews. Additional methodological limitations were listed in Chapter 3 of this study.

**Recommendations**

The findings of this study and the review of literature lead to several recommendations for future research, organizational procedures, professional practice, and executive leaders in institutions of higher education.

**Future Research**

Based on the results of the study, future quantitative studies might consider expanding the population to a larger geographic area and including academic deans from public colleges and universities. Several findings in this study may have been significant
with a larger sample. For example, academic deans who reported to have an increase in student enrollment over the last five years had a higher entrepreneurial orientation score than those deans who reported either no increase in student enrollment or student enrollment stayed the same. Conducting a study with a national population of academic deans may find significant relationships between changes in student enrollment and entrepreneurial orientation of academic deans.

Future research studies might also examine the different budget models used by institutions in higher education to determine the extent that certain models impede or promote entrepreneurial activities among academic leaders. This approach might provide new knowledge on the relationship between centralized and decentralized budget models and successful revenue-generating activities among academic deans. In addition, future research on entrepreneurial leadership in higher education might examine the impact of institutional culture and mission on the entrepreneurial capabilities of academic leaders.

Based on the results of this study, future qualitative studies might consider interviewing a diverse population of male and female academic deans to determine if there may be other barriers relating to gender or racial/ethnic differences that impact entrepreneurial leadership. Furthermore, future qualitative studies might consider interviewing academic deans with a low and moderate entrepreneurial orientation to discover other challenges and issues that prevent academic deans from engaging in entrepreneurial endeavors. Further research might also identify and examine relational capital factors that impede or contribute to entrepreneurial activities among academic deans in higher education institutions. A more in-depth examination of entrepreneurial activities in the context of relational capital factors may help to discover additional
challenges that academic deans face in developing entrepreneurial activities that support
revenue-generating opportunities.

Organizational Procedures and Policies

Based on the findings of this study, colleges and universities need to improve the
likelihood that prospective candidates for academic dean positions are prepared to
develop and implement entrepreneurial activities that support revenue-generating
opportunities. To achieve this outcome, the researcher recommends that colleges and
universities consider establishing search committees that are trained to assess candidates’
experiences and successes in developing and implementing entrepreneurial activities that
support revenue-generating opportunities. The selection criteria used by the search
committees should include the additional entrepreneurial characteristics identified in this
study, such as team builder and being proactive. Moreover, colleges and universities
should include entrepreneurial activities such as fundraising, developing external
relationships, and building partnerships in job postings and job descriptions for academic
deans. This recommendation is designed to improve the pool of potential candidates at
the front end of the employment process by clarifying and insuring alignment between
prospective candidates’ experiences and the needs and expectations of the higher
education institution.

In concert with the above recommendation, higher education institutions also
should consider creating a committee or task force to assist in the development and
support of revenue-generating campus initiatives. For example, New York University
[NYU] created a Revenue Re-Engineering Task Force in 2008 that concentrated on the
following four key areas: (a) clinical practice; (b) educational programs; (c) facilities; and
While individual schools were already engaged in entrepreneurial activities at NYU, this task force not only focused on broad university-wide opportunities but also utilized the talent and successes within each school. The report suggested a new culture be created at NYU called the Entrepreneurial Ecosystem. Other institutions of higher education may want to consider establishing similar task forces that are designed to increase entrepreneurial initiatives and awareness across the entire campus. As a campus-wide initiative, there would be increased opportunities for collaborative entrepreneurial ventures among departments and schools.

The academic deans who were interviewed in this study indicated that rewards for successful entrepreneurial activities encouraged them to continue to engage in this type of activity. Based on this information, the researcher recommends that higher education institutions consider creating incentive and reward opportunities for academic deans and the faculty in their schools. Rewards and incentives could be presented to academic deans, as well as faculty, for entrepreneurial activities, such as recruitment efforts, development of new academic programs, partnerships with other institutions, grants, and fundraising. The rewards and incentives could be monetary, such as returning a portion of the revenue generated from an entrepreneurial activity to the dean’s area of responsibility. The academic deans interviewed received all or a portion of the revenue earned from their efforts in some entrepreneurial endeavors. Rewards could also come in the form of public recognition for those who seek out and acquire new revenue sources for their individual school and the overall institution. Colleges and universities that create reward and incentive opportunities send a clear message that entrepreneurial activities are
important and will be encouraged, supported, and recognized by the institution’s leadership.

In addition to sending a clear message of an institution’s interest in and commitment to entrepreneurial activity, colleges and universities must provide professional development opportunities that increase the capacity of academic deans and faculty to develop entrepreneurial activities that generate new revenue sources. For example, professional development activities could focus on expanding knowledge and skills in areas such as program development and evaluation, grant writing, fundraising, and collaborating and building external partnerships and relationships. The career path of an academic dean and demands of the job do not always provide occasions for this type of knowledge and skill development. Yet, the results from this study clearly suggest that building relationships, collaborating, and building relational capital are essential to increasing revenue sources. Educational workshops, trainings, and opportunities for acquiring these skills must be available for academic deans and their faculties in order to create successful and sustainable entrepreneurial endeavors that enhance existing programs, create new programs, and generate new funding sources.

To increase the viability of entrepreneurial activities and insure implementation of the above recommendations, the researcher recommends that institutions in higher education consider creating a position that works closely with academic deans to assist in leading, creating, supervising, and managing entrepreneurial initiatives and opportunities. This position could report directly to an academic dean in a large university or to an administrative leader in smaller institutions. For example, at Indiana University, the Assistant Dean for Resource Management was created to support the Dean of the School
of Nursing with the development and deployment of resources (McBride et al., 2000). For smaller institutions, this type of position could be created to assist all academic deans and possibly department chairs in identifying opportunities and developing entrepreneurial activities.

