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Exploring Entrepreneurialism in Community Colleges in the Appalachian Region

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ABSTRACT
EXPLORING ENTREPRENEURIALISM IN COMMUNITY COLLEGES IN THE APPALACHIAN REGION

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ABSTRACT

The combination of a weak economy with a corresponding decline in tax revenue has created deficits in state and local budgets which adversely affect the financial stability of community colleges. This leaves community colleges struggling to continue to provide education in support of their missions. To provide a source of alternative revenue, community colleges are embracing the spirit of entrepreneurialism and transforming themselves into profit-seeking businesses.

This quantitative study, using a web-based survey and descriptive and inferential statistics, focuses on factors perceived by college presidents and workforce development officers to affect the practice of entrepreneurialism in 71 community colleges in the Appalachian Region, a mostly rural federally designated region which encompasses all or part of 13 states in the eastern United States. A panel of experts reviewed the survey for *content validity*; and a pilot test study was done for *reliability of the instrument*. *Independent samples t tests* on early and late responders were conducted for *response bias*. Participant response rates were: (1) presidents – 34 of 71 (48%), 24 rural and 10 non-rural; (2) workforce development officers – 33 of 71 (47%), 19 rural and 14 non-rural; (3) community colleges – 55 of 71 (77%); and (4) overall response rate was 67 of 142 (47%).

Major significant findings included universal acknowledgement of a reduction in state appropriations, the importance of the encouragement of the president, entrepreneurial training for the executive team, and the use of entrepreneurial activities to generate revenue. Using *independent sample t tests* with a $p < .05$, rural presidents and workforce development officers reported the physical location of their colleges adversely affects the number of industries in the area and impedes fundraising and workforce training opportunities.

This research confirms the physical location of community colleges in the mostly rural, mountainous Appalachian Region adversely affects their ability to generate alternative revenue through fundraising and workforce training, two major sources of outside revenue available to community colleges. Further research is indicated to discover which alternative methods best generate revenue for rural community colleges. Since this research is limited to one region, it is recommended that a study be conducted of all community colleges in the United States.

DEDICATION

I dedicate this dissertation to my husband, Charlie Hatfield, who has stood by my side for the last years during this journey. I also want to dedicate it to our five children and our eleven grandchildren who have sacrificed precious time without us as I spent many nights and weekends sitting at my computer rather than visiting with them.

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The guidance of my committee Chair, Dr. Ted Raspiller, and my committee members, Dr. Mitch Williams, and Dr. Philip Reed, was invaluable to my success in completing this journey. I appreciate the help I received from my colleagues at Jefferson College of Health Sciences. Jennifer Flint did a marvelous job of editing the document, Dr. Charles Houston guided me through the statistics, Dr. Danielle Lusk checked my references for APA style, and Carol Rowlett designed an awesome internet survey.

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CHAPTER 1: INTRODUCTION

> "At the turn of the new century, the nation's public two-year colleges stand in the financial crossroads...community colleges now draw less of their total operating revenues from taxpayers than at any other time in their histories. If these recent trends are harbingers, the finance of community colleges will become even more critical in the foreseeable future." Richard A. Vorhees, 2001

Community colleges in the 21st century are experiencing decreasing state and local funding (Bock & Sullins, 1987; Roueche & Jones, 2005; Taber, 1995). The effects of a weak economy and decline in state and local tax revenue have caused deficits in state budgets that have adversely affected community colleges. As early as 2003, nearly every state in the nation had serious budget problems that caused a reduction in support of higher education (Wenrich & Reid, 2003). As a result of the continuing recession and decline in state revenues, many state legislatures prefer to fund major programs such as Medicaid and kindergarten-12th grade (K-12) education before higher education. This higher level of education is considered a discretionary item, and is generally funded with monies left over after priority funding (Katsinas, 2005). A survey of American community colleges conducted by the Community College Policy Center (2008) found the most serious issue facing community colleges is dealing with the dual challenges of decreasing state and local financial support for their colleges and improving the methods by which the colleges are funded.

Background of the Problem

A critical problem facing community college presidents is providing quality education for their communities in the light of decreasing monetary support from local and state governments. A reduction in state appropriations at a time of economic downturn is a threat to the ability of community colleges to provide higher education to thousands of students who are the educated workforce needed for the economic growth of the state (Conklin, 2002). College presidents must deal with growing enrollments, increasing technology needs, facilities requiring repair, and escalating employee benefit and utility costs. In a 2009 survey of community college presidents conducted in partnership with the League for Innovation in the Community College and The Campus Computing Project, Pearson, Inc. conducted a survey of community college presidents and found 92% had experienced enrollment growth, 57% reported budget cuts, and 61% reported mid-year budget rescissions (Green, 2009).

Raising tuition is the predominant method by which community colleges deal with state budget cuts (Katsinas, Tollefson & Reamey, 2008). Many community colleges are restricted by state governments, and are unable to raise the tuition to cover the deficits in the budget and therefore must discover alternative revenue sources to replace the lost revenue. In addition, there is intense competition from private for-profit educational institutions and four-year colleges and universities offering contract training and continuing education classes.

This research study focuses on community colleges located in the Appalachian Region, a region with a population living in rural and economically distressed areas that is greater than the national average (Appalachian Regional Commission, n.d.d). The need

for generating sustaining revenues is critical in rural community colleges as these community colleges deal with a real and perpetual isolation that limits attention of state policy makers who favor supporting community colleges in urban areas. These policy makers use the same funding formulas for urban and rural schools, not taking into consideration the delivery of high-quality programs in rural areas is more expensive than in metropolitan areas (Katsinas & Miller, 1998).

One solution to the problem being attempted by many community colleges in the nation is practicing entrepreneurialism to generate sustaining (lasting more than one year) revenues. In fact, entrepreneurialism is becoming integral to the college mission as funds to support the colleges continue to decline (Brightman, 1989; Roueche & Jones, 2005; Ryan & Palmer, 2005; Zeiss, 2003). Roueche (2005) explained the importance of understanding entrepreneurialism when he wrote:

> The rise of the community college entrepreneur represents a new wave in the community college system. And the entrepreneurial college – truly an American invention – represents a new journey, an uncharted path that will lead to new discoveries, helping reshape colleges into self-sustaining, ever-evolving enterprises. (p. 142)

An entrepreneurial community college is one that proactively meets challenges, remains flexible, encourages change and innovation, recognizes opportunities, takes risks, generates sustainable resources, and moves the mission of the college forward (Roueche & Jones, 2005). These colleges have considerable spending discretion to use these revenues to support the core academic mission of the community college, build and repair

buildings, start new programs, and purchase new technology (Bailey & Morest, 2004; Hearn, 2003; Roueche & Jones, 2005; Van Wagoner, Bowman & Spraggs, 2005).

Community colleges are located in both metropolitan and non-metropolitan areas across the United States. Since the United States is made up of diverse geographical areas, the colleges may be located in coastal, plains, and mountainous areas. An entrepreneurial community college is dependent upon its environment to find resources and opportunities to make a profit; thus, its actions are based on the Resource Dependence theory that focuses on organizational decision making on growing and generating profits with available resources (Pfeffer & Salancik, 2003). These decision-making changes include altering organizational structure, replacing those in power positions, and changing goals. Resource Dependence organizations are inescapably theoretically grounded in their environments and engage in activities directly adaptable to their environment. Applying this theory to community colleges located in diverse geographical locations with different populations and economical levels, it stands to reason that college leaders would consider their environment as they adapt and plan to strategically practice entrepreneurialism. Embracing an entrepreneurial spirit, college administrators concentrate on three main goals to generate revenue: (1) training the workforce, (2) providing continuing education programs, and (3) engaging in fundraising activities (Grubb, Badway, Bell, Bragg & Russman, 1997; Roueche & Jones, 2005).

Workforce development is a major institutional function of the community college and includes credit and noncredit programs, career and technical area training classes, and contract training units that provide custom training for businesses while bringing revenue (Garza & Eller, 1998; Grubb, 2001; Jacobs & Dougherty 2006). These

workforce training departments serve an increasingly diverse population of learners in their local communities, as well as state and national partnerships. Previously considered an auxiliary enterprise, workforce training departments are committed to use entrepreneurial approaches to generate surplus revenues to support the college's mission in an environment of decreased state funding. As enrollments increase and the demand grows for programs that provide labor market skills for a globalized economy, colleges will place more emphasis on these entrepreneurial units to build and maintain larger, more technical, and expensive programs (Downey, Pusser, & Kirsten-Turner, 2006).

Continuing education may serve as a revenue source as it promotes the well-being of the local community by providing education and services in political, social and cultural areas. Educational courses include non-credit and specialized purpose courses for adults such as certificate programs in computers, real estate and health. Other offerings are personal enrichment programs such as community arts development, community theatre, arts and crafts events, and health fairs. For pre-college age students, these include programs such as Tech Prep, Dual Enrollment programs for high school students to receive college credit, and specialized programs for children in kindergarten to eighth grade (Bailey & Morest, 2004; Grubb, et al, 1997). Another revenue source is resource sharing, an entrepreneurial activity leveraging community resources collaboratively to decrease costs and provide for new revenue streams.

Many colleges are escalating their efforts in fundraising and also investing these foundation funds into profit-making entrepreneurial enterprises such as purchasing buildings to lease (Roueche & Jones, 2005). In order to increase foundation funds, colleges are focusing their attention on soliciting individual and corporate donor

solicitations, developing giving campaigns, acquiring grants and bonds for buildings and technology, and increasing scholarship endowments (Roueche & Jones, 2005). Increasing efforts in this area requires additional resources from an already declining budget to advertise, organize events, and hire staff.

College presidents and their workforce development officers facing growing operational budget deficiencies and using entrepreneurial activities to increase revenue will take risks using current resources to invest in these endeavors. Risk taking is inherent in conducting all entrepreneurial activities. Deciding which revenue generating activities to pursue requires scanning and assessing the specific environment for factors that will enhance or inhibit entrepreneurial activities.

Appalachian Region

The Appalachian Region is defined by the Appalachian Regional Commission (ARC) formed in the mid 1960's when Congress passed legislation to address persistent poverty and improve the economic status of the region. The region encompasses 200,000 square miles which follow the contour of the Appalachian Mountains, and includes all of West Virginia and parts of twelve other states. This area continues to be economically distressed; it is home to 23 million people, with 40% of them living in rural conditions as compared to the national norm of 20% (ARC, n.d.d). The Appalachian Region (Appendix A) has few urban centers as most of the area is mountainous and rural; thus, the community colleges in Appalachia serve more rural communities than their national counterparts.

The Appalachian Region is made up of metropolitan and non-metropolitan areas with the larger community colleges located in metropolitan cities. The smaller colleges

are located in non-metropolitan (rural) communities. These rural colleges rely more on state funding than those in the cities, and are highly susceptible to economic downturns (Katsinas, Alexander & Opp, 2003). This susceptibility makes generating sustaining revenue streams through entrepreneurial activities an important contribution to a rural community college's operating budget. The importance of entrepreneurialism in these community colleges is noted as early as 1996 in an article in the Appalachian Regional Commission's (ARC) *Appalachian* Magazine, where it reports that every rural and distressed county is covered by a community college which in order to survive must respect the culture and be as nimble as an entrepreneur in responding to market needs (Baldwin, 1996).

Statement of the Problem

The problem is the combination of a weak economy with a corresponding decline in tax revenue has created deficits in state and local budgets which adversely affect the financial stability of community colleges. This leaves the community college struggling to continue to provide education in support of its mission.

Purpose of the Research

The purpose of this study was to explore the factors enhancing and inhibiting the practice of entrepreneurialism as it is currently being used in Appalachian community colleges. A survey was sent to college presidents and workforce development officers to gather their perceptions of these factors. When gathered and made available for all community colleges in similar locations, this information may be instrumental in assisting them in their decision making and possibly improving the outcomes of risk-

taking entrepreneurial activities. The end result may be more success in generating sustaining revenue.

Research Questions

This study explores entrepreneurialism in community colleges and the factors which affect entrepreneurialism in community colleges in the Appalachian Region. Studying and analyzing these factors can improve decision-making information, resulting in reduced risk and improved revenue generation. In an effort to understand these factors and relationships, information was gathered and analyzed using the following research questions.

1. What are the presidents' perceptions of the factors affecting entrepreneurialism in community colleges in the Appalachian Region?
2. What are the workforce development officer's perceptions of the factors affecting entrepreneurialism in community colleges in the Appalachian Region?
3. Is there a statistically significant difference in the perceptions of presidents of rural community colleges as compared to the perceptions of presidents of non-rural community colleges regarding the factors affecting entrepreneurialism in community colleges in the Appalachian Region?
4. Is there a statistically significant difference in the perceptions of workforce development officers of rural community colleges as compared to the perceptions of workforce development officers of non-rural community colleges regarding the factors affecting entrepreneurialism in community colleges in the Appalachian Region?

5. Is there a statistically significant difference in the perceptions of presidents of rural community colleges as compared to the perceptions of workforce development officers of rural community colleges regarding the factors affecting entrepreneurialism in community colleges in the Appalachian Region?
6. Is there a statistically significant difference in the perceptions of presidents of non-rural community colleges as compared to the perceptions of workforce development officers of non-rural community colleges regarding the factors affecting entrepreneurialism in community colleges in the Appalachian Region?

Delimitations

This study is limited in scope as it was designed to study entrepreneurialism in community colleges located in the federally recognized Appalachian Region, including the 10 additional counties designated by President Bush in 2008. The population sample includes rural and non-rural community colleges in Appalachia. The survey respondent pool was limited to two responses per college and was sent to college presidents and workforce development officers. The timeframe of this study is 2008-2010. This study assumed college presidents and workforce development officers would be interested in the topic of entrepreneurialism and complete the survey. The findings of this study are limited to Appalachian community colleges and may not be generalized to all community colleges.

Significance of Research

Rural colleges, especially small ones, are more dependent upon state funding and are more vulnerable and harder hit with state and local budget cuts (Roessler, Katsinas & Hardy, 2006). For many decades, these colleges have received only a small percentage of federal community development support available; as a result, they become increasingly financially fragile institutions which serve economically fragile communities (Fluharty & Scaggs, 2007). It has been the practice of state and federal governments to treat and fund all community colleges in the same fashion regardless of location or size. Each community college is unique as its mission is to serve its local community. Local, political and economic conditions of an institution are critical since they either impair or enable sustainability (Fluharty & Scaggs, 2007).

This research is significant because it contributes theoretically and practically to the techniques used by community colleges to generate sustaining alternative revenue sources during an economic crisis facing the United States in 2009-2010. With local and state funding decreasing at an alarming rate, colleges struggle to educate increasing numbers of students using less revenue.

This research adds to the general body of knowledge on the topic of entrepreneurialism in community colleges and fills a gap in the research by focusing on a predominately rural area and studying and comparing entrepreneurialism and the factors that enhance and inhibit entrepreneurial activities in both rural and non-rural rural community college environments. This research is significant and relates directly to community college leadership as it: (1) seeks to understand entrepreneurialism and its use to generate sustaining revenue; (2) provides vital information for community college

leaders to assist them in strategic planning and decision making; and (3) hopes to decrease the risks and improve the outcomes of entrepreneurial activities used to supplement declining operational budgets. Since this research compares rural and non-rural college leader's perceptions of what enhances and prohibits entrepreneurialism, it will provide more detailed information on the differences and further reduce the associated risks. The end result may be increased success in generating sustaining revenue to aid the colleges in fulfilling their mission.

Of the research that exists on entrepreneurialism, much has been based on and borrowed from private industry (Rankin, 2003). Research in community college entrepreneurialism is even more limited (Eddy & Murray, 2007). Governmental and agency studies, textbooks, and dissertation research are based on and mostly limited to qualitative research and case studies of small numbers of successful entrepreneurial community colleges and the leadership qualities of their presidents. An exception to this is a dissertation study conducted by Rebecca Beard (2008), who used mixed methods to survey the types of entrepreneurial activities used by 982 United States community colleges to generate sustaining alternative revenue. Of the 435 survey respondents, more than 50% of community college presidents identified their colleges as being located in a rural geographical setting, 24% in a suburban setting, and 18% in an urban setting. Her study recommends comparing rural, suburban and urban colleges and their choice of entrepreneurial activities. She recommends further study, including looking at factors that may inhibit attainment of sustaining alternative revenues.

The application of entrepreneurialism, as it applies to community colleges, is relatively new, beginning in the 1980's. Community college research in Appalachia is

limited and focused on illiteracy, perceptions of higher education, need for enhanced financial support from the states, and its role in providing revitalization of the economy. The majority of studies closely related to entrepreneurialism were conducted by the Rural Community College Initiative on a group of 24 American rural community colleges. The study included 5 colleges in Appalachia, and concentrated on the community college's role in providing comprehensive services to its community including open access, education, illiteracy improvement, workforce development, and community service (MDC, 1998).

There is a gap in the research studying Appalachian Region community colleges' quest to find alternative sustaining revenue (entrepreneurialism), as well as in research focusing on their ability to generate revenue or the factors enhancing and inhibiting it. Since rural community colleges have increased need for funding and have a fragile financial stability, they are more at risk during economic crises, making studying this region important to gather information to be used by college administrators to improve their entrepreneurial activities and generate sustaining alternative revenue.

The Appalachian Region is sub-divided into 3 regions (Appendix B). Appalachia continues to be economically stressed as it is home to 23 million people with 42% of them living in sparsely populated rural conditions as compared to the national norm of 20% (ARC, n.d.e). Since there are more rural community colleges in this region than the norm, studying this region will provide a wealth of information and more community colleges may benefit from this research study. This region is noted for its diverse geography and is similar to other regions in the United States including the Ozarks, and

the lower elevation mountains of the Rockies and Sierra Nevada; thus the results of the study may be beneficial to more than the community colleges in Appalachia.

This new study will add to the knowledge base of Beard's 2008 study as it will gather, analyze, and compare data from rural and non-rural community colleges in the Appalachian Region, which is predominately rural and recognized by the federal government as economically depressed. It is an inquiry into and explores factors which enhance and inhibit the practice of entrepreneurialism in these community colleges. It seeks to understand and will compare rural and non-rural college presidents' and workforce administrators' perceptions of these factors.

The research design is a quantitative non-experimental study using inferential statistics. This quantitative method is most appropriate as it uses an instrument to collect numerical data which is then analyzed using descriptive statistics (Creswell, 2003). It employs a survey to be electronically sent via email to the presidents and workforce development officers of all community colleges in the Appalachian Region. The study has chosen to survey community college presidents' perceptions of entrepreneurialism factors as the president is responsible for strategic planning and assuring the college has the necessary revenue to support its mission in providing comprehensive education for its local community. The study will also survey workforce development officers' perceptions as this officers' role is to oversee revenue generating contract training and non-credit courses designed for its local community. Data will be collected from the survey and statistical analysis will be used to relate independent and dependent variables stated in the research questions.

Definition of Terms

For the purpose of this research study, the following definitions of terms apply:

1. Barriers – lack of telecommunications, major highways, internet access, grant writer, and institutional advancement or workforce development administrator.
2. College geographical setting classification – the respondents will choose between rural and non-rural.
3. Community development – providing education to meet the needs of the community through non-credit courses, providing space for and assisting with cultural and political events.
4. Contract training – specialized training contracted by individual businesses.
5. Economic development – the growth of the local economy which includes new businesses and employment opportunities.
6. Entrepreneurial activities – activities designed to bring in additional revenue to a community college, including contract training, fundraising, grants, grant writing, investments, resource sharing, auxiliary services, dormitories, non-credit courses for workforce development or community education, college level courses for high school students, GED preparation, and developmental education to remediate those students not fully prepared to enter college, etc.
7. Entrepreneurial attributes – willingness to take risks, innovativeness, flexibility, ability to meet challenges, and proactive identification of and response to needs.