A final procedures and policy recommendation for higher education institutions is to adopt a flexible budget model and create policies to allow academic deans more control and flexibility to develop new entrepreneurial activities. The RCM model decentralizes the institutional budget and provides full disclosure of the college or university finances (Whalen, 1991). This model is one way academic deans could gain more control of tuition revenue goals. Institutions in higher education need to include what the rural dean in this study described as seed funding in the yearly budget for each academic department. Based on the findings of this study and the experiences of the researcher, academic deans would be in a better position to create new resources if such funding was provided as part of each department’s or school’s annual budget. This yearly funding could also serve as an incentive for academic deans and their faculty to be more innovative and seek new sources of funding.

Professional Practice

Institutions in higher education may find that academic deans are able to respond to entrepreneurial opportunities quicker with a more flexible budget model. The findings in this study imply that entrepreneurial academic deans know how to identify entrepreneurial opportunities for their area of responsibility. A recommendation for the professional practice of academic deans is to develop or further enhance their skills in identifying entrepreneurial opportunities so that they may react more rapidly to financial
challenges. Academic deans may want to follow the path suggested by Ardichvilli, Cardozo, and Sourav (2003) to assist in discovering entrepreneurial opportunities. Ardichvilli et al. developed an opportunity identification triad to help independent business leaders take advantage of opportunities. This process may also assist academic deans in colleges and universities. The first part of the opportunity triad requires an academic dean to recognize potential revenue-generating ideas and opportunities (Ardichvilli). The second part calls for the dean to develop the idea as a way to meet a current need or problem and the last part of the triad involves evaluating the opportunity (Ardichvilli). The skill in identifying opportunities may not be well developed in some academic deans but could be very valuable in the creation and success of new revenue sources. Academic deans who can better understand how to assess an opportunity may be more informed and more comfortable in taking a risk on a new entrepreneurial venture.

Academic deans may also want to consider enhancing their skills and abilities in relationship building with alumni, board members, parents, and business and community leaders. Based on the results of this study, academic deans will not be successful at developing entrepreneurial activities if they sit behind a desk all day. Entrepreneurial academic deans are visible in the community and cultivating new relationships by serving as board members, attending community celebrations, and speaking at community organizations. Academic deans can also attend college and university functions such as board of trustee meetings, fundraising events, alumni programs and other events in order to expand their external relationships. Therefore, this study recommends academic deans evaluate and further develop their skills in creating external relationships to meet the academic and financial needs in their area of responsibility.
Executive Leadership

Executive leaders in higher education need to understand how to initiate cultural changes and garner institutional support as part of their entrepreneurial actions and endeavors. To initiate cultural changes and garner institutional support, the researcher recommends that executive leaders consider applying Bolman and Deal’s (2008) four frames of organizational perspectives when developing entrepreneurial initiatives. The four frames are structural, human resources, symbolic and political. By applying these frames executive leaders in higher education can be more strategic as they seek to initiate change and garner support for entrepreneurial initiatives. Bolman and Deal suggest that by looking at an organization through different frames, a leader can gain a more complete image of what is happening and what can be done to help it. Applying and using all four frames could help executive leaders in higher education gain more insight and a better understanding of entrepreneurial challenges and opportunities in the context of the changing nature of the internal and external environments in which they must operate.

An executive leader who develops entrepreneurial activities through Bolman and Deal’s (2008) structural frame is in a better position to ensure that entrepreneurial activities are connected to the organization’s mission and strategic plan. In addition, Deal’s structural frame provides an executive leader with a tool to assess what structures in the college or university can serve as barriers or facilitators for entrepreneurial endeavors. Bolman and Deal (2008) describe the human resource frame as focusing on human, intellectual and financial capital as well as the rights, responsibilities and rewards of people in the organization. Executive leaders in colleges and universities apply the human resource frame by aligning the needs of the organization, such as cutting costs,
with the needs of individuals, such as empowerment and support in creating entrepreneurial activities. The symbolic frame looks at organizational culture, symbols, ceremony and celebrations (Bolman & Deal, 2008). An executive leader in higher education could create incentives and rewards for those individuals that develop new entrepreneurial activities. A symbolic frame assumption is that “culture forms the superglue that bonds organizations, unites people, and helps an enterprise accomplish desired ends” (p. 253, Bolman & Deal). Thus, executive leaders in higher education who implement positive symbolic gestures that promote entrepreneurial activities will create a more entrepreneurial culture on campus.

In the political frame Bolman and Deal (2008) describes how power sources and distribution of power can cause issues within organizations. The outcomes of the interviews conducted with academic deans in this study revealed that were significant political challenges to gaining approval and financial support for entrepreneurial activities. Montez et al. (2002) found academic deans identified external and political relations to be important, yet may cause conflict and uncertainty in their job. Therefore, an executive leader in colleges and universities must be clear on what they want and how they can get it, and create linkages with important financial decision makers, and evaluate the power relationships that may impede or promote entrepreneurial endeavors (Bolman & Deal). In other words, the degree and nature of campus politics must be considered in order to garner support for entrepreneurial endeavors and buy-in from leaders across the campus. The political frame seems to be critical in overcoming the fiscal challenges deans face (Montez et al.), yet all frames can serve as valuable tools for executive leaders in higher education.
Conclusion

Independent colleges and universities are experiencing financial challenges due to a decline in the national economy, shrinking student enrollments, changes in demographics, and a possible decline in high school graduates (Edirisooriya, 2003; New York State Education Department, 2009; Smith, 2004; Thornton, 2009). These challenges create a need for academic leaders to consider alternative sources of revenue, other than tuition and endowment, to make positive financial impacts for their college or university (Eckel, 2007). Academic deans are in a leadership position that could influence the financial health of an institution.

The primary purpose of this study was to examine whether a relationship exists among perceived entrepreneurial orientation of academic deans and certain demographic characteristics, entrepreneurial activity, discipline, and enrollment patterns at independent colleges and universities in Upstate New York. A secondary purpose of this study was to explore how academic deans acquire their entrepreneurial orientation and the extent of their overall experience in entrepreneurial activities in independent colleges and universities in Upstate New York. The research paradigm of the study was a sequential explanatory mixed-method design that assisted the researcher in achieving these purposes and providing new information to academic deans in higher education institutions.

The findings of this study suggest that academic deans can be entrepreneurial leaders and engage in different entrepreneurial endeavors to address financial challenges of colleges and universities. While several studies reported that college and university presidents have an entrepreneurial orientation (Riggs, 2005; Smith, 2009), this study discovered that some academic deans have entrepreneurial characteristics as well. The
first key finding, of the quantitative results, found that academic deans ranked team builder and proactive as the highest self-perceived entrepreneurial characteristics. The second key finding from the quantitative portion of this study suggested that (a) academic deans’ self-perceived entrepreneurial orientation decreased the longer they are in their position and (b) academic deans who were expected to engage in entrepreneurial activities, based on their job descriptions, have a higher self-perceived entrepreneurial orientation. These results imply that academic deans in Upstate New York are being hired with entrepreneurial characteristics and that some demographic variables could impact their entrepreneurial leadership.

Several key findings were found from the qualitative phase of this study. The results from the qualitative portion suggested that the entrepreneurial orientations of academic deans are developed through life experiences. A second key finding from the qualitative results in this study was that the entrepreneurial academic deans have a collective accountability when choosing to participate or support entrepreneurial activities. The qualitative findings also suggest that entrepreneurial academic deans know how to identify opportunities and form collaborative relationships that can lead to relational capital (Thompson, 2011; Welbourne & Pardo-del-Val, 2009). The qualitative findings offered practical knowledge to academic leaders in higher education by identifying a new conceptual approach for how academic deans can create new revenue sources for their college or institution.

The results from this study support and expand entrepreneurial research in higher education by focusing on a new population, academic deans (Clark, 1998, 2000, 2004; Fisher & Koch, 2004; Glassman et al., 2003; Peck, 1984; Riggs, 2005; Smith, 2009).
Recommendations were described to assist colleges and universities in reducing financial challenges such as adopting a de-centralized budget system and developing a reward structure for academic deans who create successful entrepreneurial activities. The findings and recommendations in this study provide knowledge, tools, and processes that may be helpful to academic deans in becoming entrepreneurial leaders and engaging in revenue-generating activities at higher education institutions.

This study implies that academic deans may need the support of other academic leaders within a college and university to cultivate external relationships and develop new revenue sources. It is essential for college and university presidents to provide more flexibility in budget control, further clarification as to entrepreneurial expectations, and financial support for new entrepreneurial endeavors. Board of trustees of institutions of higher education must also be encouraging and supportive of new ventures to allow academic leaders to take calculated risks to increase revenue sources.

Academic deans must form trusting relationships and collaborate with individuals to build relational capital to meet the financial challenges in higher education institutions. The relationships formed by deans can provide them with more entrepreneurial experiences and opportunities for new sources of revenue. Academic deans must be ready to adapt to tough economic times by developing entrepreneurial characteristics and skills as well as know how to generate entrepreneurial activities. Based on the findings of this study, the researcher concludes that to maintain the financial viability of independent colleges and universities and to sustain and expand academic programs in their schools, academic deans must be entrepreneurial leaders who approach challenges as
opportunities and have the skills, knowledge, and dispositions to engage both internal and external publics.
References


Masterson, K. (2011). For deans, off-campus is now the place to be. The Chronicle of Higher Education.


Appendix A

Types of Collaborative Degree Programs

1. Builder: Partnerships in which an easy transition for people is created to help them move from one educational level to the next such as a degree-completion program or a K-16 program.

2. Broker: When institutions come together to share different parts of a program to meet a need or demand for services. Colleges and universities that extend a degree program to another institution that does not offer that degree program is an example of broker collaboration.

3. Ballerina: Combining current academic programs together from different institutions while at the same time still operating independently. Examples tend to be when faculty teach each others’ courses or when colleges list each other’s courses in different academic programs.

4. Baker- Colleges and universities partner together and focus on a shared need which results in a new program for both institutions. A joint-degree program is an example of a baker collaboration.

(Stein & Short, 2001)
Appendix B

Sequential Explanatory Mixed Methods Design for Study
(Ivankova, Creswell, & Stick, 2006).

<table>
<thead>
<tr>
<th>Phase</th>
<th>Procedure</th>
<th>Outcome</th>
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</thead>
<tbody>
<tr>
<td>QUANTITATIVE Data Collection</td>
<td>Web-based survey to all academic Deans in Upstate New York (sample to include everyone in population)</td>
<td>Numeric Data</td>
</tr>
<tr>
<td></td>
<td>SPSS-frequencies, percentages, Pearson correlation coefficients -Descriptive statistics</td>
<td>- Correlation -ANOVA(one-way)</td>
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<tr>
<td></td>
<td>-Selecting those that report to be highly entrepreneurial on survey -Criteria for purposive sample of academic deans for full representation (i.e. gender, age, etc.)</td>
<td>-Interview participants -Developing interview questions -Interview protocol</td>
</tr>
<tr>
<td></td>
<td>Individual in-depth interviews Conducted in person</td>
<td>-Text data (interview transcript)</td>
</tr>
<tr>
<td></td>
<td>-Coding and thematic analysis with qualitative computer software -Cross thematic analysis themes</td>
<td>-Codes and themes -Similar and different</td>
</tr>
<tr>
<td></td>
<td>-Find the meaning and explain results the quantitative and qualitative data analysis</td>
<td>-Discussion based on \ -Implications for higher education -Future research</td>
</tr>
</tbody>
</table>
Appendix C

NY Independent College and Universities with Academic Deans

(Excludes colleges and universities in the New York City and Long Island regions)