8. Entrepreneurialism – Attempting to establish profitable ventures and partnerships to generate revenue.
9. Friend-raising – a term used by Roueche & Jones (2005) to describe building relationships with friends who may later become supporters and donors.
10. Fundraising – raising money by obtaining donations from individuals, businesses, foundations, grants, capital campaigns to raise money for buildings or initiatives, and activities such as festivals.
11. Investments – college uses foundation money to invest in buildings, property, or other activities in an effort make a profit.
12. Remedial education – providing courses in English and Math for students not fully prepared for college work.
13. Resource sharing – examples include providing or sharing space, buildings, or internet connections with the community.
14. Workforce development – providing training for business and industry.
15. Youth education – providing kindergarten -12th grade summer non-credit courses, or providing college credit courses for high school students.

Conclusion

Community colleges in the 21st century are experiencing decreasing state and local funding (Bock & Sullins, 1987; Roueche & Jones, 2005; Taber, 1995). The effects of a weak economy and decline in state and local tax revenue have caused deficits in state budgets that have adversely affected community colleges. This is especially true in economically depressed areas such as the Appalachian Region of the United States. In order to address budget deficits, community colleges are becoming entrepreneurial and

searching for activities that will bring in sustaining revenues. Entrepreneurial activities are inherently risky ventures, and as such do not always generate a profit. It is the purpose of this study to survey the presidents and workforce development officers of Appalachian community colleges to gain valuable information on the factors affecting entrepreneurialism. This information may then be used to reduce the risks associated with entrepreneurial activities. Reduced risks may result in improved profit generation to add to deficient community college budgets so that these colleges have the resources to fulfill their missions.

CHAPTER 2: LITERATURE REVIEW

Introduction

Community colleges in the 21st century are experiencing reductions in state and local funding. Previously, state and local resources supported the majority of community colleges' budgets. These colleges have been asked to do more with less revenue, while facing increasing student enrollments, facilities in need of repair, escalating utility and employee benefits, need for technology improvements, and intense competition from private non-profit institutions (Bailey & Morest, 2004; Bock & Sullins, 1987; Hearn, 2003; Katsinas, 2005; Roueche & Jones, 2005; Taber, 1995; Wenrich & Reid, 2003). Although universities and four-year colleges are expected to raise money to supplement any governmental funding, it is a new and challenging experience for these two-year colleges. In order to generate outside revenue, many community colleges are transforming themselves into entrepreneurial profit-making organizations.

The purpose of the literature review is to (a) establish the historical and theoretical framework for an examination of entrepreneurialism at community colleges in the Appalachian Region, (b) to identify benefits and challenges of entrepreneurialism to community colleges, and (c) to identify factors which enhance and inhibit entrepreneurial activities at community colleges.

Community Colleges

Role and Mission

The role of a community college is to provide education to the population of its immediate geographical location. The education provided includes preparation for transfer to a four-year college, vocational training, remedial education, lifelong learning,

community enrichment, adaptation to local educational needs, and in some areas revitalization of distressed economic regions by providing specialized workforce training for industry (Cohen & Brawer, 2003; Vaughan, 2000).

The mission of the community college is to provide open access to postsecondary educational programs and services that will improve and enhance the quality of life of its students and local service area. Vaughan (2000) explains the mission of most community colleges as: (1) providing open access admissions policy which offers equal and fair treatment for all students; (2) providing a comprehensive educational program; (3) serving as a community-based institution of higher education; (4) providing excellent teaching and learning; and (5) fostering lifelong learning. The strengths of community colleges are low cost, location, open enrollment, focus on student remediation, and the ability to change and adapt to community needs (Smith, 2008). The mission may expand as the college strives to meet its community's needs. Community colleges are located in rural (34% of total student population), suburban (32% of total student population), and urban (34% of total student population) locations. All community colleges have a commitment to social mobility by having open access, offering educational programs such as GED preparation, academic and career counseling, employment placement, and remedial and tutoring services. Typically enrollment is made up of more females than male students (Hardy & Katsinas, 2007).

Community College Finance

Need For Non-State Revenue

A critical problem facing community colleges is providing quality education for their communities in the light of decreasing monetary support from local and state

governments. Reduction in state appropriations at a time of economic downturn is a threat to the ability of community colleges to provide higher education to thousands of students who are the educated workforce needed for the economic growth of the state (Conklin, 2002). Community colleges must deal with growing enrollments, increasing technology needs, facilities requiring repair, replacement of retiring faculty and administrators, and escalating employee benefit and utility costs. In addition, there is intense competition from private for-profit educational institutions and four-year colleges and universities offering contract training and continuing education classes. Many community colleges are restricted by state governments and are unable to raise the tuition to cover the deficits in the budget and must discover alternative revenue sources to replace the lost revenue.

Community college financial structures vary but essentially each has an operating budget for daily operations and a capital budget for constructing and repairing buildings and purchasing capital equipment. Typically, as much as 80-85% of the budget is restricted and allotted to restricted uses such as faculty salaries and benefits; heating, air conditioning, and electricity, and maintenance contracts, leaving only a small percentage for repairing buildings and updating technology (Goldstein, 2005). In 2003, the average community college's total operational budget was comprised of revenue from multiple sources: 39% from state taxes, 18% from local government, 20% from tuition and fees, 13% from the federal government, and 10% from other sources (Vaughan, 2000). In the 21st century, change is already requiring growing budgets to support accelerating globalization, technological innovation and competitive advantage; but just when more

revenue is needed, the economic climate in 2009 with declining state contributions exacerbates the challenge of supporting the colleges' expanding missions.

Before the 1980s, a community college president's role was to manage the college and the operational budget. Management of the college and staying within the budget works in a stable environment but not in the face of decreasing state and local governmental support. Traditional methods of reducing budget deficits in the past have included: (1) raising tuition, which directly affects student enrollment, (2) closing programs, which has political costs and a devastating impact on morale as faculty are eliminated, (3) reducing cost by hiring part time faculty who do not receive benefits, (4) reducing spending on and delaying upgrading technology, and (5) delaying maintenance on buildings (Goldstein, 2005). These factors will cause irreparable damage to the fiscal health and organizational structure of the institution unless the community college transforms systems and processes to meet current and future challenges successfully. In order to survive in this century, a community college needs to embrace an entrepreneurial spirit and find sustaining alternative revenue sources to add to the operational budget (Roueche & Jones, 2005).

The term *entrepreneurialism* has recently been used to describe community colleges' efforts to generate additional sustaining revenue streams. Prior to the 21st century, entrepreneurial activities were instituted by innovative community colleges seeking additional funds to support their missions. Although it has long been expected that universities and four-year colleges raise money to supplement any governmental income, this is a new and challenging experience for community colleges. In order to

generate outside revenue, many community colleges are transforming themselves into entrepreneurial profit-seeking organizations (Roueche & Jones, 2005).

With limited financial resources, community colleges across the nation have been searching for alternative funds to supplement declining revenues as early as 1981 (Bock & Sullins, 1987; Taber, 1995). While some colleges in the mid 1980s opted to reduce programs and services, others became more proactive and sought out new sources of revenue. Resource sharing was an early method used in the 1980s to reduce costs and provide new resources. An example is Metropolitan Community College in Omaha, Nebraska. When faced with limited resources to support a growing student population, it developed a partnership with the city library to share resources and space. Kirkwood Community College in rural Iowa collaborated with a local hospital to share a building for education and patient services (Taber, 1995). On a larger scale, the California Community College Commission of Innovation recommended sharing the use of new or existing buildings to reduce costs to address expected shortfalls in the state budget in 1992. To add to this dilemma, not only were there insufficient funds for building new buildings, but the time elapsed from a proposal for a new building to the finished product could be up to ten years at that time (Taber, 1995).

Early efforts also included organizing college foundation boards similar to those in senior colleges and universities, and outsourcing auxiliary services such as the cafeteria and bookstore. A few innovative community colleges involved business and industry and formulated contract training, either via credit or non-credit classes. This contract training focused on three main goals: (1) training the workforce; (2) aiding in economic development; and, (3) assisting with community development (Grubb, et al,

1997). Other colleges sought outright monetary grants, donations of equipment, staff to train students, and shared training space (Brock & Sullins, 1987).

In the 1990s, creative collaborative partnerships between community colleges, city governments and local businesses increased in number as facilities built in the 1950-60s needed repair and updating while growing student populations required new or additional facilities. Limited resources from state governments continued to decline in the 21st century. With these limited resources, community colleges continually searched for new revenue to support new programs and technology (Bailey & Morest, 2004; Hearn, 2003; Roueche & Jones, 2005; Van Wagoner, et al, 2005).

The Appalachian Region

Description of the Region

The Appalachian Region is a sparsely populated rural region noted for its profound beauty with the highest mountains (highlands) east of the Rockies, terrain ranging from deep shaded gorges with rushing rivers filled with trout, small plateaus nestled between mountain ranges, and rolling foothills and flat lowlands adjacent to small metropolitan areas (Balsam West, 2007). In this region, the highlands located in the Central Appalachian sub-region are the most geographically isolated and economically challenged areas in Appalachia (ARC, n.d.d.).

Appalachia, as defined in the legislation from which the Appalachian Regional Commission derives its authority, is a 200,000-square-mile region that follows the spine of the Appalachian Mountains from southern New York to northern Mississippi (ARC, 1964. It includes all of West Virginia and parts of 12 other states: Alabama, Georgia, Kentucky, Maryland, Mississippi, New York, North Carolina, Ohio, Pennsylvania, South

Carolina, Tennessee, and Virginia (Appendix A). It is divided into three relatively homogeneous regions with similar topography, demographics and economics. The northern sub-region includes Pennsylvania, New York, Maryland, Ohio and parts of West Virginia. The central sub-region includes the rest of West Virginia, southern portion of Virginia, and eastern parts of Tennessee and Kentucky. The southern sub-region includes the western parts of Virginia, the Carolinas, and the northern parts of Georgia, Alabama, and Mississippi (Appendix B). In addition, the ARC identified a highland region consisting of the higher mountainous areas mostly in the central and south sub-regions so that it could earmark recreational and conservation initiatives for this area.

Recently the ARC has considered redefining the sub-regions because much has changed since the inception of the ARC (Pollard, 2005). In July 2008, President Bush signed legislation extending funding for the region for another 5 years. Additionally, the legislation added 10 new distressed counties to the Appalachian Region: Ashtabula, Mahoning, and Trumbull Counties in Ohio; Metcalfe, Nicholas, and Robertson Counties in Kentucky; Lawrence and Lewis Counties in Tennessee; and Henry and Patrick Counties in Virginia (ARC, 2008).

Appalachia communities have a history of isolation, economic exploitation followed by economic distress, poverty, substandard education and community services, and high illiteracy rate. They have a reputation for resistance to new ideas from outside sources and from community organizations trying to strengthen their communities and improve literacy rates (Bingman & White, 1994). The region is often described as being desolate with hills and hollers filled with impoverished peoples. Early in American history, it was described as being populated with hardy mountain people with unique

cultures and accents (Bingman & White, 1994). The southern area was home to the Cherokee and Shawnee until driven out by westward expansion. The area provided soldiers to both sides of the Civil War (Bingman & White, 1994). The stereotype of an Appalachian as a poor ignorant hillbilly ignores the history of the region. Years before the drafting of the Declaration of Independence, a rebellious community sent a letter to the British Crown declaring its independence (Biggers, 2008).

Income of the Region

The average yearly income of individuals living in the region is $24,360 which is 20% below the national average of $33,050. In the more rural areas, the income is much lower (ARC, n.d.d.). In the year 2000, rural Appalachians experienced a rate of poverty that was 40 percent higher than the rate in Appalachian metropolitan areas, whereas for the nation as a whole, rural poverty was roughly 25 percent higher than poverty in metropolitan areas (Lichter & Campbell, 2005). While the northern and southern sub-regions of Appalachia had significantly lower rates of poverty than central Appalachia (12.8 percent versus 21.1 percent), all three sub-regions experienced declining poverty rates during the 1990s. Central Appalachia had a poverty rate that was nearly twice the rate as the rest of the nation in 2000. Within the total region the ratio of Appalachian to non-Appalachian poverty rates also was much greater in rural areas than in metro areas (Lichter & Campbell, 2005).

Economy & Employment

Appalachia shares common economic problems with all rural regions across the United States. Some rural areas are prospering and at the same time others are at risk of economic decline or are frozen in persistent poverty. Of the counties in Appalachia, 81

counties are classified as distressed, 86 at risk, 228 in transition, 18 have reached a competitive economy, and 6 have reached an attainment of a stable and vital economy (ARC, n.d.e.). The rural middle class is shrinking and the young are migrating out to the cities to find better jobs (Fluharty & Scaggs 2007). Out-migration of the young educated is a major problem as they leave the older, less educated at home to live in poverty. Out-migration is seen as a negative population change which may be as high as -22%. With this change, the region may become an involuntary home of the poor and a play house for the rich who have vacation homes in the area (Fluharty & Scaggs 2007).

Country stores and family farms continue to decline in number as do manufacturing jobs. The most recent unemployment rates available for Appalachia, from 2008, were as high as 14.1% while the national average was 5.9% (ARC, n.d.h.). In 2004, 386 Appalachian counties were declared in persistent poverty by the U.S. Department of Commerce. Poverty persists among racial and ethnic minorities – Hispanic, African and Native - Americans – in the rural areas (Fluharty & Scaggs 2007).

The Appalachian Region's employment and economic history is based mostly on extraction of natural resources and on manufacturing. The modern economy of the region is gradually diversifying, with a heavy emphasis on services and widespread development of tourism, especially in more remote areas where there is no other viable industry. Coal remains an important resource, but it is not a major provider of jobs. Manufacturing is still an economic mainstay, but is no longer concentrated in a few major industries (ARC, n.d.b.).

Around the 1890's, timber was an abundant resource in Appalachia and was exploited by outsiders from the east who were building cities and needed lumber. By

1920 most of the hardwoods in Appalachia were gone, due to heavy logging (Bingman & White, 1994). Currently coal mining is the main natural resource industry. The area is known for resistance to government and large organizations as demonstrated by the strong unions formed to protect the mineworkers (Bingman & White, 1994).

In the 1900's small manufacturing plants were a primary source of employment, but with the advent of the NAFTA, these businesses have left, plunging these small counties into further economic distress (Bingman & White, 1994). Many counties now look for income to building prisons and becoming dump sites for large cities. With the designation by the federal government as a distressed region, highways and other infrastructure are being built to attract businesses into the region to stimulate the economy (Bingman & White, 1994).

Educational Attainment

Educational attainment rates in Appalachia have historically lagged behind national averages although the gap has been closing. The percentages of attainment are different when the Appalachian counties are compared to the non-Appalachian counties of the same state. For example, in 1980, 62.4% of all Virginians earned a high school diploma, but in coal country Virginia, only 38.3% of students earned a diploma. Education in the Appalachian Region is improving in the 21st century as more in the 17-24 year age group finish high school. The average completion rate is now comparable to the national average of 77% (Bingman & White, 1994).

Similar to high school attainment, college attainment in Appalachian counties is much lower than in non-Appalachian counties. For example, in the 1990's, in the state of Virginia, 19% of the population completed 4 years of college, whereas only 6.3% in the

Virginia Appalachian counties had attained this level (Bingman & White, 1994). The highest rate of the population to finish college is scattered around the metropolitan areas such as Atlanta and around Interstate 81 as it passes through Tennessee, North Carolina and Virginia (Haaga, 2004). The central sub-region continues to lag behind other sub-regions with Kentucky having a college graduation rate of 10.5% and West Virginia and Virginia each averaging 14.8%. These numbers are approximately half of the same states' non-Appalachian counties' averages (Haaga, 2004).

Higher Education in the Appalachian Region

Since the majority of counties in Appalachia are rural, it is not surprising that the majority of colleges, universities, and community colleges in Appalachia are located in rural areas. In many of these rural areas, the community college is the only higher educational institution within the county. Many of the publicly supported colleges are facing declining state, federal, and local support while they try to provide education and community service, and act as catalysts for economic growth. In order to survive financially, many are transforming themselves into entrepreneurial institutions.

Unique Economic Challenges

While Appalachia faces unique challenges for Higher Education, it also has the same common challenges as do all institutions of higher education. Rosenfeld (2000) aptly describes these challenges for the future as: (1) information technology – used effectively to provide information most needed by students; (2) emergence of growing competition with the educational private sector and the need to develop niches and special expertise in response; (3) forcing innovation to become a collective process – alliances and collaborations with employees at other educational institutions; (4)

globalization, because customers think globally – prepare students with knowledge of other cultures, economic systems, and business environments in other countries; (5) producing graduates who can understand system approaches and conceptual understanding with problem solving skills rather than just technical skills; (6) difficulty in attracting young people into associate degrees; and (7) new occupational mix of programs, especially information technology.

Appalachian higher education institutions also face unique challenges. A legacy persists of substandard schools, and high rates of illiteracy (Killacky & Valadez, 1995). Both of these put a financial burden on these institutions while they stretch resources to provide remedial education, provide and update technology, student services, and quality instruction needed by students (Vineyard, 1978). Since the majority of colleges are located in large multi-county sparsely populated areas, transportation is an issue for commuting students. Those colleges located in the most-mountainous central sub-region, face additional challenges in providing education including: (1) lack of telecommunications, including high speed internet access and mobile cell phone service, (2) students unable to purchase books, and pay for daycare and gas for their vehicles to attend class regularly, (3) students living in poverty in homes without computers or even telephones, and (4) inadequate highway and road systems (ARC, n.d.f.). Other challenges include: (1) decreasing rural population, (2) greater competition for high school graduates and non-traditional students from privately owned commercial schools such as DeVry, (3) lack of research on community colleges, (4) financial consequences of decreasing enrollments, (5) inability to keep up with technology trends, (6) failing infrastructure master plans; and (7) inability to attract leaders and faculty (Smith, 2008).

Negative Perception of Education

One unique challenge facing Appalachian community colleges is the negative perception of higher education which has exacerbated illiteracy and decreased enrollment. Bingman & White (1994) clearly understand the problem:

> When finishing school has no clear benefits, when success means leaving family and home, perhaps dropping out makes sense. When schools devalue your language, fail to teach your history, disparage your music and culture and encourage a competition you reject, resistance may seem a healthy alternative. (p. 6)

Education has not been valued as rural youth could find jobs in manufacturing, coal mining, or logging without even a high school diploma (Killacky & Valadez, 1995). This persisting negative perception is identified by Wallace & Dickroger's (2000) study of 127 students at three colleges in southern Ohio and eastern Kentucky. Appalachia was the birthplace of 91 of the respondents. The results were very enlightening, as 51% reported extra work kept them from doing schoolwork, 25% reported being accused of acting better than others who did not attend college, 24% were ignored by family when speaking about college, 23% were told not to waste their time on college, and 21% reported being given dirty looks when speaking of college. In addition, 20% reported being told they would never finish, 17% were told they could make more money without a college degree, 12% were made fun of, 8% were threatened for desiring to go, and 1% were physically hurt. Although this pilot study was limited to one area of Appalachia, it demonstrates the ongoing attitudes of mountain people. The findings may have even been higher if the study had included Appalachian students who had recently dropped out of

college; yet the results still were significant, as it included students who have overcome negative messages from family and friends, and are succeeding in college (Wallace & Diekroger, 2000).

Underfunding of Community Colleges

The substandard educational system of Appalachia is underfunded, especially in the middle sub-region (Bingman & White, 1994). Due to the sparse population, limited opportunities for employment, lack of cultural activities and full social services, the community colleges required additional funding to support their mission (Vineyard, 1979). There is critical underfunding of rural community college by governmental and policy-making bodies that do not understand these comprehensive services require additional funding. Rural community colleges have higher percentages of full time students, and are more likely to offer continuing and professional education programs, recreational or vocational programs. Rural colleges have fewer on-campus student services such as child care and employment and placement services for program completers. The smaller the rural college, the more likely these services are lacking. Rural community colleges are unique as each is based on community needs and location (Hardy & Katsinas, 2007). As such, these small, rural colleges should be allowed higher operational costs than their urban and suburban counterparts (Vineyard, 1979; Hardy & Katsinas, 2007).

Geography

The Appalachian Region has unique geographic problems that affect the education in the region. Students live in narrow valleys and steep terrain on privately maintained roads. The community colleges are usually located in small towns or cities

and wherever level ground could be found. While the road system around the colleges and in town is maintained during the winter months and the college remains open, students may be snowed in or unable to travel on icy country roads to get to class. This affects attendance and therefore student learning. The mountainous terrain in the highlands (central sub-region) limits access to broadband computer connections, mobile cell phone service, and computer access for students in their homes (Baldwin, 2003; Balsam West FiberNet, 2007).

Rural and Non-rural Community Colleges

Historical Development

The first junior colleges were started in the mid 1800's with Monticello College being established in 1835 followed by Susquehanna University in 1858. These colleges functioned as post-secondary schools, and were similar to current community colleges as they provided the first two years of higher education. In 1862, the Morrill Act allowed the sale of federal lands to the states, leading to a burst of higher educational growth. The name "junior college" is attributed to William Rainey Harper, who coined the term along with its designation as a two-year college in the 1890's (Geller, 2001). By 1921, there were over 200 junior colleges. With the Great Depression came an increase in enrollment, probably due to the lack of employment opportunities (Geller, 2001). Enrollments declined during World War II, then resurged after it ended. At that time, President Truman's Commission on Higher Education named the institution the "community college," and offered two years of free education, and enrollment increased (Cohen & Brawer, 2003; Geller, 2001). The Korean War boosted enrollment as students were granted draft deferments if they were enrolled full-time in college, and the GI Bill

Act of 1944, renamed the 1952 Veteran's Readjustment Act, extended benefits to Korean War veterans (Geller, 2001).

By the middle of the 20th century, community college systems developed to oversee state community colleges (Cohen & Brawer, 2003). By 1960, there were over 400 two-year public colleges. In 1957, Eisenhower and his Commission of Education Beyond High School considered community college education a responsibility of the state and local governments. In the following decade, the number of community colleges grew to 847. In the 1960's, two bills helped to increase enrollment and provide money for the colleges. These bills were the Higher Education Facilities Act and the Vocational Education Act of 1963 (Geller, 2001).

There are publicly and privately owned community colleges, and the governance of these colleges differs. Associate degree-granting colleges have three categories: Publicly controlled two year colleges are place-based institutions and are divided into urban-, suburban-, and rural-serving institutions. These also include two year colleges governed by four-year institutions. Privately controlled colleges are private, nonprofit junior colleges and proprietary institutions, and special two-year colleges are those such as hospital-based radiography and nursing programs and may be either privately or publicly owned (Hardy & Katsinas, 2007)

The cultural evolution of these community colleges is described by Tillery and Deegan (1985) as an evolution of generational stages: (1) 1900-1930 - an extension of secondary school, (2) 1930-1950 - a junior college, (3) 1950-1970 - a community college, (4) 1970-1985 - a comprehensive college, and (5) an unnamed period from 1985-1999. The evolution of the community college after 1999 has been named by Geller (2001) as

the learning community college. Roueche & Jones (2005) describe the community college of the 21st century as the entrepreneurial college. Milliron, et al, (2003) suggest the community colleges have undergone three waves of transformation: (1) a comprehensive integration of the technical and vocational education; (2) a growth of workforce development; and most recently, (3) an institution with an increased commitment to institutional advancement through fundraising efforts.

Community colleges are located in rural, suburban and urban areas of America with 34% of students attending rural community colleges, 32% attending suburban community colleges, and 34% attending urban community colleges (Hardy & Katsinas, 2007). Many of these colleges belong to the American Association of Community Colleges (AACC), which lists a membership of 1,121 colleges, with 186 located in cities, 227 located on the fringe of large cities, 315 in mid-size cities, 77 on fringe of mid-size cities, 60 in large towns, 296 in small towns, and 110 in rural towns (AACC, 2009).

Cultural Differences

As community colleges are designed to serve their communities and educate their population, their cultural environments are different, as they mirror the environments of their locations. Urban colleges are located in large and medium-sized cities. Community colleges in urban areas have an advantage in workforce development due to the commercial and industrial opportunities in cities (Garza & Eller, 1998; Grubb, et al, 1997). Large suburban and urban colleges have similar organizational complexity and range of curricular offerings. A rural college's staff and faculty perform different administrative functions, and the curricular choices are fewer. Multiple roles of staff and

faculty inhibit the ability of rural colleges to offer workforce training programs (Hardy & Katsinas, 2007).

Rural community colleges have higher percentages of full time students, and are more likely to offer continuing and professional education programs, recreational and vocational programs. Rural colleges have fewer on-campus student services such as child care and employment and placement services for program completers. The smaller the rural college, the more likely these services are lacking. They have a higher educational cost per student. Rural community colleges are unique, as each is based on community needs and location (Hardy & Katsinas, 2007). Rosenfeld (2000) describes the rural community colleges of the 21st century as having the following key features: (1) more demand driven and choice of local employers; (2) more comfortable, affordable, and accessible; (3) provides a local repository of knowledge of local economy, services, and employment opportunities; (4) freer to adopt explicit economic development goals, add, expand, and customized new programs for mid-skilled labor force; and (5) open access.

In 1998, there were 700 rural community colleges representing 66% of all two year colleges. Rural colleges tend to be small as 33% have fewer than 1,000 students, and the remaining 66% have enrollment below 2,500. The communities these colleges serve tend to be sparsely populated and spread over large service areas (MDC, 1998). These colleges serve mostly populations with low levels of educational attainment (with out-migration contributing to this), a culture of low expectations for education, and economies more suited to lower-skilled workers. At least 25% of the communities are economically distressed (MDC, 1998).

In 2000, mean enrollment of students at urban and suburban colleges was 6,288 and 5,433, respectively. Mean enrollment at large rural, medium rural and small rural community colleges was 4,126, 1,757, and 761, respectively. This smaller enrollment of students in rural community colleges makes it difficult to offer a broad range of economic development and workforce training programs (Hardy & Katsinas, 2007). The rural community college is an undervalued resource as state and federal policies designed for urban and suburban colleges fail to consider and appreciate the special contributions they make to communities. Consequently, the state and federal bodies fail to understand what these rural colleges financially need to fulfill their missions (MDC, 1998).

The Appalachian Region includes a few urban areas, and the community colleges in these cities face their own unique challenges. These challenges include: serving as a principal vehicle for social development, stabilization and revitalization of neighborhoods in transition, and a potent force in economic development. These challenges also include: serving communities with chronic unemployment, decreasing tax bases, shifting economy, deteriorating schools, high illiteracy rates, and a continuous influx of new immigrants who lack basic language and coping skills (Stahl, 1986). These community colleges educate high numbers of disadvantaged and low socio-economic status students which require more resources. Often faculty in urban cities is unionized (Stahl, 1986).

The role of community colleges in community development is to promote the well-being of the local community in political, social and cultural areas. This is especially true in rural areas, which have a weaker business and industrial presence, and retirees who see the college as an important cultural resource (Ryan & Palmer, 2005). In order to provide these services, the college responds to the communities' need for non-credit and

specialized purpose courses. The college may also recognize social and cultural events and activities and provide or lease space for these events. Any profits generated by these activities are considered as entrepreneurial revenue (Bailey & Morest, 2004; Grubb, et al, 1997). Personal enrichment programs such as community arts development, community theatre, arts and crafts events, health fairs, and individual courses such as computer instruction and real estate are delivered to the local residents. The college provides educational courses to pre-college age children, including Tech Prep programs, Dual Enrollment programs, and specialized programs for children in kindergarten to eighth grade (Bailey & Morest, 2004; Grubb, et al, 1997).

Rural colleges, especially small ones, are more dependent upon state funding and are more vulnerable and harder hit with state and local budget cuts (Roessler, et al, 2006). For many decades, these colleges have received only a small percentage of federal community development support available; as a result they become increasingly fragile institutions which serve economically fragile communities (Fluharty & Scaggs, 2007). It has been the practice of state and federal governments to treat all community colleges the same no matter location or size, but geography and size do matter. Local, political and economic conditions of an institution are critical since they either impair or enable sustainability (Fluharty & Scaggs, 2007). Developing partnerships with local businesses and providing contract training provides additional revenue for community colleges. It is more difficult for rural community colleges to operate state and federal workforce development programs which are designed for urban environments (Katsinas, et al, 2003).

Entrepreneurialism

Entrepreneurialism Defined

The term *entrepreneurialism* has recently been used to describe community colleges' efforts to generate revenue streams. Prior to this century, entrepreneurial activities were instituted by innovative community colleges. Although it is has long been expected that senior colleges and universities raise money to supplement any federal, state, or local governmental income, this is a new and challenging experience for community colleges. Now, in order to generate outside revenue, many community colleges are transforming themselves into entrepreneurial profit-seeking organizations. An entrepreneurial community college creates a culture that proactively meets challenges, remains flexible, encourages change and innovation, recognizes opportunities, takes risks, generates sustainable resources, and moves the mission of the college forward (Roueche & Jones, 2005).

Entrepreneurialism has been defined by many researchers in business as individual or organizational behavior needed to create new and sustaining revenue streams to ensure financial growth and stability (Lumpkin & Dess, 1996: Miller, 1982; Slevin & Covin, 1990). Entrepreneurial behaviors in an individual are defined as flexibility, innovativeness, risk taking, pro-activity in monitoring the environment for opportunities, and aggressive competitiveness (Lumpkin & Dess, 1996: Miller, 1982; Slevin & Covin, 1990). Entrepreneurialism as defined in the 21st century applies generally to a corporate model rather than to an individual characteristic or behavior. Entrepreneurialism has been molded by researchers and business experts and shaped by accelerating globalization and technological innovation.

The foundation for the modern entrepreneurial business is derived from three historical landmark research studies by Miller (1982), Slevin & Covin (1990), and Lumpkin and Dess (1996). These researchers conducted non-experimental quantitative research to define entrepreneurialism. Purposeful sampling was used in each of these studies to choose the businesses and administer surveys to the executives of each organization.

The business definition of entrepreneurialism in 1980s varies depending on the size and type of the business. This is supported by Miller (1982) in his landmark quantitative study of 52 businesses, in which he sought to define entrepreneurialism as a characteristic of the business rather than through the personality traits of individuals, as had been the focus of prior research. He found that: (1) in simple businesses, operating in homogeneous environments, and generally run by owner-managers, there is a strong positive relationship between locus of control and entrepreneurship; (2) in larger planning businesses, a strategic planning process which emphasizes systematic innovation and entrepreneurship allows the business to be entrepreneurial while conservatively managing its core structure; and (3) in businesses operating in heterogeneous markets and unpredictable and dynamic environments, there exists an entrepreneurial spirit and culture monitoring the environment and making changes accordingly. Miller's study fills a large gap in research literature, as it focuses on the business rather than the individual and studies businesses of varying sizes. Its weakness is the small number (52) studied necessitating generalizations to be inferred.

In the 1990s individual entrepreneurial characteristics were applied to a business' behavior. No matter the organization's size, entrepreneurial behavior was defined as:

(1) risk taking, a willingness to pursue high risk projects; (2) proactivity, a willingness to initiate actions to which competitors respond; and (3) innovation, a strong emphasis on research and development of new products or services (Lumpkin & Dess, 1996; Slevin & Covin, 1990).

Company structure continued to play a significant role in defining entrepreneurialism. Slevin and Covin (1990), in an important landmark study of 221 firms, supported and confirmed Miller's (1980) prior research in that entrepreneurial behavior is positively correlated with performance in the presence of an organic organizational structure, which is defined as more adaptable, more open in communication, consensual, and loosely controlled. They further found entrepreneurial behavior to correlate negatively with performance in the presence of a mechanistic organizational structure where authority is based on strict-line management, communication is highly structured and restricted, and decision making has little input from subordinates. In addition, they imply entrepreneurial behavior is not always the best action for an organization to support, because management of an organization is a complex process in which there must be a balance between organizational structure and the type of entrepreneurial behavior desired. They suggest when the environment becomes hostile, conservative management style and mechanistic organizational structures will move toward entrepreneurial management style and organic organizational structures.

Similar to Miller's (1982) description of strategic planning and organic firms, Slevin and Covin (1990) recommend creating an organization with two different structures with two different goals. The core business structure supports the goal of being

stable and needs to be more mechanical and efficiently bureaucratic. They label the organic firm structure a "spin-off division," which supports the goal of being more entrepreneurial, risk taking, and capable of producing new products and large profit margins. A spin-off division creates a balance and allows the firm to be more effective when monitoring the changing environment and making strategic decisions.

Lumpkin and Dess (1996) expand the definition of entrepreneurialism in a literature review type study of more than 30 individual theories and research during the 1980s and 1990s. They coined the term *entrepreneurial orientation* (EO) to describe the processes, practices, and decision-making activities by key organizational members leading to new-entry opportunities. Building on and agreeing with Slevin and Covin's (1990) research, Lumpkin and Dess (1996) present five dimensions in the process of entrepreneurship:

1. Autonomy: An independent action of an individual or team to present an idea or vision and carry it to completion;
2. Innovativeness: The tendency to engage in and support new ideas, products, services or technological processes;
3. Risk-taking behavior: Venturing out into a new activity where organizations commit resources and borrow money;
4. Proactiveness: Anticipating future problems, needs, and changes;
5. Competitive aggressiveness: A firm's propensity to directly and intensely challenge its competitors and to outperform them. (p.135)

Confusion still exists about the definition of entrepreneurialism. Research conducted by recognized experts in economics, business, and education presented fresh

insight and opinions, and contributed to the knowledge presented by our landmark researchers. These analytical narratives by Montanye (2006), McMullen and Shepherd (2006), and Ireland, Hitt, Camp, and Sexton (2001) serve to review the literature, build on previous theories, and form current definitions of entrepreneurialism.

Entrepreneurial Research in Higher Education

Although there has been considerable research conducted on individual and business entrepreneurialism, there is a paucity of research in the academic setting of higher education (Rankin, 2003). The concept of being entrepreneurial has long been a recognized component of higher education strategic planning for financial stability. Borrowing from business theories and activities, four-year colleges and universities have used entrepreneurial activities to support their financial needs in the past, but in the 21st century these colleges are required to rely even more heavily on this income stream (Clark, 1998; Jamali, 2005; Lui & Dubinsky, 2000; Zewe, 2006). These activities include fundraising, grant writing, research grants and royalty from intellectual property, spin-off companies, athletics, and workforce training contracts (Clark, 1998).

Until recently, entrepreneurialism has been the subject of research and application primarily in the private sector business community, but it has gained increasing attention in higher education (Kirby, 2005) as public four-year colleges and universities face declining financial support from state and federal bodies. Public universities and four-year college administrators are facing increasingly difficult times as public funds are decreasing while operating costs and accountability for the use of such monies are increasing. With these financial pressures, they are seeking alternative means of generating revenue to support their missions by using academic or institutional

entrepreneurship (Clark, 1998; Finkle, Kuratko & Goldsby, 2006; Jamali, 2005; Lui & Dubinsky, 2000; Zewe, 2006). The key factor has been the steady decline in the share of operating support from state governments. It is unlikely this trend toward greater market dependence will reverse itself, due to competition from private non-profit educational entities. For example, in 1979, state governments provided 50% of the operating support for state universities. However, by 2000, support had dropped to an average of 36% nationally for all colleges and less than 20% for many research universities (Breneman, 2005).

Much of the research has been conducted on four-year colleges and universities in European countries, where European colleges have been practicing aggressive entrepreneurialism for many years. In a qualitative case study of five universities in England, Holland, Scotland, Sweden and Finland during the years 1994-1996, Clark (1998) finds the universities to be aggressively entrepreneurial because the governments of each of these universities expects them to improve the economic status of the country by partnering with business. Clark uses the term *innovative university* interchangeably with *entrepreneurial university* as he sees the former as softer and having more appeal. For him, an innovative university does not have the negative connotation of *capitalism* in which businesses seek profits.

Unlike in Europe, the term *entrepreneurial* is well-regarded in the United States. In a mixed methods study of *academic capitalism* (his term for entrepreneurialism), and media messaging in the pursuit of revenues and national prominence, Zewe (2006) administered a national public survey that found a strong support for athletics at Louisiana State University (LSU). However, Zewe (2006) finds Americans' knowledge

of entrepreneurial academic research being conducted at LSU to be lacking. The study used organizational knowledge creation and resource dependence theories to analyze the emergence of academic capitalism.

Entrepreneurialism is defined by Louis, Blumenthal, Gluck, and Soto (1989) as the attempt to increase individual or institutional profit, influence, and prestige. This is accomplished through the development and marketing of research ideals or research-based products. In a study of 50 identified research universities with 770 surveys out of 3,180 returned by biology faculty, they find the need for entrepreneurialism to be stimulated from faculty up to administration and for entrepreneurial faculty to be hired. The survey identifies five types of academic entrepreneurialism: (1) engaging in large-scale externally funded science research, (2) earning supplemental income, (3) gaining industry support, (4) obtaining patents or generating trade secrets, and (5) commercialization, which is forming or holding equity in private companies based on the faculty member's own research. Louis, et al (1989) find individual characteristics and attitudes to be most important for large research projects and supplemental income, and local group norms are needed to predict active involvement in commercialization. In conflict with other studies, Louis, et al, (1989) suggests university policies and structures to have little effect on entrepreneurialism. The study was limited to a life science department survey and thus may not be reflective of the views and attitudes of university administrators.

In a quantitative study exploring the relationship between state revenue change and academic entrepreneurialism at the college and academic department levels of analysis at the University of Utah, Andrizzi (2003) finds a statistically-significant

relationship between the subculture of colleges and departments and the level of entrepreneurial activity. The study shows the amount of entrepreneurial activity was significantly related to the academic and entrepreneurial values of each department. Strong entrepreneurial values in a department are correlated with higher levels of entrepreneurial activity, while weak entrepreneurial values in a department are correlated with lower levels of entrepreneurial activity. Like Zewe (2006), Andrizzi refers to *academic entrepreneurialism*, but defines it simply as the notion of seeking funding from non-state sources. He suggests that entrepreneurialism arises from resource-dependence theory based on a single premise: When an organization is deprived of resources, it goes out and seeks new ones for survival.

There is a scarcity of research in the area of rural community colleges and economic and workforce development (Katsinas & Miller, 1998). The largest and most well-known research is a landmark five-year study conducted by the Rural Community College Initiative (RCCI, 2003). It was created in 2002 and sponsored by the Ford Foundation; MDC, Inc.; the North Central Regional Center for Rural Development; and the Southern Regional Center for Rural Development. The assumption underlying this project was, given the necessary resources, rural community colleges in persistently poverty-stricken regions could increase access to higher education and serve as a catalyst for economic development. Rural colleges generally serve a broad socioeconomic cross section of the population, and those in the RCCI serve large numbers of the poor.

The RCCI pilot study finds that strategies appropriate for urban and suburban areas in the 21st century may be inadequate for rural communities facing challenges of rural geography, cultural traditions, low income, sparsely populated areas, and a lack of

telecommunications, internet access, and highway systems. In addition to these challenges, distinguishing characteristics of the economies of rural distressed areas include: (1) an absence of indigenous entrepreneurs, (2) a scarcity of capital available for development, and (3) a lack of moderate to large businesses to invest in economic development and to employ inhabitants of the area (RCCI, 2003).

According to Katsinas and Miller's (1998) research study, the average total budget for a rural community college in 1998 was about $4.5 million. With 10 years of inflation this amount is much more today. With limited or scarce resources, the community college provides training to a wide range of firms and individuals, and must decide whether to support short-term political agendas or a longer-term rural development strategy. This causes a dilemma when the college must provide a broad-based curriculum in general education, transfer programs, and vocational and occupational training. Rural areas are more dependent on natural resources (including agriculture, forest, mining, and textiles) and manufacturing (Katsinas & Miller, 1998). These rural colleges serve a broad socioeconomic cross section of their population which is mostly poor and uneducated (Garza & Eller, 1998; Grubb, et al, 1997).