<table>
<thead>
<tr>
<th>College Name</th>
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<tbody>
<tr>
<td>Alfred University</td>
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<tr>
<td>Canisius College of Buffalo</td>
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<tr>
<td>Clarkson University</td>
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<tr>
<td>Concordia College</td>
</tr>
<tr>
<td>Cornell University</td>
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<tr>
<td>Culinary Institute of America</td>
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<tr>
<td>D’Youville College</td>
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<tr>
<td>Excelsior College</td>
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<td>LeMoyne College</td>
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<tr>
<td>Iona College</td>
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<td>Manhattanville College</td>
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<tr>
<td>Medaille College</td>
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<tr>
<td>Nazareth College</td>
</tr>
<tr>
<td>Niagara University</td>
</tr>
<tr>
<td>Paul Smith’s College of Arts</td>
</tr>
<tr>
<td>Rensselaer Polytechnic Institute</td>
</tr>
<tr>
<td>Rochester Institute of Technology</td>
</tr>
<tr>
<td>Sienna College</td>
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<td>St. John Fisher College</td>
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<tr>
<td>Syracuse University</td>
</tr>
<tr>
<td>The College of New Rochelle</td>
</tr>
<tr>
<td>University of Rochester</td>
</tr>
<tr>
<td>Utica College</td>
</tr>
</tbody>
</table>
Appendix D

Smith (2009) Consent

**From:** Gary Smith [mailto:gsmith@keuka.edu]
**Sent:** Monday, April 26, 2010 8:39 PM
**To:** Cleverley-Thompson, Shannon P
**Subject:** Re: Permission to Use Dissertation Survey

Ms. Cleverly-Thompson,

I agree to your use of the survey from my dissertation, “An Examination of Entrepreneurial Activity in Independent Colleges and Universities in New York State: A Presidential View of Entrepreneurial Leadership”.
Best wishes with your research.
Dr. Smith

On Mon, Apr 26, 2010 at 2:40 PM, Cleverley-Thompson, Shannon P <spc03677@sjfc.edu> wrote:
Dear Dr. Smith:

I am a doctoral student at St. John Fisher College’s Executive Leadership Program in Rochester, NY. I have been granted permission by my dissertation committee to conduct research on the topic of Entrepreneurial Leadership of Academic Deans in Western New York. I am requesting your permission to use the survey from your dissertation, “An Examination of Entrepreneurial Activity in Independent Colleges and Universities in New York State: A Presidential View of Entrepreneurial Leadership”.

Additionally, I am requesting your permission to modify parts of the survey into a questionnaire for academic deans that will be used in the quantitative portion of my research.

Thank you.

Best Regards,

Shannon Cleverley-Thompson

Ed.D. Graduate Assistant- Executive Leadership
Ralph C. Wilson, Jr. School of Education
St. John Fisher College
3690 East Avenue
Rochester, NY 14618
PH: (585) 899-3853
Appendix E

Riggs (2005) Consent

From: Diana [mailto:dianariggs@comcast.net]
Sent: Sunday, May 09, 2010 5:30 PM
To: Cleverley-Thompson, Shannon P
Subject: Re: Permission to Use Dissertation Survey

Hello Shannon,
You have my permission to use my survey for your doctoral study. I wish you much success with your research.
Diana Riggs
www.DianaRiggs.net
www.serendipityontheshore.com
412-414-7777

----- Original Message ----- 
From: Cleverley-Thompson, Shannon P
To: dianariggs@comcast.net
Sent: Saturday, April 24, 2010 1:27 PM
Subject: Permission to Use Dissertation Survey

Dear Dr. Riggs:

I am a doctoral student at St. John Fisher College’s Executive Leadership Program in Rochester, NY. I have been granted permission by my dissertation committee to conduct research on the topic of Entrepreneurial Leadership of Academic Deans in Western New York. I am requesting your permission to use the survey from your dissertation, “Entrepreneurial Activities in Independent College and University Presidents: A View From the Top”.

Additionally, I am requesting your permission to modify parts of your survey into a questionnaire for academic deans that will be used in the quantitative portion of my research.

Thank you.

Best Regards,

Shannon Cleverley-Thompson

Ed.D. Graduate Assistant- Executive Leadership
Ralph C. Wilson, Jr. School of Education
St. John Fisher College
3690 East Avenue
Rochester, NY 14618
PH: (585) 899-3853
Appendix F

Survey Validation Form

INSTRUCTIONS: The following is a review of the survey instrument questions with reference to the research questions. Please rank each survey question on a scale of 1 to 5 with 1 being not essential and 5 being most essential to addressing the research question. In addition, please note if you believe the survey question is clearly written and provide any comments and suggestions for refinement in the space available. The last page is a list of open-ended questions for you to provide overall feedback. Please write or type directly in the text boxes provided for each question.

PART I: Demographic Data

Research Question: Is there a relationship between the number of revenue generating entrepreneurial activities at Upstate New York independent colleges and universities and certain demographics among academic deans? (Survey Question #1, 2, 3, 4, 5, 6, 7, and 8)

Research questions #1, 2, 3, 4, 5, 6, 7, and 8 are intended to elicit demographic data to determine if there is a correlation between certain demographic variables and entrepreneurial activity.

1. Gender:
   a. ___Male  
   b. ___Female

<table>
<thead>
<tr>
<th></th>
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<th>Essential</th>
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<tbody>
<tr>
<td>1.</td>
<td>2.</td>
<td>3.</td>
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</tbody>
</table>

Clearly written: YES NO

Comments/suggestions for refinement:

2. Age Group:
   a. ___44 and Under
   b. ___45-55
   c. ___56 – 60
   d. ___61+

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<thead>
<tr>
<th></th>
<th>Not Essential</th>
<th>Essential</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>2.</td>
<td>3.</td>
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</tbody>
</table>

Clearly written: YES NO

Comments/suggestions for refinement:
3. Ethnicity:
   a. American Indian or Alaska Native
   b. Asian
   c. Black or African American
   d. Hispanic/Latino
   e. Native Hawaiian or Pacific Islander
   f. White

4. Please indicate the position you held prior to becoming an academic dean in your current institution.
   a. Dean, previous to current position
   b. Associate Dean
   c. Assistant Dean
   d. Department Chair
   e. Tenured Faculty
   f. Other Higher Education Academic Position
   g. K-12 Administrator
   h. Local/State/Federal Government Position
   i. Other (please specify): ________________________________

5. Are you considered to be the founding dean (e.g. instrumental in the creation and establishment of the school) in your current position?
   a. Yes
   b. No
6. Please indicate the number of years you have served in your current position as dean.
   a. Less than a year
   b. 1-3 years
   c. 4-6 years
   d. 7-9 years
   e. 10 + years