The need to become more self-supporting has universities using a variety of activities to produce sustaining revenue streams to provide a diversified funding base of discretionary funds. These include earned income from campus services, student fees, alumni fundraising, philanthropic foundations, research grants, royalty income from intellectual property, spin-off companies, and workforce training contracts (Clark, 1998). In universities and colleges, these activities and ventures are distributed among various

divisions and departments. They are measured by return-on-investment (ROI); in other words, they need to generate and maintain a profit to continue to operate.

In a quantitative study on public liberal arts and general baccalaureate colleges, Kirby (2005) examines the current patterns and successes of entrepreneurial activities using a survey instrument sent to institutional presidents. With a respondent return rate of 37%, his research finds 80% of the presidents reporting the highest levels of success by increasing tuition and fees and using college/university foundations to generate revenue. Significant positive correlations are associated between level of entrepreneurial activity and the numbers of full time faculty, changes in state appropriations, changes in purpose, and missions that encourage entrepreneurial endeavors.

Although raising tuition and fees have been found to be the quickest and surest ways of generating needed revenue, other types of activities are used by many universities and colleges. Types of higher education entrepreneurial activities include: (1) fundraising targeted at wealthy individuals, corporations, and foundations; (2) large-scale research projects funded through public grants, and (3) contracted research for external organizations. Less-often used activities include: (1) consulting and external teaching, (2) spin-off firms; (3) patenting/licensing, (4) commercial sales of products developed within the university through spin-off companies, and (5) testing and calibration facilities for external organizations (Louis, et al, 1989; Wright, Birley & Mosey, 2004).

The terms *workforce development*, *economic development*, and *community development* have been used interchangeably to identify non-credit education provided by community colleges for the benefit of students, employers, and the community. As early

as the 1990s, Grub, et al. (1997) attempted to understand how these terms were used in a landmark research study of five urban and two urban and rural mix community colleges. This study was conducted for the National Center for Research in Vocational Education, the League for Innovation in the Community College, and the National Council of Occupational Education. The study finds little consensus on the use of these terms and recommended using the term *entrepreneurial college* to identify all areas of non-credit education and training.

These entrepreneurial activities may have the ability to generate revenue or profits to be used as discretionary funds by the college to supplement its operational budget. Depending on the type of program and the efficiency with which the program is delivered, profits may vary (Van Noy, et al, 2008). In fact, a 2006-2007 national research study of state funding of non-credit education, financed by the Alfred Sloan Foundation and conducted in collaboration with the National Council for Workforce Education and the National Council for Continuing Education & Training, finds most non-credit education and training programs do have the ability to generate at least some revenue. This national study interviewed individuals in a variety of state departments with oversight for community colleges and workforce development in each state, and conducted case studies of 20 colleges ranging in location from large city, to small city, suburban, and rural (Van Noy, et al, 2008).

Only one college, Craven Community College in Bern, NC, was considered rural. One of the large suburban colleges, Anne Arundel Community College in Maryland, identified its revenue as *enterprise money* referring to its aggressively entrepreneurial nature. Its non-credit education generates profit and sends it to the general fund where it

provides funding, new opportunities and new initiatives for credit. Another midsize city community college, in Bellevue, Washington (home of Microsoft) had revenue of $6.3 million in 2001 from non-credit education, including $950,000 in contract training programs. While this study finds large and midsize community colleges making profits, this may not be the case for smaller colleges such as Craven Community College located near the North Carolina coast which hopes to break even with its offerings. It receives noncredit FTE funds from the state and classes are self-supporting (Van Noy, et al, 2008).

This relationship between academia, government and industry is described by Leydesdorff and Etzkowitz (2001) as the *triple helix*. In this helix configuration, academia is a source of business formation and technological and regional development, as well as a provider of trained persons and basic knowledge. Through these relationships, the university is conducting academic entrepreneurialism or local innovation in universities (Leydesdorff & Etzkowitz, 2001).

Entrepreneurial Centers

Universities may use many different venues to stimulate the economy and generate revenues to sustain themselves. Developing "entrepreneurship centers" to educate students who create profitable businesses is one such method. These entrepreneurship centers are defined by Finkle, et al. (2006) as having a center for and an academic curriculum dedicated to entrepreneurialism. In a quantitative study of 146 recognized members of the National Consortium of Entrepreneurship Centers (NCEC) with a 64% response rate, they examine the characteristics of the entire sample and then compare the differences between the top-ranked centers and the non-ranked centers. They

suggest top-ranked centers (1) contain mostly credit courses aimed at an undergraduate or a graduate degree, (2) conduct external outreach activities, and (3) perform research in the field of entrepreneurship. These centers train students who become entrepreneurs and start their own businesses that ultimately improve the economy.

Workforce Development

Workforce development is the key to economic development of a region and can directly contribute to the college revenue stream, directly improve the economic health of the region, and improve community support for the local college (Garza & Eller, 1998; Grubb, 2001; Klofsten & Jones-Evans, 2000). Economic growth is stimulated by the interaction of educational institutions that provide learning, with governments and industry that provide support and jobs. Governments expect universities to solve economic problems by linking up with industry contacts outside the university (Clark, 1998). On a smaller scale, local governments expect the same, and community colleges gain political clout by providing these services (Van Wagoner, et al, 2005).

Workforce training efforts involving community colleges started as early as the 1970s when the federal government passed legislation to combat technological unemployment and poverty. The Comprehensive Employment and Training Act of 1973, the Job Training Partnership Act (JTPA) of 1981, and the Workforce Investment Act (WIA) of 1998 provided technical training. To assist individuals in moving off welfare rolls, various welfare-to-work programs began in the 1980s. Most recently, the Personal Responsibility and Work Opportunity Reconciliation Act of 1996 imposed new requirements requiring people to work first and then to enter into training programs. The federal government has expanded support for adult education including classes in

remedial education and English as a Second Language (ESL). These classes are often held in community colleges. Government support of these programs is in the billions of dollars each year (Grubb, 2001). In some localities, the community college is the only government agency that provides these programs. In others, they are spread out among many different community programs.

Continuing Education

Many public and private universities have revenue-producing schools or divisions of continuing education (Breneman, 2005). These divisions at top ranked universities are able to generate large profits for their seminars. For example, Harvard Business School Executive Foundation (2008) has a six-day seminar on "Strategy: Building and Sustaining a Competitive Advantage" for the tuition amount of $11,500. Stanford Graduate School of Business: Executive Education (2010) has a four-day seminar on "Strategic Uses of Information Technology" priced at $8,700.

Fundraising Activities

Institutional advancement is a broad term used to describe the methods used by colleges to encourage private giving. They encompass individual and corporate donor solicitations, giving campaigns, capital programs, grants, and scholarship endowments. Four-year colleges and universities have a long tradition of alumni support of their institutional endowment funds. Harvard University has been the recipient of extremely large gifts such as a 2008 gift of $100 million by David M. Rockefeller, an alumnus, to its endowment fund (Strom, 2008). The market value of these endowment funds reaches into the billions of dollars for top universities. The National Association of College and University Business Offices (NACUBO) reports 2008 endowment fund market values of

$36.5 billion for Harvard, $22.8 billion for Yale, $17.2 billion for Stanford, $16.3 billion at Princeton, and $10 billion for MIT (NACUBO, 2009).

Research grants provide the money to hire faculty and purchase equipment for research. The research grant office oversees the development of grants, assists with industry contacts, and controls and monitors the royalty income from intellectual property. The success of these activities requires the support of the research faculty. Research grants often produce spin-off companies. These venture companies are created by academic entrepreneurs who recognize opportunities, shape their ideas to meet market needs, and develop spin-off ventures. These independent spin-off companies are created to commercialize technological discoveries and generate revenue. In this manner, intellectual property is a prime asset of the university, and creating and sharing it is a core role of the university (Wright, et al, 2004).

Competing for funds at the national level is more difficult for community colleges because they need to overcome the image of being completely funded by local and state governments and unworthy of large foundation support. In a qualitative Delphi research study of 42 North Carolina community college presidents, Jackson & Glass (2000) find that while community colleges have increased their efforts to obtain money from educational foundations, their efforts have generated less income than senior public and private institutions. The study discloses other significant findings: (1) a need to assume and maintain a leadership role in economic development was central to attracting greater private financial support; (2) solicitation of community college alumni should not follow the four-year college models, but should seek new creative approaches; and (3) a lack of

data on amounts received and reported by individual colleges to the Council for Aid to Education hampers research on this topic.

In a quantitative research study using the Council for Resource Development's membership role and examining the annual revenue gained by community college foundations, Carrier (2003) finds that the size of the college endowment was directly related to the size of the foundation's revenue generation. Additionally, the board member's role was found to be critical to success, and college size was positively significant to foundation revenue amounts. Carrier's (2003) findings are supported by Morgan (2005) in a quantitative study of 28 Florida community colleges designed to establish a profile of grant development programs and identify which factors contributed to the success of grant proposals. Although no statistically significant predictive relationships were found, it was implied that organizational and operational integration of institutional advancement functions into the college's strategic plan influenced the ability of the college to be successful, and levels of success of fundraising are directly related to the level and importance of development officers.

The outlook for fundraising has shifted and improved since the Jackson & Glass (2000) research study. This shift is being driven by media attention to shrinking external funding streams and the attention of large donors who believe that community colleges are truly worthy of receiving philanthropic support (Arenson, 2006; Babitz, 2003; Ryan & Palmer, 2005). As reported by Arenson in a New York *Times* 2006 newspaper article, community colleges are attracting the attention of philanthropists. As college diplomas become increasingly important and costs continue to climb, foundations such as Ford, James Irvine, Jack Kent Cooke, Lumina and Heinz Endowments, and companies like

MetLife are turning to community colleges and asking how they can help low-income students attend college (Arenson, 2006). An outstanding example of these donations, Lumina's *Achieving the Dream*, is a program built to improve student success at community colleges by helping colleges use data to analyze student retention and graduation rates. Another example is the Jack Kent Cooke Foundation's contribution of $30 million a year with part of it going to Virginia community colleges (Arenson, 2006).

In the 21st century, foundations, corporations and wealthy individuals are recognizing community colleges as worthy of contributions greater than $1 million. Santa Barbara (CA), Delta (Michigan), Broward (FL) and SUNY Monroe (NY) urban community colleges have benefited from this new phenomenon. These institutions have adapted and organized their foundations based on four-year and university programs that have a mix of annual fundraisers.

Summary of Entrepreneurial Research in Higher Education

Entrepreneurialism in higher education takes many forms and has been defined as a multidimensional concept: a process of risk taking, innovativeness, and proactiveness in monitoring the environment for opportunities that are adopted in strategic management activities (Klofsten & Jones-Evans, 2000; Louis, et al, 1989; Lui & Dubinsky, 2000; Wright, et al, 2004). Entrepreneurialism develops in response to a reduction in operating resources and the need to generate alternate sustaining revenue streams (Clark, 1998; Finkle, et al, 2006; Jamali, 2005; Lui & Dubinsky, 2000; Zewe, 2006). By engaging in these activities, higher education is practicing institutional or academic entrepreneurialism and generating sustaining revenues for their institutions.

Entrepreneurialism in Higher Education

Organization, Administration, and Governance of Entrepreneurialism

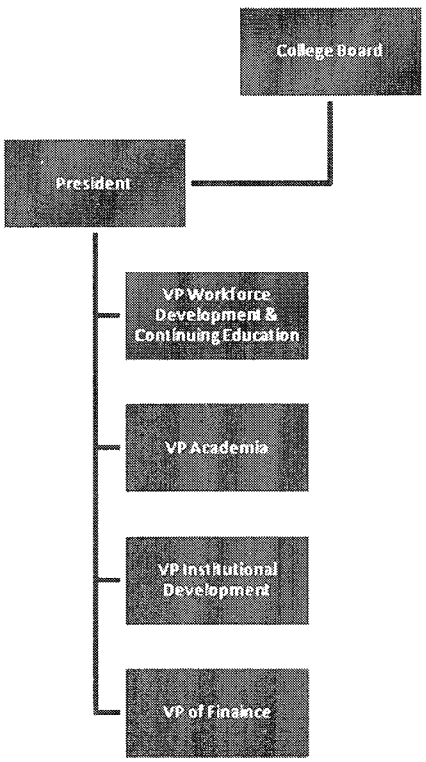
From 1916 to 2000, there has been diversity in community college organization structure. There are still commonalties in the ways in which they have organized to meet changes in their size and missions. Underwood & Hammons (1999) study of American Association of Community Colleges (AACC) members exemplifies the flexibility and adaptability of community colleges to changing environments. With 530 (49%) of the institutions reporting, 71% of respondents had reviewed their organizational structure within the past 12 months, and 15% within the last 13-24 months. Reorganization has occurred in 56% of them within 12 months, and 23% will be reorganizing within 24 months. In a majority of them, 75% of the presidents require vice presidents and deans to report directly to them. The second highest group had vice presidents and deans reporting to multiple senior vice presidents. Small institutions favored fewer levels of hierarchy than their larger counterparts. Instructional units in the past were organized by subject matter, but now they trend toward interdisciplinary units and cluster units (Underwood & Hammons, 1999).

Typically, a community college's organizational structure from top to bottom includes the president, and reporting to him a vice president of academia responsible for credit earning programs, a workforce development officer responsible for developing workforce training for businesses and industries and for continuing non-credit education for the community, a vice president of institutional advancement responsible for fundraising and grant activities, and a vice president of finance who keeps financial records including revenues from entrepreneurial activities. The president reports to and

works with the college's board, which is responsible for promoting the college's image and fundraising. Some community colleges are governed by a community college system, as is the case in Virginia. There, the workforce development officers also report to and work with the Virginia Community College System's (VCCS) workforce development official. Colleges have some discretion in the development of their organizational structure as in Virginia where the VCCS gives them guidelines based on criteria from accreditation standards of the Commission on Colleges and Southern Association of College and Schools. Essentially each community college should have an organizational structure which provides for the effective operation of the college (VCCS, n.d.). See the figure below.

Figure 1:

VCCS Organizational Structure



Entrepreneurialism in Community Colleges

The Need to Practice Entrepreneurialism

The effects of a weak economy and decline in state and local tax revenue have caused deficits in local and state budgets that have adversely affected community colleges. By 2003, nearly every state in the nation had serious budget problems causing a reduction in support of higher education (Wenrich & Reid, 2003). As a result of the continuing recession and decline in state revenues, many state legislatures choose to fund programs such as Medicaid and kindergarten - 12th grade education before higher education. Post-secondary education is considered a discretionary item and is generally funded with monies left over after priority funding. Because of this, it is no longer as effective as it had been in the past for college presidents to lobby for state funds (Katsinas, 2005). Many community colleges are restricted by state governments, and are unable to raise the tuition to cover the deficits in their budget. Instead, they must become entrepreneurial and discover alternative revenue sources to maintain their fundamental missions (Brightman, 1989; Ryan & Palmer, 2005; Zeiss, 2003).

With growing enrollments and increasing technology needs, community colleges are being forced to provide quality education to more students with less state revenue. In addition, governments expect colleges to contribute to solving economic problems by linking up with industry contacts. Economic growth is stimulated by the interaction of educational institutions that provide workforce training in partnerships with government and industry (Clark, 1998). As such, colleges are expected to provide workforce training especially in rural areas where they are being expected to stimulate or revitalize their economies. Providing this training incurs a cost in providing faculty, equipment, and

space. The college takes a risk and hopes to achieve a return on its investment for providing the training.

In the 21st century, change is constant due to accelerating globalization, technological innovation, and competitive advantage. For a community college to survive in this century, its president needs to (1) find sustaining alternative revenue sources to supplement the operational budget; (2) inspire the college to embrace change, and (3) become entrepreneurial (Clark, 1998). This new entrepreneurial community college formally recognizes in its mission this new role which is aligned with its choice of entrepreneurial revenue streams (Hearn, 2003). An excellent example of this is Haywood Community College, located in the Appalachian Region in North Carolina. Its Mission Statement (2007) has the following statement:

> The college provides accessible educational training, entrepreneurial, cultural, and social opportunities that focus on current trends and foster the development of the individual and communities it serves... The college fulfills its mission through the following objectives that provide... collaborative initiatives with K-12, colleges and universities, business, industry, government, and other organizations to promote lifelong learning and enhance workforce, economic, and community development. (p.1)

With limited financial resources, community colleges have been searching for alternative funds to supplement declining revenues as early as 1981 (Bock & Sullins, 1987; Taber, 1995). Many colleges in the mid 1980s opted to manage the budget by

reducing programs and services, and cutting staff and faculty. While others sought out new sources of revenue. Resource sharing was an early method used in the 1980s to reduce costs and provide new resources (Taber, 1995). Another method included organizing college foundation boards similar to those in senior colleges and universities, and outsourcing auxiliary services such as the cafeteria and bookstore. A few innovative community colleges involved business and industry and formulated contract training, either via credit or non-credit classes. This contract training focused on three main goals: (1) training the workforce; (2) aiding in economic development; and, (3) assisting with community development (Grubb, et al., 1997). Other colleges sought outright monetary grants, donations of equipment, staff to train students, and shared training space (Brock & Sullins, 1987).

In the 1990s, creative collaborative partnerships between community colleges, city governments and local businesses increased in number as facilities needed repair and updating while growing student populations required new or additional facilities. Resources from state and local governments continued to decline into the 21st century forcing community colleges to search for new revenue to support new programs and technology (Bailey & Morest, 2004; Hearn, 2003; Roueche & Jones, 2005; Van Wagoner, et al, 2005).

Types of Entrepreneurial Activities

Many of the entrepreneurial activities used by community colleges are similar, while some vary due to college setting or location. A recent research study by Rebecca Beard (2008) explored entrepreneurial practices of United States community colleges. Using a mixed method she surveyed 982 community colleges (435 returned surveys) to

ascertain the methods used to generate sustaining alternative revenue. More than 50% of respondents stated they were located in a rural geographical setting, 24% in a suburban setting, and 18% in an urban setting. She found that high sustaining (more than one year) revenues were generated by athletic and entertainment complexes, ownership of real property with mineral rights and leases, patents and royalties on intellectual property in technology and life sciences, foundation endowments, property leasing to leverage an asset with a negative impact, and some auxiliary services such as parking.

Beard's (2008) research found examples of high revenue generation but low sustainability in capital campaigns, individual donor contributions, and sale of property and other appreciated assets. Examples of activities using an excessive amount of resources and yielding very little revenue include institutional staffing, programming, and other financial resources including college-owned bookstores and restaurants. Examples of low revenue but with high sustainability include rental property, some patents and royalties, some grants and contracts, alumni association and online and distance education. Her study recommends further study into how attainment of alternative sources of revenue impacts the institutional mission and goals, student access to higher education, and teaching and learning, and planning and programming. The study recommends further study of how geographical setting (rural, suburban, and urban) affects attainment of sustaining alternative revenues.

Workforce Development

Workforce development is a major institutional function of the community college and includes credit and noncredit programs, career and technical area training classes, and contract training units providing ~~proving~~ custom training for businesses and

industries while bringing revenue into the schools (Garza & Eller, 1998; Grubb, 2001; Jacobs & Dougherty, 2006; Orr, 2001). These workforce training departments serve an increasingly diverse population of learners in their local communities as well as state and national partnerships. The departments used to be considered an auxiliary enterprise, but with decreasing state funding, colleges are committed to use entrepreneurial approaches to generate surplus revenues to support their mission. Some colleges have added workforce training as part of their mission. As enrollments increase and the demand grows for programs that provide labor market skills for a globalized economy college, more emphasis is being placed on these entrepreneurial units to build and maintain larger, more technical, and expensive programs (Downey, et al, 2006).

Much like the federal government, the states since the 1960s have elaborated their own programs involving state agencies and educational institutions to train people and to stimulate economic development. Early examples of this can be seen in statewide workforce training strategies employed by North Carolina, Oregon, and Florida. With effective communication and coordinated efforts between agencies, more comprehensive and successful services are provided (Grubb, 2001). This strategy is also being adopted in the Commonwealth of Virginia. At an April 1, 2008 Virginia Society for Human Resource Management (VASHRM) meeting in Richmond, Governor Tim Kaine announced a new strategic plan for the delivery of workforce initiatives under the direction of the chancellor of the state's community college system. He emphasized the importance of community colleges as they are well-placed to respond to local needs for workforce development. In addition, the plan is for the community colleges to set up

offices in high schools to help guide students, some of whom might never have considered secondary education, into community colleges (Kaine, 2008).

Continuing Education

Continuing education serves as a revenue source while at the same time promoting the well-being of the local community as it provides political, social and cultural education. Educational courses include non-credit and specialized purpose courses for adults, such as certificate programs in computers, real estate and health. Other offerings include personal enrichment programs such as community theatre, arts and crafts events, and health fairs. For pre-college age students, offerings include Tech Prep programs, Dual Enrollment programs for high school students to earn college credit, and specialized programs for children in kindergarten to eighth grade (Bailey & Morest, 2004; Grubb, et al, 1997).

Resource Sharing & Auxiliary Enterprises

Another revenue source is resource sharing, an entrepreneurial activity leveraging community resources collaboratively to decrease costs and provide for new revenue streams. Examples include providing internet services, library, gymnasium, swimming, theatre space, and meeting places for the community (Roueche & Jones, 2005). Colleges have invested in auxiliary enterprises such as building dormitories, and providing printing and other services to the community.

Fundraising

Fundraising is a broad term used to describe methods used by colleges to encourage private giving, encompassing individual as well as corporate donor solicitations, giving campaigns, capital campaigns, special events, planned giving

strategies, donor stewardship activities, alumni outreach, grants, and scholarship endowments. Traditionally, the community college has been sensitive and responsive to its local service area, securing additional resources through its relationships with its key stakeholders. The college's close ties with area citizens and businesses enhance opportunities for fundraising. Organizing fundraising campaigns to capitalize on these ties is becoming increasingly important as state support diminishes. The community colleges' success in fundraising depends on building upon these relationships and incorporating them into the institution's overall community relations effort, assigning and coordinating tasks, and using return on investment strategies in fundraising campaigns (Ryan & Palmer, 2005).

Fundraising activities include developing giving campaigns and capital programs, individual and corporate donor solicitations, scholarship endowments, alumni giving, planned giving through wills and estates, and solicitation of foundation grants (Babitz, 2003; Bock & Sullins, 1987; Carrier, 2003; Ryan & Palmer, 2005). The need for additional revenues has presidents and foundation board members under extreme pressure to increase their fundraising efforts. Fundraising efforts may be used to invest in entrepreneurial activities or may be part of the college endowment funds (Phelan, 2005).

Many colleges are escalating their efforts in fundraising and also investing these foundation funds into profit-making entrepreneurial enterprises such as purchasing buildings to lease. An example of this is Greenville Technical College's purchase of a deserted shopping mall which was turned into a University Center, leasing space to local colleges and universities, and is realizing an annual return of $400,000 (Roueche & Jones, 2005). In order to increase foundation funds, colleges are focusing their attention

on soliciting individual and corporate donations, developing giving campaigns, acquiring grants and bonds for buildings and technology, and increasing scholarship endowments (Roueche & Jones, 2005). Individual donor solicitations include estate planning services so individuals can bequeath property and other assets upon death. "Friend Raising" is a new concept of developing new friends today which may turn into donors tomorrow. Innovative colleges can follow the example of Wytheville Community College in Virginia, which designs its fundraising around its unique Appalachian cultural musical heritage. Since 1991, the college's Fiddle, Banjo, and Dance Club has held monthly and yearly jamborees (Wytheville Community College, 2009).

Community colleges located in urban areas have an advantage in fundraising endeavors as they have more alumni and a larger pool of community donors. Monroe Community College, located in Rochester, New York, has received large foundation donations, but its alumni continue to be its largest single source of donations. The advantage of having alumni as donors is that they: (a) live close by, (b) may have found a new career or been mentored by a professor who changed their life, and (c) may have gained access to an education through the community college when no other option was available. Since 1982, more than 3,000 alumni have contributed with the largest single gift being $1 million. During a capital campaign in the mid 1990s, the college raised over $6.5 million. One quarter of the foundation board membership is made up of alumni who have a personal relationship with the college (Pastorella, 2003).

Role of President and Workforce Development Officer

Entrepreneurial colleges have presidents and workforce development officers who understand financial and strategic planning and proactively search for innovative methods

to acquire additional revenue to support declining operational budgets. Entrepreneurialism is a new concept for these colleges and requires entrepreneurial leaders to transform them into revenue generating institutions. The characteristics of an entrepreneurial leader include flexibility, innovativeness, risk taking, proactiveness in monitoring the environment for opportunities, and aggressive competitiveness (Lumpkin & Dess, 1996: Miller, 1982; Slevin & Covin, 1990).

Before the 1980s a community college president's role was to manage the college and the operational budget. This traditional method of functional hierarchical line management emphasizes (1) cutting costs for declining resources, (2) focusing on promoting efficiency and combating waste, (3) dividing labor into simple, specialized jobs, (4) complying with rules, (5) following a clear chain of command, (6) planning by top administrators, and (7) communicating only to those who need to know. Management of the college and staying within the budget works in a stable environment but not in the face of decreasing state and local governmental support (Jamali, 2005). With declining state and local funding, presidents are asked to do more with less. Leist (2005) cited one community college president as saying presidents are expected to "make a dollar's worth of difference with a dime's worth of resources" (p. 58). How true in a time when colleges' financial budgets are shrinking.

Entrepreneurial presidents are those who make a commitment to embrace change and lead their colleges to transform themselves into flexible, adaptive and financially secure organizations (Roueche, 2005). The role of the president is to: (1) build a strong foundation board committed to fundraising, (2) hire good people and trust them to do their work, (3) secure funds through liaisons, political lobbying, and corporate and

individual contacts, and (4) serve as a facilitator and a motivator for the college to embrace an entrepreneurial culture (Anderson, Murray, & Olivarez, 2002; Roueche & Jones, 2005).

The president works with the Chamber of Commerce and its corporate and business members, economic groups, various community boards of banks, hospitals, and social service organizations. These relationships help to bring in opportunities for partnerships and fundraising (Roueche & Jones, 2005). The mission, location, culture, governance structure, funding streams, and student characteristics require markedly different professional and leadership qualities for rural college presidents than those who preside over urban and suburban community colleges (Leist, 2005).

The workforce development officer plays an important role in economic development by encouraging a culture of learning and working to achieve economic and social goals for the stakeholders of a region. These stakeholders include its residents, industries, and local government. The result of economic development is the improvement in the quality of life for the people of the region (Klofsten & Jones-Evans, 2000). The workforce development officer's role in entrepreneurialism is the forming of partnerships and collaborations with other community interests and resources to create a variety of vocational education opportunities. These partnerships reflect a growing emphasis on vocational-technical education for growth industries, incorporating academic outcomes, a market-driven responsiveness to continually changing business needs, and an emphasis on skills training rather than on the attainment of degrees. The workforce development officer works with business and industry, develops pre-service

workforce development, in-service education, and retraining tailored to meet employers needs (Garza & Eller, 1998; Grubb, 2001; Jacobs & Dougherty 2006).

The workforce development officer's role is more than obtaining workforce training contracts and vocational skills training; the officer's role improves articulation across educational levels. This includes working with: (1) secondary schools, dual enrollment courses for advanced students, accelerated college credit classes, academic and vocational-technical skills assessment, and college and career counseling and guidance; and (2) articulated programs of study from high school through community college and four-year colleges that are focused on skill training in targeted high-growth industries (Garza & Eller, 1998; Grubb, 2001; Jacobs & Dougherty, 2006).

Factors Affecting Entrepreneurialism in Community Colleges

Factors Enhancing Entrepreneurialism

The primary factors enhancing the practice of entrepreneurialism in community colleges include: (1) human resources aimed at hiring the right leader and executive team; (2) an entrepreneurial vision and culture; (3) an organization that thinks like a profit-making business; (4) knowledge of local and state politics; (5) vital relationships between college administrators and politicians, and business and community leaders; and (6) supportive foundation and governing college boards (Roueche & Jones, 2005). Secondary factors include giving personal incentives and recognition, and increasing outside pressures on administrators to generate more money (Glassman, Moore, Rossy, Neupert, Napier, Jones & Harvey, 2003).

Human Resources and the Executive Team

As colleges hire new presidents, college foundations are seeking candidates with exposure to, and an interest in, the art of friend-raising and fundraising in order to find a leader with entrepreneurial attributes (Milliron, et al, 2003; Roueche & Jones, 2005). In an article in the *Chronicle of Higher Education,* Fain (2006) reported interviewing college presidents and asking them why they seemed to be having a rough year in 2006. Answering the question, Glenn DuBois, chancellor of the Virginia Community College System, replied:

> The expectations are increasing. The resources are strained. The need to innovate, to raise non-tax revenue, to develop partnerships, to respond to unmet community needs is greater and greater and greater. So the jobs are getting tougher. Look at just the community-college presidency: Ten years ago fund-raising was at best an optional activity, or some just chose not to even get involved in it. Today you cannot be an effective college president without those skills (p. 2).

The importance of fundraising at the presidential and top administrator level is further substantiated in the Swanson Report published by the Council for Resource Development, an affiliate of the American Association of Community Colleges and a resource for Community College development professionals. In a quantitative research study of 1600 officers of 700 member community colleges, presidents, vice presidents and directors responded that 39% of their time was spent in fundraising and 32.7% of their time was spent in grants administration (Council for Resource Development, 2007).

Adding these together, 71.7% of their time is spent looking for money to supplement their declining operational budgets. With strong leadership, knowledge of conducting fundraising activities, and a better understanding of the president's and foundation's roles in resource development, all colleges have at least some capacity to succeed at securing funds (Roueche & Jones, 2005; Ryan & Palmer, 2005; Wenrich & Reid, 2003)

Entrepreneurial businesses have a comprehensive strategic plan linking all units in the organization. Often overlooked is filling vital positions with leaders rather than spreading the duties among other overworked individuals. Akin to a business, a college needs an institutional advancement plan integrated into the strategic plan, an institutional department officer in a leadership position, and a grant writer (Bass, 2003; Herbkersam & Hibbert-Jones, 2003).

Entrepreneurial Vision and Culture

To be successful in its entrepreneurial endeavors, a community college must possess an entrepreneurial spirit supported by its administrators, faculty and staff (Glassman, et al, 2003). While it is imperative that top administration support entrepreneurialism, a vision of and culture of entrepreneurialism embedded in the organization will contribute to its success. With this type of support, an entrepreneurial institution seeks to innovate how it operates and makes a substantial shift in organizational character so as to arrive at a more promising financial position for the future (Clark, 1998). The entrepreneurial vision is shared by every college employee. This vision is linked to its mission, appreciates its past, and strategically plans for its future. It seeks to be innovative by inventing, developing, and delivering learning

solutions for the 21st century, and it creates an environment which will attract investors (Roueche & Jones, 2005).

Organizational Change

Making an organizational change to a more business-like institution will enhance the college's ability to be more entrepreneurial. For-profit businesses think strategically, scan their communities for resources and find opportunities. Lumpkin & Dess (1996) present five dimensions in the process of business entrepreneurship:

1. Autonomy: An independent action of an individual or team to present an idea or vision and carry it to completion;
2. Innovativeness: The tendency to engage in and support new ideas, products, services or technological processes;
3. Risk-taking behavior: Venturing out into a new activity where organizations commit resources and borrow money;
4. Proactiveness: Anticipating future problems, needs, and changes;
5. Competitive aggressiveness: A firm's propensity to directly and intensely challenge its competitors and to outperform them. (p.135)

Thinking and acting like a business means scanning the local community and offering programs and services that are needed and not offered anywhere else, using competitive pricing for services, taking risks, investing human and monetary resources to make a profit, and building upon small successes thus gaining a positive and trustworthy reputation (Roueche & Jones, 2005). Successful businesses have a strategic plan drawing upon the strengths of each of its divisions and addressing their weaknesses. Investing in human resources and marketing is fundamental to success. By emulating a business, an

entrepreneurial community college is able to support its revenue strategies and align them with its evolving institutional vision (Bass, 2003; Herbkersam, et al, 2003). Community colleges successful in entrepreneurial ventures do not pattern themselves after other colleges as they think outside the box. They scan the environment and cultivate alternative revenue sources based on the resources in their local service area (Bass, 2003). They formulate a common vision for the future, communicate the vision to all members of the college, and ask for and attend to employee's suggestions. All employees share the vision, are expected to work to promote it, and are rewarded for their contributions (Roueche & Jones, 2005).

Political and Business Relationships

Entrepreneurial college presidents who have knowledge, training and experience dealing with local and state politicians are able to form significant relationships which enhance entrepreneurial efforts. They successfully lobby legislators for additional funding and encourage business partners to use their influence at local and state levels. These relationships build credibility, assure mutual benefits, and serve as a foundation upon which future ventures may be built. Local business relationships enhance workforce development programs and entrepreneurial endeavors when businesses serve on curricular advisory boards. The more involved these partners become, the more likely they are to add support by providing trained instructors, donating equipment, and giving financial support (Roueche & Jones, 2005).

Community College Board Members

College boards play a pivotal role in fundraising and promoting the college's need for resources to the community. The foundation board and college governing board

should be committed to fundraising and bringing the right people together at the right time to secure the resources needed by the college (Babitz, 2003; Wenrich & Reid, 2003; Roueche & Jones, 2005). Successful foundations work with institutions to fully understand where colleges are going and understand what is needed to get there (Babitz, 2003). In order to enhance entrepreneurial endeavors, foundation boards should be made up of members who understand economic forces and possess an entrepreneurial spirit. If they do not, they should be replaced with experienced business individuals who support innovative and risk-taking endeavors. They should empower the college president to make decisions. The ideal board member is expected to take the lead in raising capital funds, understand and support making money, and provide a valuable link to business, industry, and the community (Roueche & Jones, 2005).

Other Factors Enhancing Entrepreneurialism

The importance of each college employee's contribution to supporting entrepreneurial activities should be considered and acknowledged, as it takes everyone's endorsement to create an entrepreneurial culture. Organizational change is difficult, and those adapting and trying new things should be rewarded and recognized for their efforts. Adopting an organizational philosophy that fundraising is everyone's responsibility will enhance efforts and encourage everyone to participate (Glassman, et al, 2003; Roueche & Jones, 2005). As the economic condition worsens and college budgets continue to be reduced by the state and local agencies, increasing pressures to become entrepreneurial will encourage more participation from all college employees (Glassman, et al, 2003).

Summary of Factors Enhancing Entrepreneurialism

Successful entrepreneurial colleges are those with leaders, boards, faculty, and staff committed to a long-term vision of practicing innovative techniques to generate sustaining revenues. The colleges have a strategic plan for the future; develop mutually beneficial relationships with politicians, community leaders, and industries; and scan the environment for opportunities. The college's ability to customize training for workforce contracts, along with its responsiveness, quality, and low cost, enhances success in this area. Successful programs are customized to the business and delivered by an instructor with experience in the subject matter and in the business world (Crosby, 2007). Fundraising is enhanced when everyone in the college assumes responsibility. Presidents and college boards committed to entrepreneurialism play a pivotal role in enhancing the success of fundraising and building relationships. Community colleges having and continuing to display a good institutional image; providing quality education; and holding themselves accountable to the community they serve will receive bountiful donations and sustaining revenue streams (Babitz, 2003; Roueche & Jones, 2005).

Factors Inhibiting Entrepreneurialism

Many of the factors inhibiting entrepreneurialism in community colleges are essentially the failure of not executing the previously cited factors that enhance it. These factors include: (1) failing to invest the necessary resources to hire and retain the right leader and executive team; (2) lacking an entrepreneurial vision and culture; (3) managing the college in the traditional manner and not as a profit-making business; (4) lacking knowledge of local and state politics; (5) failing to develop vital relationships between college administrators and politicians, and business and community leaders; (6)

failing to give incentives and recognition for efforts; (7) ignoring outside pressure to become entrepreneurial and generate revenue streams; and (8) failing to build entrepreneurial and supportive foundation and governing college boards (Bass, 2003; Crosby, 2007; Roueche & Jones, 2005).

A significant factor inhibiting entrepreneurial ventures is the fear of making poor decisions which would waste the limited financial resources. Workforce development training opportunities may be inhibited by corporations making training cuts in their budgets, competition from business schools, and declining large state funding projects for workforce training. College setting may inhibit entrepreneurial activities, as rural or non-rural location affects population, local tax bases, number of industries, and ability to recruit college leaders and faculty. Geographical locations may inhibit entrepreneurial activities if there exists: (1) decreased availability of telecommunications, (2) lack of highway infrastructure, (3) small population base, (4) distressed economy, and (5) pre-existing cultural attitudes toward education (Grubb, et al, 1997; Katsinas & Miller, 1998).

Fear of Entrepreneurialism

With limited or scarce resources, community colleges are expected to provide comprehensive training for their communities. Having an inadequate budget to meet these needs makes it more difficult for colleges to invest in entrepreneurial activities which pose a risk. With the changing economic environment, managing the budget by making program and faculty cuts is not always feasible. College leadership may not possess entrepreneurial characteristics such as risk taking and creativity, and it may lack experience in business and economics to make informed decisions on what types of entrepreneurial activities would bring in a profit. This causes fear and inhibits the

practice. The faculty may fear that investing in new ventures would take away money needed for more traditional education (Glassman, et al, 2003).

This fear may be more evident in mid-sized and smaller rural colleges that have fewer economic resources generated from tuition and their communities. They are more fragile financially and are located further from employment centers offering more entrepreneurial opportunities (Eddy & Murray, 2007; Fluharty & Scaggs, 2007). They have less money to invest in hiring entrepreneurial leaders, and staffing new positions such as workforce development and institutional advancement (fundraising) officers and grant writers. Increasing efforts in fundraising requires additional resources from an already declining budget to advertise, organize events, and hire staff (Roueche & Jones, 2005). Rural areas are more dependent on natural resources including agriculture, forestry, mining, textiles, and manufacturing (Katsinas & Miller, 1998). These rural colleges serve a broad socioeconomic cross section of their population which is mostly poor and uneducated and requires more college resources for remedial education (Garza & Eller, 1998; Grubb, et al, 1997). Community colleges located in rural and rural mountainous areas are at a disadvantage to becoming entrepreneurial due to geographic location, smaller operating budgets, lack of optimal internet access and highway systems, heavy reliance on natural resources and tourism to support their economies, depressed local economy, and increased susceptibility to decreasing federal and state funding (Garza & Eller, 1998; Grubb, et al, 1997).

Workforce Development Environment

The current economic status, competition, and state support of training programs may inhibit the practice of entrepreneurialism. Jacobs and Dougherty (2006) describe

three factors contributing to this decrease in revenue. First, corporate demand for customized training has shriveled since corporations are being asked to cut costs. In addition, corporations feel that continuing education should be the employees' responsibility, and are now requiring more advanced degrees such as a Bachelor of Science (BS) and Master of Science (MS) rather than technical skills training. Second, state support for large-scaled worker training programs has declined, in deference for preparing students for baccalaureate rather than technical education. Third, new competitors in the form of large private education institutions have appeared with significant growth in for-profit schools aimed at working adults in the low income market.