<table>
<thead>
<tr>
<th>Not Essential</th>
<th>Essential</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>2.</td>
</tr>
</tbody>
</table>

Clearly written: YES NO

Comments/suggestions for refinement:

7. How does your contract impact your ability to engage in entrepreneurial activity?

   a) The contract creates barriers for me to engage in entrepreneurial activity.
   b) The contract facilitates my ability to engage in entrepreneurial activity.
   c) The contract does not facilitate nor create barriers to my engaging in entrepreneurial activity

<table>
<thead>
<tr>
<th>Not Essential</th>
<th>Essential</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>2.</td>
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</tbody>
</table>

Clearly written: YES NO

Comments/suggestions for refinement:

8. What role does the provost play in entrepreneurial activity in the institution?

   a. Very significant
   b. Somewhat significant
   c. Not significant

<table>
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<tr>
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<th>Essential</th>
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</thead>
<tbody>
<tr>
<td>1.</td>
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</tbody>
</table>

Clearly written: YES NO

Comments/suggestions for refinement:
PART II: Institutional Data

Research Question: Is there a relationship between the number of revenue generating entrepreneurial activities categories of entrepreneurial activity carried out by a dean and their academic discipline in Upstate New York independent colleges and universities? (Survey Question #9 and #12)

9. Please indicate academic disciplines and specialization of your school:
   a. Liberal Arts & Sciences
   b. Business/Management
   c. Education
   d. Engineering
   e. Health Sciences (e.g. nursing, physical therapy, dental, etc.)
   f. Information and Technology Science
   g. Physical/Natural Sciences
   h. Arts
   i. Communications/Journalism
   j. Hospitality/Culinary
   k. Other (please specify): ___________________

   This question is intended to elicit institutional data to determine if there is a correlation between academic discipline and entrepreneurial orientation and entrepreneurial activity.

   Not Essential 1. 2. 3. 4. 5. Essential

   Clearly written: YES NO

   Comments/suggestions for refinement:

Research Question: Is there a relationship between the total number of revenue generating entrepreneurial activities of academic deans and changes in student enrollment since fall 2008 in Upstate New York independent colleges and universities? (Survey Question #10 and #12)

10. How would you best describe the enrollment pattern (e.g. total student head count) of your school since fall 2008?

   a. Student enrollment increased
   b. Student enrollment decreased
   c. Student Enrollment did not increase or decrease
PART III: Entrepreneurial Orientation Data

Research Question: What is the self-perceived entrepreneurial orientation of academic deans in Upstate New York? (Survey Question #11)

11. In describing yourself, how characteristic of you is each of the following? Please use the scale below and check your selection. Please indicate the extent to which each characteristic is descriptive of you generally.

   1- Not characteristic
   2- Mostly not characteristic
   3- Somewhat characteristic
   4- Mostly characteristic
   5- Very characteristic

<table>
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<tbody>
<tr>
<td>Innovative</td>
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<td>Risk taker</td>
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<td>Creative</td>
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<tr>
<td>Change agent</td>
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<td>Team builder</td>
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<tr>
<td>Competitive</td>
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<td>Opportunistic</td>
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<td>Visionary</td>
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<tr>
<td>Proactive</td>
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<tr>
<td>Persuasive</td>
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</tbody>
</table>

This question is intended to elicit entrepreneurial orientation data to determine if there is a correlation between entrepreneurial orientation, certain demographic characteristics, academic discipline, and entrepreneurial activity.

Not Essential

1. 2. 3. 4. 5.

Clearly written: YES NO

Comments/suggestions for refinement:
Research Question: Is there a relationship between the self-perceived entrepreneurial orientation of academic deans and the total number of entrepreneurial activities they engage in at Upstate New York independent colleges and universities? (Survey Question #12)

12. Please select all the activities you have been involved in during your tenure and the profitability outcome for each activity and your school.

**Educational Program Activities**

<table>
<thead>
<tr>
<th>I have been or am involved in this activity</th>
<th>Activity Made a Profit</th>
<th>Activity Broke Even</th>
<th>Activity Lost Money</th>
<th>Profitable for the School</th>
</tr>
</thead>
<tbody>
<tr>
<td>New traditional undergraduate programs</td>
<td></td>
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<tr>
<td>New traditional graduate programs (Masters level)</td>
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<tr>
<td>New non-traditional undergraduate programs</td>
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<tr>
<td>New non-traditional graduate programs (Masters level)</td>
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<tr>
<td>New doctoral programs</td>
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<tr>
<td>Continuing education programs</td>
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<tr>
<td>Educational consulting</td>
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<tr>
<td>Educational seminars</td>
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<tr>
<td>Study Abroad programs</td>
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<tr>
<td>Distance education programs</td>
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<tr>
<td>Contract education programs</td>
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<tr>
<td>Degree completion programs</td>
<td>Niche programs</td>
<td>Off-campus programs</td>
<td>Recruitment of foreign students</td>
<td>Degree programs in foreign countries</td>
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</table>

**Partnership related activities**

<table>
<thead>
<tr>
<th>I have been or am involved in this activity</th>
<th>Activity Made a Profit</th>
<th>Activity Broke Even</th>
<th>Activity Lost Money</th>
<th>Profitable for the School</th>
</tr>
</thead>
<tbody>
<tr>
<td>Partnerships with domestic educational institutions</td>
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<tr>
<td>Partnerships with other international educational institutions</td>
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<tr>
<td>Partnerships with outside business</td>
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<tr>
<td>Participation in joint ventures</td>
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<tr>
<td>Partnership alliances with community projects</td>
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<tr>
<td>Investment with outside parties</td>
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<tr>
<td>Other (please specify)</td>
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</table>
### Fundraising activities