Rural Setting

Community colleges located in rural areas are at a disadvantage, as their communities and cultures are specific to their geographic locations and pose unique strategic planning challenges and barriers inhibiting entrepreneurialism (Garza & Eller, 1998; Grubb, et al, 1997). These obstacles result in: (1) inadequate funding, (2) higher professional development costs to travel to meetings, (3) increased time for travel to meetings, (4) inadequate state labor market data based on urban areas, (5) flooding the local area with graduates of training programs who are unable to find employment and due to their culture are reluctant to relocate, and (6) increased costs due to the difficulty in finding and hiring full time professional and trained faculty (Katsinas & Miller, 1998).

With limited resources community, colleges are being asked to reach out to previously underserved populations and to provide leadership for the revitalization of community and regional economies. These community colleges deal with a real and

continuing isolation that limits attention of state policy makers who favor supporting community colleges in urban areas. These policy makers do not take into consideration the reality that delivering high quality education and workforce development programs in rural areas is more expensive than in metropolitan areas (Katsinas & Miller, 1998).

In severely distressed rural areas, the community college is often the center for local and regional collaboration and most able to nurture local partnership with businesses to solve problems (Garza & Eller, 1998). A rural setting inhibits workforce development ventures. Without an adequate number of businesses, the potential for workforce development to add significant financial resources to the college budget is severely compromised (Grubb, et al, 1997; Roessler, et al, 2006). If businesses are available and a rural college develops a new course, it will have difficulty in recouping its development costs because the market for the course is limited (Chesson & Rubin, 2002). It is more difficult for rural community colleges to operate state and federal workforce development programs which are designed for urban environments (Katsinas, et al, 2003).

Access to telecommunication services is a problem for rural and mountainous areas in Appalachia, and inhibits workforce development and thus economic development (Baldwin, 2003). The lack of these services has denied the residents the opportunity to compete equally with areas adjacent to metropolitan centers. Providers such as local telephone and cable companies do not view delivering access to rural communities as a good investment, since the cost of physically running wires will not be recouped with usage fees within a reasonable amount of time (Baldwin, 2003).

Obtaining donated money is difficult for rural community colleges. These institutions, generally ignored by large foundations, are located in financially depressed areas which are home to very few wealthy individuals. This makes it difficult for them to solicit donations and large trusts. The National Committee for Responsive Philanthropy in 2004 noted that of the $300 billion given by American foundations only $100.5 million was committed to rural development. Of this amount, the W.K. Kellogg and Ford Foundations gave 42% of monies donated (Fluharty & Scaggs, 2007). Most grant making foundations have not seriously engaged themselves in support of the needs of organizations serving the rural populations. In fact, a 2004 study of 124 Fortune 500 companies revealed that rural organizations received only 1.4% of the 10,905 grants awarded. Staff needed to search, write, and monitor grants is not available in small colleges thus inhibiting their efforts in competing for limited funds. Mostly isolated by geography and culturally conditioned to compete with one another, rural institutions have difficulty in working with neighboring community colleges to build a critical population mass that is attractive to major funding interests (Fluharty & Scaggs, 2007).

Mountainous rural community colleges face exceptional barriers inhibiting their efforts to become entrepreneurial. Due to their location deep in the mountains, many of these community colleges are located in small towns, serve multiple counties, and have less than 2,500 FTE students. They have smaller operating budgets, lack optimal internet access, rely heavily on natural resources and tourism to support their economies, and are located a far distance from urban areas (Appalachian Regional Commission, 2008; Grubb, et al, 1997; Katsinas & Miller, 1998).

Mountainous community colleges are located in steep terrain where small towns have grown up next to rivers or wherever level ground could be found. Communities are isolated from each other and populations tend to stay in their valleys rather than to travel over the mountains. The Appalachian Development Highway System (ADHS), a program authorized by Congress in 1964, was enacted to provide essential transportation access for improving the Appalachian region's economic positions. As of 2008, only 75% of the highways are completed, and only 165 counties of the 399 have been impacted by this project. The communities in the remaining 234 counties have not benefited from this project (ARC, n.d.f.).

Developing partnerships with local businesses and providing contract training provides additional revenue for community colleges. It is more difficult for rural community colleges to operate state and federal workforce development programs which are designed for urban environments (Katsinas, et al, 2003). Mountainous rural communities typically have difficulty in attracting businesses due to their geography, lack of telecommunications, sparse populations, and limited highway systems. Without these businesses, the potential for workforce development to add significant financial resources to the college budget is severely compromised (Grubb, et al, 1997; Roessler, et al, 2006). If businesses are available and a rural college develops a new course, it will have difficulty in recouping its development costs because the market for the course is limited (Chesson & Rubin, 2002). Access to telecommunication services is a problem for rural areas in Appalachia and is a barrier to economic development (Baldwin, 2003).

In mountainous terrain, the cost of running wires along with the high cost of long distance telephone service makes providers reluctant to build an infrastructure to remote

or sparsely-populated areas (Balsam West FiberNet, LLL, 2007). If telephone or cable internet services are available, the quality is often poor, with service that does not support the use of a modem. Some areas are so remote that there are no telephone or cable lines into the areas. Mobile cell phone access is limited to the cities and small towns. Many residents in the extreme highlands live in small, narrow valleys where telephone lines may be non-existent and satellite reception is limited (Balsam West, 2007).

Summary of the Factors Inhibiting Entrepreneurialism

Many of the factors inhibiting entrepreneurialism in community colleges are essentially the failure of not executing the previously cited factors that enhance it. An important factor not previously mentioned is fear. College leadership may fear risk taking and may lack experience in business and economics to make informed decisions. College setting may inhibit entrepreneurial activities, as rural or non-rural location affects population, local tax bases, number of industries, and ability to recruit college leaders and faculty. Geographical locations may inhibit entrepreneurial activities especially in mountainous and rural areas if there exists: (1) decreased availability of telecommunications, (2) lack of highway infrastructure, (3) small population base, (4) distressed economy, and (5) pre-existing cultural attitudes toward education (Grubb, et al, 1997; Katsinas & Miller, 1998).

Conclusion of the Literature Review

Entrepreneurialism has been defined in business and collegiate settings as creating innovative profit-seeking organizations. Previous research in business is abundant since it has been studied for many years. Research in collegiate entrepreneurialism is young, few in number, and severely lacking in community colleges focus. Entrepreneurial

organization at the college level includes administration by the President, his executive staff, and the college boards. With state and local governments reducing the amount of funds available, community colleges are seeking new ways to provide alternative funding through entrepreneurial ventures. Types of ventures include workforce training, fundraising, and continuing community education. The president's role is to create a vision and instill a culture of entrepreneurialism in every employee. The president transforms the college into a business-like organization and seeks ventures to generate profits. The workforce development officer's role is to build relationships with business and industry and to oversee workforce contract training programs and community continuing education.

The factors that enhance and inhibit entrepreneurialism are complex. They include college factors such as budget, size, human resources, and setting. Environmental factors such as location (rural and non-rural); geographical setting, access to telecommunications and highways affect entrepreneurial ventures. In order to gain valuable information and reduce risks, a survey of Appalachian Regional community college presidents' and workforce development officers' perceptions of the factors affecting entrepreneurialism will be sent electronically. The data was collected and analyzed to see if any significant factors exist which will either enhance or inhibit entrepreneurial activities.

CHAPTER 3: METHODOLOGY

Introduction

In order to explore the factors enhancing and inhibiting the practice of entrepreneurialism as it is currently being used in community colleges in the federally designated Appalachian Region, this study employed a quantitative non-experimental design utilizing a survey instrument to collect data. The survey instrument, a questionnaire, was developed from information discovered in the literature review. It was first sent to a panel of five experts for *content validity*, then pilot tested in five community colleges outside of the region for *reliability* and lastly sent by email to 72 community colleges in the federally designated Appalachian Region. Purposeful sampling was used for this study. The participants chosen at each college to receive the surveys were the presidents and workforce development officers. Data was collected and entered into an SPSS program for statistical analysis using descriptive and inferential statistics. The responses were kept anonymous so as to protect participants' anonymity.

Research Questions

The research questions for this study were derived from the literature review. The literature review examined entrepreneurial activities used by universities, four-year colleges, and community colleges to generate sustaining revenues to supplement their operational budgets. The review included rural and non-rural community colleges, roles of presidents and workforce development officers, and the Appalachian Region.

In an effort to understand the factors enhancing and inhibiting entrepreneurialism, the study was guided by the following research questions.

1. What are the presidents' perceptions of the factors affecting entrepreneurialism in community colleges in the Appalachian Region?
2. What are the workforce development officer's perceptions of the factors affecting entrepreneurialism in community colleges in the Appalachian Region?
3. Is there a statistically significant difference in the perceptions of presidents of rural community colleges as compared to the perceptions of presidents of non-rural community colleges regarding the factors affecting entrepreneurialism in community colleges in the Appalachian Region?
4. Is there a statistically significant difference in the perceptions of workforce development officers of rural community colleges as compared to the perceptions of workforce development officers of non-rural community colleges regarding the factors affecting entrepreneurialism in community colleges in the Appalachian Region?
5. Is there a statistically significant difference in the perceptions of presidents of rural community colleges as compared to the perceptions of workforce development officers of rural community colleges regarding the factors affecting entrepreneurialism in community colleges in the Appalachian Region?
6. Is there a statistically significant difference in the perceptions of presidents of non-rural community colleges as compared to the perceptions of workforce development officers of non-rural community colleges regarding the factors

affecting entrepreneurialism in community colleges in the Appalachian Region?

Population

Purposive sampling was used to select the population to be studied. It is the appropriate type to use when a sample is gathered deliberately with a purpose in mind (Vogt, 2007). The population chosen included all 71 community colleges in the federally designated Appalachian Region. The literature review search substantiated the choice of the community college president and workforce development officer as the appropriate persons to answer this survey as their roles demonstrate how they are directly involved in entrepreneurial activities which bring in additional revenue to support the mission of the college. Since the survey is designed to inquire about factors affecting entrepreneurialism in community colleges, the president and workforce development officers are the ideal persons to participate in this study.

The role of the president is to: (1) personally spent a majority of time in fundraising and building a strong foundation board committed to fundraising (Cohen & Brawer, 2003); (2) hire good people and trust them to do their work; (3) secure funds through liaisons, political lobbying, and corporate and individual contacts (Cohen & Brawer, 2003); (4) serve as a facilitator and a motivator for the college to embrace an entrepreneurial culture (Anderson, et al, 2002; Roueche & Jones, 2005). The role of the workforce development officer is to: (1) form partnerships and collaborations with other community interests and resources to create a variety of vocational-technical opportunities; (2) assure a market driven responsiveness to continually changing business and industry needs; and (3) develops pre-service workforce development, in-service

education, and retraining tailored to meet employers needs (Garza & Eller, 1998; Grubb, 2001; Jacobs & Dougherty, 2006). The workforce development officer is responsible for contract training and continuing education activities which are entrepreneurial in nature as they are designed to bring in additional revenue for the college's operational budget (Jacobs & Dougherty 2006; Roueche & Jones, 2005). In addition contract training brings in non-revenue benefits such as new facilities, new equipment, training aids and training for faculty (Cohen & Brawer, 2003).

Setting

For this research study the setting for the community colleges in the Appalachian Region was categorized into two areas, non-rural and rural. The Appalachian Region's rural community colleges serve a broad socioeconomic cross section of their population which is mostly poor and uneducated. They also serve communities in diverse geographic locations posing unique challenges to becoming entrepreneurial (Garcia & Eller, 1998; Grubb, et al, 1997). The region encompasses 200,000 square miles which follow the contour of the Appalachian Mountains and includes all of West Virginia and parts of twelve other states. This area continues to be economically stressed as it is home to 23 million people with 40% of them living in rural conditions as compared to the national norm of 20% (ARC, 2007). The Appalachian Region (Appendix A) has few urban centers as most of the area is mountainous and rural; thus, the community colleges in Appalachia serve more rural communities than their national counterparts.

Research Design

After a careful and extensive review of established methods of research, quantitative methodology was chosen for this study. The quantitative method according

to Creswell (2003) has two strategies of inquiry, experimental and survey. Since this is a non-experimental study, a survey (Appendix C) was the most appropriate design for gathering data needed from a population (Creswell, 2003). A quantitative survey design provides a numeric description of the data collected from a population, and the technique used to gather the data is a questionnaire (Creswell, 2003). Orcher (2005) agrees with Creswell and suggests using a questionnaire comprised of both demographic and Likert scale questions which are ideal for collecting interval data. Following their suggestions a questionnaire with both demographics and Likert scale questions was used for this study. With emailed invitations to a web-based internet survey questionnaire, this study investigated the perceptions of presidents and workforce development officers in community colleges in the Appalachian Region as to which factors enhance and inhibit entrepreneurialism.

Survey Instrument Development

The survey instrument was developed after an extensive review of the literature was used to discover the factors enhancing and inhibiting entrepreneurial activities in community colleges. The questions developed for the survey instrument directly address these factors. The president and workforce development officer were identified as being the key individuals directly involved in entrepreneurial activities at the community colleges and were chosen to be the participants of the study. According to a community college 2006 survey conducted by the American Association of Community Colleges, 55% of presidents had an academic background (Weisman, et al, 2007). The workforce development officers' role is to have an understanding of business concepts such as entrepreneurialism, and to develop relationships with business and industry for contract

training (Garza & Eller, 1998). This may make a difference and may affect how presidents and workforce development officers perceive the factors affecting entrepreneurialism and how they answer the Likert style questions.

According to the literature review, colleges located in rural areas have more difficulty in obtaining alterative revenue through entrepreneurial activities than non-rural community colleges located in resource abundant areas (Fluharty & Scaggs, 2007, Katsinas, et al, 2003, Roessler, et al, 2007). The size of the rural community college also affects its ability to generate alterative revenue (Katsinas, et al, 2003). Since the literature review identified these differences, the first section of the questionnaire contained demographic questions of the setting of the college, rural or non-rural, and the size in full time equivalent students (FTE). The second section of the survey included twenty Likert Scale questions concerning factors either enhancing or inhibiting entrepreneurialism. The last section provided a list of ten types of entrepreneurial activities identified in a research study conducted by Beard (2008). The respondents were asked to check any they had used to generate revenue.

Survey Instrument

The instrument chosen for this study was a questionnaire. Following Orcher's (2005) recommendations for developing an original instrument, a series of steps were taken. These included: (1) planning an attitude scale, (2) writing the questions, (3) review of the instrument by the dissertation committee, (4) modification of the instrument, (5) review by a panel of experts, and (6) a pilot study. The attitude scale chosen was a Likert Scale. It is appropriate for this study as it has shown to be the best method for measurement of attitudes and perceptions. Its basic concept is a simple straight forward

approach to making statements to obtain the attitudes of the participant and provides them choices that vary from strongly agree to strong disagree (Orcher, 2005). The Likert Scale used was based on four choices: strongly agree, agree, disagree, and strongly disagree. Each response was given a numerical value from 1 to 4 for statistical analysis of this interval data.

The questions were written using the twenty factors identified by the literature review as either enhancing or inhibiting entrepreneurialism in community colleges. For example if a factor inhibiting entrepreneurialism was found to be a lack of a grant writer, the question inquired as to the participant's perceptions if one was needed. The questions were reviewed by the dissertation committee and modified. The last section of the survey listed 10 entrepreneurial activities. The participants will be asked to check any they have used to generate revenue. The survey was sent to a panel of five experts for review and suggestions. It was then sent to five community college presidents and workforce development officers for a pilot study.

Panel of Experts

The use of a panel of experts to determine content validity of a survey instrument is a widely accepted procedure (Lodico, Spaulding & Voegtle, 2006). Judgment made by a panel of experts is often the most feasible manner to assess *content validity* (Vogt, 2007). A draft survey based on a review of the literature was sent by email (Appendix D) to a panel of five experts with experience in community college entrepreneurialism who reviewed the instrument to see if it was appropriately designed and had the content needed to collect the data for this study. The following is a list of panel of experts who reviewed the instrument.

1. Dr. Ronald Eller, Associate Professor of History, and Research Specialist on the Appalachian Region at University of Kentucky in Kentucky.
2. Dr. Kevin Pennington, Associate Professor, Department of Educational Leadership and Development at Western Carolina University in North Carolina.
3. Dr. James Lampley, Research Specialist and Assistant Professor, Educational Leadership and Policy Analysis Department at East Tennessee State University in Tennessee.
4. Dr. John Gossett, Vice President of Student Development Department and Director of Research and Planning at Mayland Community College in North Carolina.
5. Dr. Joseph Fox, Chair of Business and Director of Entrepreneurialism at Asheville-Buncombe Technical College in North Carolina.

The experts were asked to rate each question in the following manner. A score of 3 indicated the question should be included. A score of 2 indicated the item should probably be included. A score of 1 indicated the item should be removed. If three members of the panel scored an item with a 1, it was removed. If two members scored an item with a 1, it was discussed with the dissertation committee chair and either revised or removed. In addition, the experts were asked to suggest items to be added to the instrument (Lodico, et al, 2006). If a panel member did so, the item was discussed with the dissertation committee chair; and if deemed appropriate, it was added.

Pilot Test

A pilot test study of the survey instrument was performed to check the adequacy of the research procedures and to establish the *reliability of the instrument* (Orcher, 2005). The pilot test of the revised survey instrument was performed by sending it to five community colleges outside the designated research area in the states of Virginia and North Carolina. The participants of the pilot survey were asked for their opinions on the content, style, and length of time to take the survey. Using the Test-Retest method, a second survey was sent two weeks later to determine if respondents answered the questions in the same manner thus establishing a *reliability coefficient* for each item on the survey instrument. Using Chronbach's *alpha* the result was .909 which shows a very high degree of reliability and establishes a coefficient of stability for the survey instrument. *Internal consistency reliability* was calculated using the *split-half reliability coefficient*. This method randomly split the instrument into two halves, one with even numbered items and one with odd numbered items. The respondent's scores were then calculated on each half test (Orcher, 2005). The *Proportion of Agreement* should have a value equal to and greater than 0.7 to be considered acceptable for this study (Orcher, 2005). The *Proportion of Agreement* using Spearman-Brown resulted in a score of .943 and indicates a strong relationship between the first survey and the second survey and therefore establishes the *reliability* of the instrument.

The pilot survey included additional questions for the participants to answer. The purpose of these additional questions was to give the participants the opportunity to assess the instrument's design. To assess the instructions given for the survey, they were asked if any questions were unclear or confusing. According to Dillman (2000)

respondents are more likely to quit before taking the survey if the instructions are unclear or confusing. Complex instructions and questions may also make a person feel inadequate and anxious and may result in surveys being unfinished (Dillman, 2000). Consequently, if respondents each understand the question differently, it may affect their answers (Creswell, 2003). Any questions identified as unclear or confusing were reviewed for format and content and then modified. Since the survey should be designed so it causes no harm to the participants, the pilot study group was asked if answering any of the questions resulted in feelings of hostility or embarrassment. A response to a question that elicits emotions may also affect its reliability (Orcher, 2005). No questions were identified as causing feelings of hostility or embarrassment. In addition, it was important to assess the length of time to take the survey as respondents may fail to complete it if takes too much time (Dillman, 2000). The average time to complete survey was 5 minutes.

Data Collection

Internet surveying is a relatively new method of collecting data from a large number of participants (Dillman, 2007). The data collection method used an invitational email addressed individually to the presidents and workforce development officers of the community colleges in the Appalachian Region. A list of community colleges was obtained from the Community Colleges of Appalachian organization. In order to send out emails with a professional survey company, a comprehensive email list was made by verifying from each college's web page, the current president and workforce development officer, and their email addresses.

Data was collected using a survey instrument to be administered as an on-line questionnaire. Dillman (2007) suggests using a vendor with a software package able to transfer all data to an Excel document and then uploaded into SPSS for statistical data analysis. The survey instrument was designed to collect interval data to answer each research question.

This study followed Dillman's (2007) suggestions on how to design and improve survey completion for internet surveys. The first step was to develop the content of the invitation email (Appendix E). It included the purpose of the study, importance to the study, value of participant's reply, time expected to complete the survey, contact information for questions about the study, and the web address for the questionnaire hyperlinked on the open screen. The second step in administering the survey was to send an invitational email introducing the purpose of the research with a link to the survey. The participants name was placed in the email's address line and not in the copy line so it was to be perceived as personally sent to the participant and not part of a mass mailing.

Confidentiality and Anonymity Procedures

As a means of improving confidentially and bias in collecting data, the final version of the survey was sent by email and collected by a college statistician. There was no risk to the participants as their identity and all responses were kept confidential and reported in the aggregate. Prior to data collection, an application was made to the Human Subjects Committee at Old Dominion University which found it exempt from an Institutional Review Board review (Appendix F).

Return Rate & Follow-up Procedures

A follow-up email invitation with web survey was sent one week after the first in an effort to improve the return rate. Second (Appendix G) and third (Appendix H) follow-up surveys were sent one and then two weeks later, each on a different day and time to improve the return rate. There were 142 invitations to 71 community colleges within the federally designated Appalachia Region. Of the 71 community colleges, 55 colleges had a least one individual participate for a 77% response rate. A distribution map of participating colleges is provided as Appendix I. An invitation was sent to two individuals at each college, the president and the workforce development officer. Of the 142 emails sent 71 were attempted. Of these 4 were incomplete and not usable as the respondents only answered the demographic questions and not the survey questions. The total number of completed surveys was 67 for a 47% return rate.

Table 1

Completed Surveys

Surveys Returned	Rural	Non-Rural	Total	Percent
Presidents	24	10	34	48
Workforce Development	19	14	33	47
Total Responses	43	24	67	47

Data Analysis

The research questions were designed to determine if relationships exist between independent and dependent variables, and the degree of these relationships. The

independent variables for this study were college presidents and workforce development officers and setting (rural and non-rural). The dependent variables were the factors which enhance and inhibit the practice of entrepreneurialism. The data was analyzed using descriptive statistics for Research Questions 1 & 2 and inferential statistics for Research Questions 3 through 6.

Descriptive statistics were appropriate for this study as they describe the basic features of the data in a research study. They provide a frequency distribution summary of the ranges and values for a variable and include the measures of central tendency and variability which are comprised of the mean, median, mode, and the standard deviation (Vogt, 2007). The results from the demographic questions, as well as, Research Questions 1 and 2 produced interval data. The demographic questions asked the position of the responder, the size in FTE of the college, and whether or not the college was located in a rural or non-rural setting.

Inferential statistics were also appropriate for this study as they use data to infer (draw a conclusion) about what the population may think, or to generalize from the sample to a larger population (Vogt, 2007). In this study, the *independent sample t-test* was used to compare the mean response between two groups and to make inferences from the results (Green & Salkind, 2005). The *t*-test is the most commonly used method to evaluate the differences in means between two independent groups (e.g. presidents and workforce development officers or rural or non-rural) when examining categorical or continuous variables (Creswell, 2003). The *t*-test assumes the means of two groups are statistically different from each other. The data from the Likert Scale instrument utilized in this study was assumed to be interval data, and it was assumed that these data would be

normally distributed. Therefore, the t-test was the appropriate statistical test to compare two groups (Creswell, 2003; Green & Salkind, 2005; and Vogt, 2007).

The data was analyzed using *independent sample t-tests* to determine if there was a statistically significant difference between the mean scores of the two groups being compared in each of the research questions 3 through 6. For these significance tests and this research study, the level of significance (or coefficient *alpha* designated as "*p*") was set as a *p value of* < 0.05. The "*p*" value is a statement of probability with its value ranging from 0 to 1. This means the chance of making a Type I error is less than 5%. A Type I error is one in which there is no relationship or difference in the populations being studied (Vogt, 2007). The relationship or difference in the sample, as well as, the size of the sample determines the significance level (Muijs, 2004).

Non-Response Bias

Response bias for non-responders was considered. Bias means if the non-responders had responded, it would have substantially affected the results of the survey (Creswell, 2003). In order to assess non-response bias, early responders were compared to late responders. A study by Rogelberg & Luong (1998) has found late responders have been shown to accurately estimate non-responders. The sample chosen for this analysis was 24 out of 67 completed surveys. It compared twelve early responders (3 rural and 3 non-rural presidents; and 3 rural and 3 non-rural workforce development officers) to twelve late responders (3 rural and 3 non-rural presidents, and 3 rural and 3 non-rural workforce development officers). Independent Sample *t*-tests were used for the analysis. Out of the 20 questions on the survey only 1 question was found to be significantly different from the early to late responders. The importance of the internet infrastructure

had a $p = .042$. With only 1 item out of 20 items or 5% of the responses being different, there is a 95% confidence level of no response bias for this study.

Researcher Bias

Researcher bias has been addressed in this study. The researcher has taught in rural community colleges in the Appalachian Region, has personally observed a decline in state and local funding, and has observed the difficulty in generating alternative revenue using entrepreneurial activities. In order to provide unbiased sampling, all the colleges in the Appalachian Region both rural and non-rural were included in the study. A panel of experts was used to provide *content validity* for the survey. This panel along with the dissertation committee reviewed each question for bias. The data was collected by a college statistician and individual results were kept confidential.

Limitations of the Study

This study was limited to 71 community colleges in the Appalachian Region and the results cannot be generalized to any community colleges outside of the region. The participant response rate was 47% with 77% of the colleges participating in the study. A higher response rate would have provided statistically more significant results. If the survey had been sent out by the Appalachian Regional Commission to the colleges, it may have received more responses. Many college administrators receive dissertation surveys and do not have time to complete them. The time frame for sending and completing the on-line web questionnaire was three weeks. An additional week may have improved the results.

Conclusion

In conclusion, this research study was conducted using a quantitative non-experimental design using descriptive and inferential statistics for analysis. The survey instrument was a web-based survey using an email invitation to participate in the study. The instrument was based on information gathered in the Literature Review and the Research Questions. The instrument was sent to a panel of five community college experts for *content validation*. The revised instrument was pilot tested and retested on five community colleges outside of the research study as a means of establishing a *coefficient of reliability*. An analysis of non-response bias was conducted. To assure participant confidentiality and anonymity, the research and survey instrument was presented to Human Subjects Committee at Old Dominion University which found it exempt from an Institutional Review Board review (Appendix F). The findings of this research study will be presented in Chapter 4.

Chapter 4: Findings

Introduction

The purpose of this study was to explore the factors enhancing and inhibiting the practice of entrepreneurialism as it is currently being used in Appalachian community colleges to generate alternative revenue to supplement declining state and local funding. The problem is a combination of a weak economy with a corresponding decline in tax revenue has created deficits in state and local budgets which adversely affect the financial stability of community colleges. This leaves the community college struggling to continue to provide education in support of its mission.

This study explores entrepreneurialism in community colleges and the factors which affect the practice of entrepreneurialism in community colleges in the Appalachian Region. By studying and analyzing the factors, this study contributes vital decision-making information which may assist in reducing risk and improving revenue generation. The chapter presents the findings of the study. For this study the participants have self selected the setting for their college, either rural or non-rural. In an effort to understand these factors and relationships, information was gathered and analyzed using the following research questions.

1. What are the presidents' perceptions of the factors affecting entrepreneurialism in community colleges in the Appalachian Region?
2. What are the workforce development officer's perceptions of the factors affecting entrepreneurialism in community colleges in the Appalachian Region?

3. Is there a statistically significant difference in the perceptions of presidents of rural community colleges as compared to the perceptions of presidents of non-rural community colleges regarding the factors affecting entrepreneurialism in community colleges in the Appalachian Region?
4. Is there a statistically significant difference in the perceptions of workforce development officers of rural community colleges as compared to the perceptions of workforce development officers of non-rural community colleges regarding the factors affecting entrepreneurialism in community colleges in the Appalachian Region?
5. Is there a statistically significant difference in the perceptions of presidents of rural community colleges as compared to the perceptions of workforce development officers of rural community colleges regarding the factors affecting entrepreneurialism in community colleges in the Appalachian Region?
6. Is there a statistically significant difference in the perceptions of presidents of non-rural community colleges as compared to the perceptions of workforce development officers of non-rural community colleges regarding the factors affecting entrepreneurialism in community colleges in the Appalachian Region?

Demographics of Respondents

The population chosen for this study included 71 community colleges in the federally designated Appalachian Region. The literature review substantiated the choice of the community college president and workforce development officer as appropriate

college administrators to participate in this study since they are directly involved in entrepreneurial activities which bring in additional revenue to support the mission of the college. Through the literature review search the president's role was identified as being directly involved in entrepreneurial activities (Anderson, Murray, & Olivarez, 2002; Cohen & Brawer, 2003; Roueche & Jones, 2005; Weisman & Vaughn, 2007). In addition, the workforce development officers' role has been identified as being directly involved in entrepreneurial activities (Cohen & Brawer, 2003; Garza & Eller, 1998; Grubb, 2001; Jacobs & Dougherty 2006).

Email invitations were sent to 71 community colleges. For each community college two surveys were sent, one to the president and one to the workforce development officer. There were 67 participants who completed the surveys online. The response rate from the presidents was 34 of 71 (48% response rate); 24 rural and 10 non-rural. The response rate for the workforce development officers was 33 of 71 (47% response rate); 19 rural and 14 non-rural. The overall response rate was 67 of 142 or 47.2%. A summary of responses from the web based survey is presented in Appendix J.

An analysis of the responses by community colleges show 55 of 71 had either the President or Workforce Development officer completing a survey. In addition, 12 of 13 states in the federally designated Appalachian Region participated; no college from New York responded. A map of the distribution of respondents from the Appalachian Region is included as Appendix I. Response number by state is presented in Table 2.

The respondents were asked to provide the size in full time equivalent (FTE) students for their community colleges. The choices ranged from less than 500 to over

10,000. The highest percentages were in the 500-1,999 and 2,000 – 4,999 size. The number and frequencies are listed in Table 3.

Table 2

Responding Community Colleges by State

State	*Frequency*	Percentage
Alabama	8	14.5
Georgia	3	5.4
Kentucky	3	5.4
Maryland	3	5.4
Mississippi	1	1.8
New York	0	0
North Carolina	10	18.0
Ohio	3	5.4
South Carolina	3	5.4
Pennsylvania	3	5.4
Tennessee	6	10.9
Virginia	4	7.2
West Virginia	8	16.0
Total	55	100

Table 3

Community College Size in (FTE) Students

Variable	Number	Frequency %
< 500 students	2	3
500 – 1,999	23	34
2,000 – 4,999	25	37
5,000 – 9,999	12	18
≥10,000	5	8
Total	67	100

Research Question One

The first research question seeks to understand the presidents' perceptions of the factors influencing entrepreneurialism in their community college. The survey was divided into two sections. This first section asked the presidents ($N = 34$) to rate statements concerning finance, entrepreneurial activities, and generating alternative revenue at their community college. The presidents strongly agree their community colleges are experiencing a reduction in State appropriations ($M = 3.59$, $SD = .783$). They agree entrepreneurial activities are included in their college's strategic plan (M=3.38, $SD = .604$). An analysis of the frequency distribution shows those agreeing to a reduction in appropriations is 84% and including entrepreneurial activities in the strategic plan is 94%. The presidents report a lesser agreement with the physical location impeding their ability to engage in workforce training ($M = 2.24$, $SD = .819$) and fundraising ($M = 2.09$, $SD = .830$) as compared to other items. The standard deviation for both is high. The descriptive statistics for all their responses for Research Question 1 are presented in Appendix K. The first part is summarized in Table 4.

The second section of the survey asked the presidents ($N = 34$) to rate the importance of each of the factors affecting entrepreneurial activities at community colleges in the Appalachian Region. The presidents strongly agree the active encouragement of the president is an important factor affecting entrepreneurial activities at their community colleges ($M = 3.79$, $SD = .410$). They also agree the internet infrastructure is an important factor affecting entrepreneurial activities at the college ($M = 3.71$, $SD = .462$). In addition, an analysis of the frequency distribution shows those agreeing to the importance of active presidential encouragement of entrepreneurial

Table 4

RQ 1: Presidents: Items1-8

Variable	*N*	*M*	*SD*	Variance
College has experienced a reduction in State appropriations	34	3.59	.783	.631
Importance of generating alternative revenue with entrepreneurial activities	34	3.29	.629	.396
Entrepreneurial activities are supported by the college's strategic plan	34	3.38	.604	.365
Number of industries in the service area limits the ability to offer contract training	34	2.53	.825	.681
Culture reflects an entrepreneurial spirit	34	2.97	.577	.332
Relationship with political leaders have had positive effect on alternative revenues.	34	2.91	.668	.447
Physical location of the college impedes our ability to engage in workforce training.	34	2.24	.819	.670
Physical location of college impedes our ability to engage in fundraising.	34	2.09	.830	.689

Note: The Likert Scale for the rating is: 1= Not Important; 2 = Somewhat Important; 3 = Important; and 4 = Very Important.

Table 5

RQ 1: Presidents: Items 9 – 20

Variable	N	*M*	*SD*	Variance
Faculty efforts to obtain grants	34	3.06	.814	.663
An entrepreneurial trained executive team	34	3.35	.691	.478
Customized workforce training contracts	34	3.53	.563	.317
Participation of members of the college's Board of Trustees	34	2.56	.991	.981
A full time dedicated fundraiser	34	3.26	.790	.625
A full time dedicated grant writer	34	3.32	.806	.650
Telecommunications infrastructure	34	3.47	.615	.378
Internet infrastructure	34	3.71	.462	.214
Road and highway infrastructure	34	3.24	.741	.549
Competition from for-profit educational organizations	34	2.56	.894	.799
Active encouragement of the community college president	34	3.79	.410	.168
Professional development in entrepreneurial activities for the college's senior team	34	3.38	.739	.546

Note: The Likert Scale for the rating is: 1= Not Important; 2 = Somewhat Important; 3 = Important; and 4 = Very Important.

activities and the importance of the internet infrastructure both are 100%. The presidents report a lesser agreement with the importance of the participation of the college's Board of Trustees affecting entrepreneurial activities ($M = 2.56$, $SD = .919$), and the importance of for-profit education organizations affecting entrepreneurial activities ($M = 2.56$, $SD = .894$). The standard deviation for both is high. An analysis of the frequency distribution shows those reporting a lesser agreement with the importance of the participation of the Board of Trustees are 47 % and competition from for-profit education organizations are 53%. The descriptive statistics for part two are summarized in table 5. Complete statistics are presented in Appendix K.

Research Question Two

The second research question seeks to understand the workforce development officers' perceptions of the factors influencing entrepreneurialism in their community college. This first section of the survey asked the workforce development officers to rate the statements concerning finance, entrepreneurial activities, and generating alternative revenue at their community college. The workforce development officers ($N = 33$) strongly agree their community colleges are experiencing a reduction in State appropriations ($M = 3.61$, $SD = .609$) and the importance of generating alternative revenue with entrepreneurial activities (M=3.52, $SD = .667$). An analysis of the frequency distribution shows those agreeing to a reduction in appropriations are 94% and the importance of generating alternative revenue are 97%.

The workforce development officers responses indicate significantly less agreement with the physical location impeding their ability to engage in workforce training ($M = 2.27$, $SD = .801$) and fundraising ($M = 2.18$, $SD = .727$). The standard

deviation for both is high. An analysis of the frequency distribution shows those strongly agreeing or agreeing the physical location impedes workforce training are 30% and fundraising are 28%. The descriptive statistics for their other responses are displayed in Appendix L. The first part of the survey summarized in Table 6.

The second section of the survey asked the workforce development officers ($N = 33$) to rate the importance of each of the factors affecting entrepreneurial activities at community colleges in the Appalachian Region. The workforce development officers strongly agree the active encouragement of the president is an important factor affecting entrepreneurial activities at their community colleges ($M = 3.79$, $SD = .410$). They also agree the internet infrastructure is an important factor affecting entrepreneurial activities at the college ($M = 3.73$, $SD = .452$). An analysis of the frequency distribution shows those agreeing to the importance of active presidential encouragement and the importance of the internet infrastructure are both 100%. The workforce development officers report a lesser agreement with the importance of the participation of the college's Board of Trustees affecting entrepreneurial activities ($M = 2.82$, $SD = .917$). They also report a lesser agreement of competition from for-profit education organizations playing an important factor affecting entrepreneurial activities ($M = 2.63$, $SD = .793$). The standard deviation for both is high. An analysis of the frequency distribution shows those strongly agreeing or agreeing with the importance of the participation of the Board of Trustees are 53 % and competition from for-profit education organizations are 47%. The descriptive statistics for their other responses are summarized in Table 7. Complete statistics are presented in Appendix L.

Table 6

RQ 2: Workforce: Items 1-8

Variable	N	*M*	*SD*	Variance
College has experienced a reduction in State appropriations	33	3.61	.609	.371
Importance of generating alternative revenue with entrepreneurial activities	33	3.52	.667	.445
Entrepreneurial activities are supported by the college's strategic plan	33	3.33	.595	.354
Number of industries in the service area limits the ability to offer contract training	33	2.45	.754	.568
Culture reflects an entrepreneurial spirit	33	2.76	.792	.627
Relationship with political leaders have a positive effect on alternative revenues.	33	3.15	.712	.508
Physical location of the college impedes our ability to engage in workforce training.	33	2.27	.801	.642
Physical location of college impedes our ability to engage in fundraising.	33	2.18	.727	.528

Note: The Likert Scale for the rating is: 1= Not Important; 2 = Somewhat Important; 3 = Important; and 4 = Very Important.

Table 7

RQ 2: Workforce: Items 9 - 20

Variable	*N*	*M*	*SD*	Variance
Faculty efforts to obtain grants	33	3.27	.944	.892
An entrepreneurial trained executive team	33	3.24	.708	.502
Customized workforce training contracts	33	3.33	.736	.542
Participation of members of the college's Board of Trustees	33	2.82	.917	.841
A full time dedicated fundraiser	33	3.45	.754	.568
A full time dedicated grant writer	33	3.67	.736	.542
Telecommunications infrastructure	33	3.67	.595	.354
Internet infrastructure	33	3.73	.452	.205
Road and highway infrastructure	33	3.33	.890	.792
Competition from for-profit educational organizations	33	2.63	.793	.629
Active encouragement of the community college president	33	3.76	.435	.189
Professional development in entrepreneurial activities for college's senior team	33	3.15	.712	.508

Note: The Likert Scale for the rating is: 1= Not Important; 2 = Somewhat Important; 3 = Important; and 4 = Very Important.

Research Question Three

The third research examines whether there are statistically significant differences in the perceptions of rural and non-rural community college presidents regarding the factors that affect practice of entrepreneurialism. The number of rural presidents responding was 24 (71%), and the number of non-rural presidents responding was 10(29%). An independent-samples *t* test was used to determine if there were differences between rural and non-rural presidents' perceptions. The results found three statistically significant items. The alpha level was set at .05. Rural community college presidents ($M = 2.75$, $SD = .794$) are more likely than non-rural community college presidents ($M = 2.00$, $SD = .667$) to report the number of industries in the service area limiting the ability of their college to offer contract training, $t(32) = 2.62$, $p = .013$. Secondly, rural community college presidents ($M = 2.50$, $SD = .722$) were more likely to report the physical location of the college impeding their ability to engage in workforce training more frequently than non-rural community college presidents ($M = 1.06$, $SD = 0.633$), $t(32) = 3.34$, $p = .002$. Lastly, the rural community college presidents ($M = 2.29$, $SD = .806$) are more likely than non-rural community college presidents to report the physical location of the college limiting their ability to engage in fundraising, ($M = 1.60$, $SD = .699$), $t(32) = 2.36$, $p = .024$. The results comparing the groups on all of the items are presented in Appendix M. The first section is summarized in Table 8.