<table>
<thead>
<tr>
<th>Activity</th>
<th>I have been or am involved in this activity</th>
<th>Activity Made a Profit</th>
<th>Activity Broke Even</th>
<th>Activity Lost Money</th>
<th>Profitable for the School</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capitol Campaign</td>
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<tr>
<td>Comprehensive campaign</td>
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<tr>
<td>Planned giving programs</td>
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<td>Athletics related activities (e.g. team expansion, summer camps)</td>
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<tr>
<td>Alumni programs or events</td>
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<tr>
<td>Made request to donors for a special award or scholarship</td>
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<tr>
<td>Federal or Private Foundation Support</td>
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<tr>
<td>Grants</td>
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<tr>
<td>Special Events (e.g. lunches, hosting special dinners, golf tournaments)</td>
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<tr>
<td>Other (please specify)</td>
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</tbody>
</table>

### Intellectual Property

<table>
<thead>
<tr>
<th>Activity</th>
<th>I have been or am involved in this activity</th>
<th>Activity Made a Profit</th>
<th>Activity Broke Even</th>
<th>Activity Lost Money</th>
<th>Profitable for the School</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research and technology transfer activities (e.g. computer programs or comprehensive software packages developed by colleges and universities that provide digital options for students such as on-line)</td>
<td></td>
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<tr>
<td>images and illustrations, quizzies and study tools</td>
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<tr>
<td>Intellectual property licensing and patenting (e.g. educational material used or distributed outside the institution primarily for the formal or informal instruction or education of professional or general students)</td>
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<tr>
<td>Grants</td>
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<tr>
<td>Other (please specify)</td>
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</tbody>
</table>

**Small Business Development**

<table>
<thead>
<tr>
<th>I have been or am involved in this activity</th>
<th>Activity Made a Profit</th>
<th>Activity Broke Even</th>
<th>Activity Lost Money</th>
<th>Profitable for the School</th>
</tr>
</thead>
<tbody>
<tr>
<td>Counseling small business firms</td>
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<tr>
<td>Coordinating and conducting research into technical and general small business problems</td>
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<tr>
<td>Conducting conferences and workshops for businesses</td>
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<tr>
<td>Offering specialty and high technology services to the business client</td>
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<tr>
<td>Conducting training programs for businesses</td>
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<tr>
<td>Providing special assistance to technology oriented firms</td>
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<tr>
<td>Assisting business with in product engineering</td>
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<tr>
<td>Providing business with patent searches</td>
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<tr>
<td>Assisting business in technology research</td>
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<tr>
<td>Providing plant layout and design</td>
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</table>

182
<table>
<thead>
<tr>
<th>Offering product testing</th>
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<tbody>
<tr>
<td>Offering business feasibility studies</td>
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<tr>
<td>Training for businesses with businesses</td>
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<tr>
<td>Establishing incubator businesses with businesses</td>
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<tr>
<td>Offering assistance with small business start-up</td>
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<tr>
<td>Establishing for-profit companies</td>
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<tr>
<td>Other (please specify)</td>
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</tbody>
</table>

This question is intended to elicit institutional data to determine if there is a correlation between entrepreneurial orientation and the outcome of entrepreneurial activity of academic deans.

<table>
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<tr>
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<th>1.</th>
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<th>4.</th>
<th>Essential 5.</th>
</tr>
</thead>
</table>

Clearly written: YES NO

Comments/suggestions for refinement:
13. As part of my dissertation research, would you be willing to talk with me more about your responses on this survey and your experience as an academic dean? If so, please share your contact information below.

Name: ____________________________________________
Phone: ____________________________________________
Fax: ______________________________________________
E-mail: ____________________________________________

This question will allow participants to volunteer to participate in the qualitative portion of the study to provide additional insight and explanations on entrepreneurial orientation and activity.

<table>
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<tr>
<th>Not Essential</th>
<th>Essential</th>
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</table>

Clearly written: YES NO

Comments/suggestions for refinement

14. If you would like to receive an abstract of the final dissertation, please provide the following information:

Name: ____________________________________________
Phone: ____________________________________________
Fax: ______________________________________________
E-mail: ____________________________________________

This question will allow participants to be sent the research findings.

<table>
<thead>
<tr>
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<th>Essential</th>
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<tr>
<td>1. 2. 3. 4. 5.</td>
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</tbody>
</table>

Clearly written: YES NO

Comments/suggestions for refinement
**Additional Questions for Panel of Experts**

*Other Activities Under Consideration for Survey*
Based on your experience, do academic deans participate in the following activities?

<table>
<thead>
<tr>
<th>Activity</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Investment in hedge funds</td>
<td></td>
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<tr>
<td>Investment in bonds</td>
<td></td>
<td></td>
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<tr>
<td>Investment in equities</td>
<td></td>
<td></td>
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<tr>
<td>Real estate acquisition</td>
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<tr>
<td>Real estate leasing</td>
<td></td>
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<tr>
<td>Campus real estate management services</td>
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<tr>
<td>Real estate maintenance service</td>
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<td></td>
</tr>
<tr>
<td>Construction projects</td>
<td></td>
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</tr>
</tbody>
</table>

**General Feedback on Survey**

Please review the survey in response to the following questions:

1. Is the survey measuring what it intended to measure?
2. Is the survey and associated questions appropriate for the sample/population?
3. Are there additional survey questions that should be included?
4. Is the amount of estimated time (20 minutes) to complete the survey a reasonable expectation for respondents?

*Thank you for agreeing to be on my panel of experts. Your feedback is most appreciated.*
Appendix G

Survey Cover Letter

Dear Academic Dean,

Please allow me to introduce myself. My name is Shannon Cleverley-Thompson and I am a doctoral student in the Executive Leadership Program in the School of Education at St. John Fisher College in Rochester, New York. My dissertation study will be an examination of revenue-generating activity and leadership of academic deans at independent colleges and universities in New York State. The purpose of the study is to gain a broader perspective of the role of academic deans in entrepreneurial activity in higher education institutions.

Independent college and university academic deans face increasing financial challenges due to pressure to increase student enrollment, increased competition, and reduced funding and resources. These and other factors may create pressure on institutional leadership to find new sources of revenue. I believe that future institutional success can depend on how academic deans perceive their roles as entrepreneurs and what strategies they use to increase funding for their schools. I hope the findings of my study will add to the body of knowledge of the leadership and management practices of academic deans and provide beneficial insight into best practices that will be valuable to leaders at independent colleges and universities in New York.

I am extremely pleased and grateful for your willingness to participate in the study. I have made every effort to construct a concise and resourceful survey for your consideration while assuring individual confidentiality and anonymity. I estimate the survey will take about fifteen minutes to complete. By completing the survey, you are providing informed consent. Please be sure to share your contact information in the survey if you would agree to be interviewed for an hour about your responses to this survey with a possible thirty minute follow-up conversation for clarification and confirmation of the findings.

Please click on the attached link to complete the survey by December 3, 2010. You must complete the survey in one sitting. The survey findings will be made available to you in an abstract by October 1, 2011.

Click here to start the survey now

Thank you for your time and effort.

Respectfully Yours,

Shannon Cleverley-Thompson
Research Investigator
(585) 350-9298
spc03677@sfjc.edu

Click here to opt-out of the survey
Appendix H

Survey Instrument

Introduction: Thank you for agreeing to participate in this important study. The study is designed to gain a broader perspective of the role of academic deans in entrepreneurial activity in higher education institutions. The information collected in the survey will be valuable for this research. Your name will not appear in any report or dissertation resulting from this study. By completing this survey, you are granting me permission to use the data in this study for the doctoral dissertation. As such, you are advised of the following:

A. You have the right to decline answering any question.
B. You can withdraw from participation at any time without penalty.
C. There will be no physical discomfort.
D. Your answers will remain confidential at all times and the data will be properly secured by the researcher to protect anonymity.
E. You have the option to be informed of the results of the study.

A1. I have read the above information and I agree to participate in the study.

   Yes      No

PART I: Demographic, Professional Background, and Institutional Data

1. Gender:   ___Male    ___Female

2. Ethnicity:
   a. American Indian or Alaska Native
   b. Asian Indian
   c. Black or African American
   d. Chinese
   e. Guamanian or Chamorro
   f. Filipino
   g. Hispanic/Latino/ or Spanish
   h. Japanese
   i. Korean
   j. Native Hawaiian or Pacific Islander
   k. Vietnamese
   l. White
   m. Other Race
3. Please indicate the position you held prior to becoming an academic dean in your current institution.
   a. Dean, previous to current position
   b. Associate Dean
   c. Assistant Dean
   d. Department Chair
   e. Tenured Faculty
   f. Other Higher Education Academic Position
   g. K-12 Administrator
   h. Local/State/Federal Government Position
   i. Other (please specify): ________________________________

4. Are you considered to be the founding dean (e.g. instrumental in the creation and establishment of the school) in your current position?
   a. Yes
   b. No

5. Please indicate the number of years you have served in your current position as dean. _______

6. Please indicate academic disciplines and specialization of your school:
   a. Liberal Arts & Sciences
   b. Business/Management
   c. Education
   d. Engineering
   e. Health Sciences (e.g. nursing, physical therapy, dental, etc.)
   f. Information and Technology Science
   g. Physical/Natural Sciences
   h. Arts
   i. Communications/Journalism
   j. Hospitality/Culinary
   k. Other (please specify):_________________

7. How would you best describe the enrollment pattern (e.g. total student head count) of your school since fall 2006 (e.g. the last five years)?
   a. Student enrollment increased
   b. Student enrollment decreased
   c. Student Enrollment did not increase or decrease

8. Are you expected to engage in entrepreneurial activities as part of your job responsibilities?
   a. Yes
   b. No
9. How much autonomy do you feel you have in making decisions about the execution of entrepreneurial activity?
   a. I have a high degree of autonomy in making decisions and executing entrepreneurial activity
   b. I have a moderate degree in making decisions and executing entrepreneurial activity
   c. I have a low degree in making decisions and executing entrepreneurial activity
   d. I do not have any autonomy in making decisions and executing entrepreneurial activity.

PART II: Entrepreneurial Orientation Data

10. In describing yourself, how characteristic of you is each of the following? Please use the scale below and check your selection. Please indicate the extent to which each characteristic is descriptive of you generally.

   a. Not characteristic
   b. Mostly not characteristic
   c. Somewhat characteristic
   d. Mostly characteristic
   e. Very characteristic

<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>Innovative</td>
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<tr>
<td>Risk taker</td>
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<tr>
<td>Creative</td>
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<tr>
<td>Change agent</td>
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<tr>
<td>Team builder</td>
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<td>Competitive</td>
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<td>Opportunistic</td>
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<tr>
<td>Visionary</td>
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<tr>
<td>Proactive</td>
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<tr>
<td>Persuasive</td>
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</tbody>
</table>
PART III: Entrepreneurial Activity Data

11. Please select the following revenue generating activities that are being carried out in your school (e.g. School of Arts and Sciences, School of Nursing, School of Education)

   a. **Educational Program Activities**

<table>
<thead>
<tr>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>New traditional undergraduate programs</td>
</tr>
<tr>
<td>New traditional graduate programs (Masters level)</td>
</tr>
<tr>
<td>New non-traditional undergraduate programs</td>
</tr>
<tr>
<td>New non-traditional graduate programs (Masters level)</td>
</tr>
<tr>
<td>New doctoral programs</td>
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<tr>
<td>Continuing education programs</td>
</tr>
<tr>
<td>Educational consulting</td>
</tr>
<tr>
<td>Educational seminars</td>
</tr>
<tr>
<td>Study Abroad programs</td>
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<tr>
<td>Distance education programs</td>
</tr>
<tr>
<td>Contract education programs</td>
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<tr>
<td>Degree completion programs</td>
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<tr>
<td>Niche programs</td>
</tr>
<tr>
<td>Off-campus programs</td>
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<tr>
<td>Recruitment of foreign students</td>
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<tr>
<td>Degree programs in foreign countries</td>
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<tr>
<td>Other (please specify)</td>
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</tbody>
</table>

   b. **Partnership related activities**

<table>
<thead>
<tr>
<th>Activity</th>
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</thead>
<tbody>
<tr>
<td>Partnerships with domestic educational institutions</td>
</tr>
<tr>
<td>Partnerships with other international educational institutions</td>
</tr>
<tr>
<td>Partnerships with outside business</td>
</tr>
<tr>
<td>Participation in joint ventures</td>
</tr>
<tr>
<td>Partnership alliances with community projects</td>
</tr>
<tr>
<td>Investment with outside parties</td>
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<tr>
<td>Other (please specify)</td>
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</tbody>
</table>

   c. **Fundraising activities**

<table>
<thead>
<tr>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capitol Campaign</td>
</tr>
<tr>
<td>Comprehensive campaign</td>
</tr>
<tr>
<td>Planned giving programs</td>
</tr>
<tr>
<td>Athletics related activities (e.g. team expansion, summer camps)</td>
</tr>
<tr>
<td>Alumni programs or events</td>
</tr>
<tr>
<td>Made request to donors for a special award or scholarship</td>
</tr>
</tbody>
</table>
### Federal or Private Foundation Support

**Grants**

Special Events (e.g. lunches, hosting special dinners, golf tournaments)

Other (please specify)

### Intellectual Property

Research and technology transfer activities (e.g. computer programs or comprehensive software packages developed by colleges and universities that provide digital options for students such as on-line images and illustrations, quizzes and study tools)

Intellectual property licensing and patenting (e.g. educational material used or distributed outside the institution primarily for the formal or informal instruction or education of professional or general students)

Grants

Other (please specify)

### Small Business Development

Counseling small business firms

Coordinating and conducting research into technical and general small business problems

Conducting conferences and workshops for businesses

Offering specialty and high technology services to the business client

Conducting training programs for businesses

Providing special assistance to technology oriented firms

Assisting business with product engineering

Providing business with patent searches

Assisting business in technology research

Providing plant layout and design

Offering product testing

Offering business feasibility studies

Training for businesses with businesses

Establishing incubator businesses with businesses

Offering assistance with small business start-up

Establishing for-profit companies

Other (please specify)

### Part IV: Personal Information (optional)

1. As part of my dissertation research, would you be willing to be interviewed for an hour about your responses on this survey with a possible thirty minute
follow-up conversation for clarification and confirmation of the findings? If so, please share your contact information below.

Name: _______________________________________________
Phone: _______________________________________________
E-mail: ______________________________________________

2. If you would like to receive an abstract of the final dissertation, please provide the following information:

Name: _______________________________________________
Phone: _______________________________________________
E-mail: _______________________________________________
Appendix I

Interview Information Letter

Dear Academic Dean:

Thank you for completing the survey for my dissertation in the Executive Leadership Doctorate Program in the School of Education at St. John Fisher College in Rochester, New York. My dissertation study is an examination of revenue-generating activity and leadership of academic deans at independent colleges and universities in New York State. The purpose of the interview is to gain more in-depth information about the entrepreneurial orientation of an academic dean and their experience in developing and managing entrepreneurial activity in higher education institutions.

Participation in this study is voluntary. It will involve an interview of approximately 60 minutes in length to take place at a mutually agreed upon location. You may decline to answer any of the interview questions if you so wish. With your permission, the interview will be audio recorded to facilitate the collection of information and later transcribed for analysis. Shortly after the interview has been completed, I will send you a copy of the findings to give you an opportunity to confirm the accuracy of our conversation and to add or clarify any points that you wish. All information you provide is considered completely confidential. Your name will not appear in any report or dissertation resulting from this study, however, with your permission anonymous quotations may be used.

I am extremely pleased and grateful for your willingness to participate in the study. I have made every effort to construct concise and informative interview questions. Please read and sign the attached consent form to initiate your participation in the study. I will contact you to schedule the interview upon receipt of the consent form.

If you have any questions regarding this study or the interview, or would like additional information to assist you in reaching a decision about participation, please contact me at (585) 350-9298 or by e-mail at spec03677@sjfc.edu. I hope the findings of my study will add to the body of knowledge of the leadership and management practices of academic deans and provide beneficial insight into best practices that will be valuable to leaders at independent colleges and universities in New York.

Sincerely,

Shannon Cleverley-Thompson

Research Investigator
Appendix J

Interview Questions

1. What do you feel are the entrepreneurial characteristics of an academic dean? Can you tell me a little more about why you choose those words?
2. Do you feel it is important, given the current economic conditions, for a dean to engage in entrepreneurial activity?
3. Do you believe your entrepreneurial orientation was developed prior to becoming an academic dean?
4. Do you believe your entrepreneurial orientation has been developed further through leading entrepreneurial activity as an academic dean?
5. Do you feel the number of years you have been in the position of academic dean has made an impact on your entrepreneurial orientation?
6. Are you expected to engage in entrepreneurial activity as part of your job responsibility of being a dean? If yes, in what ways?
7. What have been the biggest challenges you have encountered when engaging in entrepreneurial activity?
8. What have been the biggest facilitators you have encountered when engaging in entrepreneurial activity?
9. How do you determine which entrepreneurial activity will be undertaken for your school? For example...is there a particular process you follow?
10. What do you feel are the major outcomes of participating in entrepreneurial activities?
11. Do you believe that entrepreneurial activity can have an impact on the enrollment of your school (i.e. School of Education)? Why or why not?
12. What types of entrepreneurial activity do you find yourself doing the most as an academic dean?
13. If an entrepreneurial activity generated a profit was any portion of the revenue transferred back to your area of responsibility?
14. What suggestions can you provide for institutions that would like to promote entrepreneurial activity?
15. Do you believe an academic dean has to be a risk-taker? Why or why not? Do you find yourself taking risks? If yes, what kind? If no, what may prevent you from taking risks?
16. Do you like being a dean? Why or why not?
17. How many years of experience do you have in your current position?
18. Would you mind sharing your age?
19. What position on campus do you report to?
20. What type, if any, accreditations are held by your school?
Appendix K

Development of Entrepreneurial Activity for Academic Deans