Table 8

RQ 3: Presidents Rural and Non-Rural: Items 1-8

Variable	Rural		Non-Rural		
	M	*SD*	*M*	*SD*	*p*
College has experienced a reduction in State appropriations	3.54	.884	3.70	.483	.599
Importance of generating alternative revenue with entrepreneurial activities	3.33	.702	3.20	.667	.581
Entrepreneurial activities are supported by the college's strategic plan	3.42	.584	3.30	.675	.615
Number of industries in the service area limits contract training	2.75	.794	2.00	.667	.013*
Culture reflects an entrepreneurial spirit	3.08	.504	2.70	.615	.077
Relationship with political leaders has a positive effect on alternative revenues.	2.96	.550	2.80	.919	.537
Physical location impedes ability to engage in workforce training.	2.50	.722	1.06	.633	.002**
Physical location impedes ability to engage in fundraising.	2.29	.806	1.60	.699	.024*

Note: The Likert Scale for the rating is: 1= Not Important; 2 = Somewhat Important; 3 = Important; and 4 = Very Important.
*$p < .05$
**$p < .01$

Table 9

RQ 3: Presidents Rural and Non-rural: Items 9-20

Variable	Rural		Non-Rural		
	M	*SD*	*M*	*SD*	*p*
Faculty efforts to obtain grants	3.08	.830	3.00	.816	.790
An entrepreneurial trained executive team	3.42	.623	3.50	.789	.413
Customized workforce training contracts	3.54	.509	3.50	.707	.848
Participation of members of the college's Board of Trustees	2.50	.933	2.70	1.160	.599
A full time dedicated fundraiser	3.17	.816	3.50	.823	.269
A full time dedicated grant writer	3.33	.816	3.30	.823	.915
Telecommunications infrastructure	3.46	.681	3.50	.527	.860
Internet infrastructure	3.75	.442	3.60	.516	.397
Road and highway infrastructure	3.30	.702	3.00	.816	.238
Competition from for-profit educational organizations	2.50	.933	2.70	.823	.560
Active encouragement of the community college president	3.71	.464	4.00	.000	.058
Professional development in entrepreneurial activities for college's senior team	3.42	.584	3.30	1.059	.628

Note: The Likert Scale for the rating is: 1= Not Important; 2 = Somewhat Important; 3 = Important; and 4 = Very Important.
*$p < .05$
**$p < .01$

The second section of the survey asked the presidents ($N = 34$) to rate the importance of each of the factors affecting entrepreneurial activities at community colleges in the Appalachian Region. An independent-samples t test was used to determine if there were differences between rural and non-rural presidents' perceptions. There were no significant differences in the responses to the second set of questions. The alpha level was set at .05. Their responses are summarized in Table 9 on the previous page. Complete statistics are presented in Appendix M.

Research Question Four

The fourth research question asked whether there are statistical differences in the perceptions of rural and non-rural community college workforce development officers of the factors which enhance or inhibit the practice of entrepreneurialism. The number of rural workforce development officers responding to the survey was 19 (63%) and non-rural responding was 14 (47%). An *independent-samples t* test was used to determine if there were differences between rural and non-rural workforce development officers' perceptions. The results on the first section of the survey found one statistically significant item. The alpha level was set at .05. Rural community college workforce development officers ($M = 2.58$, $SD = .642$) are more likely than non-rural community workforce development officers ($M = 1.86$, $SD = .770$) to report the physical location of the college impedes their ability to engage in workforce training, $t\ (31) = 2.82$, $p = .008$. The results are displayed in Table 10.

Table 10

RQ 4: Workforce Rural and Non-rural: Items 1-8

Variable	Rural		Non-Rural		
	M	*SD*	*M*	*SD*	*p*
College has experienced a reduction in State appropriations	3.58	.607	3.64	.633	.771
Importance of generating alternative revenue with entrepreneurial activities	3.47	.771	3.57	.514	.684
Entrepreneurial activities are supported by the college's strategic plan	3.32	.582	3.36	.633	.847
Number of industries in the service area limits contract training	2.58	.769	2.29	.726	.276
Culture reflects an entrepreneurial spirit	2.95	.524	2.50	1.091	.110
Relationship with political leaders has a positive effect on alternative revenues.	3.26	.653	3.00	.784	.302
Physical location impedes ability to engage in workforce training.	2.58	.642	1.86	.770	.008**
Physical location impedes ability to engage in fundraising.	2.27	.596	1.93	.829	.086

Note: The Likert Scale for the rating is: 1= Not Important; 2 = Somewhat Important; 3 = Important; and 4 = Very Important.
*$p < .05$
**$p < .01$

Table 11

RQ 4: Workforce Rural and Non-rural: Items 9-20

Variable	Rural		Non-Rural		
	M	*SD*	*M*	*SD*	*p*
Faculty efforts to obtain grants	3.11	1.100	3.50	.650	.241
An entrepreneurial trained executive team	3.37	.597	3.07	.829	.240
Customized workforce training contracts	3.37	.684	3.29	.825	.755
Participation of members of the college's Board of Trustees	2.84	.765	2.79	1.122	.865
A full time dedicated fundraiser	3.37	.831	3.57	.646	.453
A full time dedicated grant writer	3.63	.831	3.71	.646	.755
Telecommunications infrastructure	3.63	.831	3.71	.611	.700
Internet infrastructure	3.74	.462	3.71	.611	.890
Road and highway infrastructure	3.47	.452	3.14	.469	.298
Competition from for-profit educational organizations	2.47	.772	2.36	1.027	.168
Active encouragement of the community college president	3.68	.478	3.86	.363	.266
Professional development in entrepreneurial activities for senior team	3.16	.688	3.14	.688	.953

Note: The Likert Scale for the rating is: 1= Not Important; 2 = Somewhat Important; 3 = Important; and 4 = Very Important.
*$p < .05$
**$p < .01$

The second section of the survey asked the workforce development officers questions concerning the importance of factors affecting entrepreneurialism. An independent-samples *t* test was used to determine if there were differences between rural and non-rural workforce development officers' perceptions of these factors. The results on this second section of the survey found no statistically significant items. The alpha level was set at .05. The results are summarized Table 11 on the previous page. Complete statistics are presented in Appendix N.

Research Question Five

The fifth research question asked whether there were statistical differences in the perceptions of rural community college presidents and rural workforce development officers of the factors which affect the practice of entrepreneurialism. The number of rural presidents responding to the survey was 24 (56%) and the number of rural workforce development officers was 19 (44%). An *independent-samples t* test was used to determine if there were differences between rural and non-rural presidents' perceptions. There were no significant differences found. The results are summarized in Tables 12 and 13. Complete statistics are presented in Appendix O.

Research Question Six

The last research question asked whether there were statistical differences in the perceptions of non-rural community college presidents and non-rural workforce development officers of the factors which affect the practice of entrepreneurialism. The number of non-rural presidents responding to the survey was 10 (42%) and the number of non-rural workforce development officers was 14 (58%). An *independent-samples t* test was used to determine if there were differences between non-rural presidents' and

workforce development officers' perceptions. There were no significant differences found. The results are summarized Tables 14 and 15. Complete statistics are presented in Appendix P.

Table 12

RQ 5: Presidents and Workforce Rural: Items 1-8

Variable	Presidents		Workforce		
	M	*SD*	*M*	*SD*	*p*
College has experienced a reduction in State appropriations	3.54	.881	3.58	.607	.876
Importance of generating alternative revenue with entrepreneurial activities	3.33	.702	3.47	.772	.537
Entrepreneurial activities are supported by the college's strategic plan	3.42	.578	3.32	.582	.576
Number of industries limits the ability to offer contract training	2.75	.794	2.58	.769	.481
Culture reflects an entrepreneurial spirit	3.08	.504	2.95	.524	.393
Relationships with political leaders has a positive effect on alternative revenues.	2.95	.560	3.26	.653	.113
Physical location impedes ability to engage in workforce training.	2.50	.722	2.58	.692	.719
Physical location impedes our ability to engage in fundraising.	2.29	.806	2.37	.597	.731

Note: The Likert Scale for the rating is: 1= Not Important; 2 = Somewhat Important; 3 = Important; and 4 = Very Important.
*$p < .05$
**$p < .01$

Table 13

RQ 5: Presidents and Workforce Rural: Items 9-20

Variable	Presidents		Workforce		
	M	*SD*	*M*	*SD*	*p*
Faculty efforts to obtain grants	3.08	.830	3.14	1.100	.941
An entrepreneurial trained executive team	3.42	.654	3.37	.597	.804
Customized workforce training contracts	3.54	.509	3.37	.684	.346
Participation of members of the college's Board of Trustees	2.50	.933	2.84	.765	.204
A full time dedicated fundraiser	3.17	.816	3.37	.831	.429
A full time dedicated grant writer	3.33	.816	3.63	.831	.245
Telecommunications infrastructure	3.48	.658	3.63	.597	.377
Internet infrastructure	3.75	.442	3.74	.452	.924
Road and highway infrastructure	3.33	.702	3.47	.772	.537
Competition from for-profit educational organizations	2.50	.933	2.47	.772	.922
Active encouragement of the college president	3.71	.464	3.68	.478	.868
Professional development in entrepreneurial activities for the senior team	3.42	.584	3.16	.688	.190

Note: The Likert Scale for the rating is: 1= Not Important; 2 = Somewhat Important; 3 = Important; and 4 = Very Important.
*$p < .05$
**$p < .01$

Table 14

RQ 6: Presidents and Workforce Non-rural: Items 1-8

Variable	Presidents		Workforce		
	M	*SD*	*M*	*SD*	*p*
College has experienced a reduction in State appropriations	3.70	.483	3.64	.633	.813
Importance of generating alternative revenue with entrepreneurial activities	3.20	.422	3.57	.514	.074
Entrepreneurial activities are supported by the college's strategic plan	3.30	.675	3.36	.633	.834
Number of industries limits the ability to offer contract training	2.00	.667	2.29	.726	.337
Culture reflects an entrepreneurial spirit	2.70	.675	2.50	1.019	.595
Relationship with political leaders has a positive effect on alternative revenues.	2.80	.919	3.00	.784	.572
Physical location impedes ability to engage in workforce training.	1.60	.699	1.86	.770	.412
Physical location impedes our ability to engage in fundraising.	1.60	.699	1.93	.829	.319

Note: The Likert Scale for the rating is: 1= Not Important; 2 = Somewhat Important; 3 = Important; and 4 = Very Important.
*$p < .05$
**$p < .01$

Table 15

RQ 6: Presidents and Workforce Non-rural: Items 9-20.

Variable	President		Workforce		
	M	*SD*	*M*	*SD*	*p*
Faculty efforts to obtain grants	3.00	.816	3.50	.650	.109
An entrepreneurial trained executive team	3.20	.789	3.07	.829	.706
Customized workforce training contracts	3.50	.707	3.29	.825	.513
Participation of members of the college's Board of Trustees	2.70	1.160	3.79	1.122	.857
A full time dedicated fundraiser	3.50	.707	3.57	.646	.800
A full time dedicated grant writer	3.30	.823	3.17	.611	.170
Telecommunications infrastructure	3.50	.527	3.71	.611	.380
Internet infrastructure	3.60	.516	3.71	.469	.578
Road and highway infrastructure	3.00	.816	3.14	1.027	.719
Competition from for-profit educational organizations	2.70	.823	2.86	.770	.637
Active encouragement of the community college president	4.00	.000	3.86	.363	.229
Professional development in entrepreneurial activities for college's senior team.	3.30	1.059	3.86	.770	.667

Note: The Likert Scale for the rating is: 1= Not Important; 2 = Somewhat Important; 3 = Important; and 4 = Very Important.
*$p < .05$
**$p < .01$

Entrepreneurial Activities

The current study included a section asking presidents and workforce development officers which entrepreneurial activities they used to generate revenue. Rural community colleges favored grants (93%), individual donor and contract training, (73%) followed by capital campaigns (57%). Non-rural community colleges favored contract training (100%), individual donor and capital campaigns (80%), and grants (70%). Activities less favored by rural community colleges were the cafeteria (36%) and alumni fundraising (29%). Less favored by non-rural community colleges was the sale of property (20%) and alumni fundraising (10%). The results are presented as Tables 16 and 17.

Table 16

Entrepreneurial Activities: Presidents

Entrepreneurial Activity	Rural %	Non-rural %	% difference
Alumni	29	10	19
Capital campaigns	57	80	23
Bookstore	50	40	10
Cafeteria	36	40	4
Contract Training	71	100	29
Grants	93	70	23
Individual Donor	71	80	9
Patents/Royalties	0	0	0
Rental Property	43	40	3
Sale of Property	14	20	6

Table 16

Entrepreneurial Activities: Workforce

Entrepreneurial Activity	Rural %	Non-rural %	% difference
Alumni	32	57	25
Capital campaigns	53	64	11
Bookstore	32	36	4
Cafeteria	21	21	0
Contract Training	84	64	20
Grants	90	100	10
Individual Donor	53	64	11
Patents/Royalties	5	0	5
Rental Property	16	29	13
Sale of Property	0	14	14

Conclusion

This section summarizes the statistically significant findings of the study. The results of the presidents' and workforce development officers' perceptions of the factors affecting entrepreneurialism as it is practiced in community colleges of the Appalachian Region are presented in the following list.

1. The presidents ($M = 3.59$, $SD = .783$) and the workforce development officers ($M = 3.61$, $SD = .609$) strongly agree their community colleges are experiencing a reduction in State appropriations.

2. The presidents *(M = 3.29, SD = .629)* and workforce development officers (*M* =3.52, *SD* = .667) agree to the importance of generating alternative revenue with entrepreneurial activities.
3. The presidents (*M* = 3.79, *SD* = .410) and workforce development officers (*M* = 3.76, *SD* = .435) strongly agree the active encouragement of the president is an important factor affecting the practice of entrepreneurialism.
4. The presidents (*M*=3.38, *SD* = .604) and workforce development officers (*M* = 3.33, *SD* = .595) agree on the importance of including entrepreneurial activities in their college's strategic plan.
5. Rural community college presidents (*M* = 2.75, *SD* = .794) are more likely than non-rural community college presidents (*M* = 2.00, *SD* = .667) to report the number of industries in the service area limiting the ability of their college to offer contract training, $t(32) = 2.62$, $p = .013$.
6. Rural community college presidents (*M* = 2.50, *SD* = .722) are more likely to report the physical location of the college impeding their ability to engage in workforce training more frequently than non-rural community college presidents (*M* = 1.06, *SD* = 0.633), $t(32) = 3.34$, $p = .002$.
7. Rural community college workforce development officers (*M* = 2.58, *SD* = .642) are more likely than non-rural community workforce development officers (*M* = 1.86, *SD* = .770) to report the physical location of the college impedes their ability to engage in workforce training, $t(31) = 2.82$, $p = .008$.

8. Rural community college presidents ($M = 2.29$, $SD = .806$) are more likely than non-rural community college presidents to indicate the physical location of the college limits their ability in fundraising, ($M = 1.60$, $SD = .699$), $t(32) = 2.36$, $p = .024$.
9. There were no statistically significant differences in the perceptions of rural community college presidents and rural community college workforce development officers of the factors regarding the practice of entrepreneurialism.
10. There were no statistically significant differences in the perceptions of non-rural community college presidents and non-rural community college workforce development officers of the factors regarding the practice of entrepreneurialism.
11. Entrepreneurial activities used by community colleges in Appalachia: Rural community colleges favored grants (93%), individual donor and contract training (73%), followed by capital campaigns (57%). Non-rural community colleges favored contract training (100%), individual donor and capital campaigns (80%), and grants (70%).

These findings will be further discussed in Chapter 5 for their implications, recommendations for practitioners, and need for future research.

Chapter V

Summary, Conclusions, and Recommendations

This chapter provides a summary of the perceptions of presidents and workforce development officers in community colleges in the Appalachian Region regarding the factors affecting the practice of entrepreneurialism to generate alternative revenue. The combination of a weak economy with a corresponding decline in tax revenue has created deficits in state and local budgets which adversely affect the financial stability of community colleges. This leaves the community college struggling to continue to provide education in support of its mission. This chapter presents the findings, addresses the implications of the study, and gives recommendations for future research.

Summary of the Study

Overview of the Problem

The literature shows a critical problem facing community colleges is providing quality education for their communities in the light of decreasing monetary support from local and state governments. Reduction in state appropriations at a time of economic downturn is a threat to the ability of community colleges to provide higher education to thousands of students who are the educated workforce needed for the economic growth of the state (Conklin, 2002). In order to generate outside revenue, many community colleges are transforming themselves into entrepreneurial profit-seeking organizations. An entrepreneurial community college creates a culture that proactively meets challenges, remains flexible, encourages change and innovation, recognizes opportunities, takes risks, generates sustainable resources, and moves the mission of the college forward (Roueche & Jones, 2005).

Purpose of the Study

The purpose of this study was to explore the factors enhancing and inhibiting the practice of entrepreneurialism as it is currently being practiced in Appalachian community colleges. A survey was sent to college presidents and workforce development officers to gather their perceptions of these factors. The findings of this study may be instrumental in assisting community college leaders in decision-making and possibly improving the outcomes of risk-taking entrepreneurial activities.

Research Questions

In an effort to understand these factors and relationships, information was gathered and analyzed using the following research questions.

1. What are the presidents' perceptions of the factors affecting entrepreneurialism in community colleges in the Appalachian Region?
2. What are the workforce development officer's perceptions of the factors affecting entrepreneurialism in community colleges in the Appalachian Region?
3. Is there a statistically significant difference in the perceptions of presidents of rural community colleges as compared to the perceptions of presidents of non-rural community colleges regarding the factors affecting entrepreneurialism in community colleges in the Appalachian Region?
4. Is there a statistically significant difference in the perceptions of workforce development officers of rural community colleges as compared to the perceptions of workforce development officers of non-rural community

colleges regarding the factors affecting entrepreneurialism in community colleges in the Appalachian Region?

5. Is there a statistically significant difference in the perceptions of presidents of rural community colleges as compared to the perceptions of workforce development officers of rural community colleges regarding the factors affecting entrepreneurialism in community colleges in the Appalachian Region?
6. Is there a statistically significant difference in the perceptions of presidents of non-rural community colleges as compared to the perceptions of workforce development officers of non-rural community colleges regarding the factors affecting entrepreneurialism in community colleges in the Appalachian Region?

Methodology

This research study was conducted using a quantitative non-experimental design employing descriptive and inferential statistics for analysis. The survey instrument was a web-based survey sent using an email invitation to participate in the study. The instrument was based on information gathered in the Literature Review and the Research Questions. The survey instrument, a questionnaire, used the Likert Scale with a 4 representing either *strongly agrees* or is *very important* to a 1 representing *strongly disagrees* or is *not important*. The first section of the survey asked demographic questions: respondents position, setting of the college (rural or non-rural), and size in FTE students. The second section of the survey asked 20 questions regarding the practice of entrepreneurialism in their community colleges. The third section asked them to

choose any entrepreneurial activities they had used. The instrument was sent to a panel of five community college experts for *content validation*. The revised instrument was pilot tested and retested on five community colleges outside of the research study as a means of establishing a *coefficient of reliability*. As a means of improving confidentially and bias in collecting data, the final version of the survey was sent by email and collected by a college statistician. There was no risk to the participants as their identity and all responses were kept confidential and reported in the aggregate. Prior to data collection an application was made to the Human Subjects Committee at Old Dominion University which found it exempt from an Institutional Review Board review.

The Community Colleges of Appalachia Association provided the names and email addresses for the community colleges and the presidents. Each community college was then called for information on the workforce development officer. An email invitation was sent to the presidents and workforce development officers of 71 community colleges in the federally designated Appalachian Region. A second and third follow up email was sent one week apart to improve the number of responses.

Data were collected and entered into an SPSS program for statistical analysis using descriptive and inferential statistics. Research Questions 1 and 2 were analyzed using descriptive statistics: the *mean*, *mode*, *standard deviation*, *variance*, *distribution* and *range*. Research Questions 3 through 6 were analyzed using *independent sample t* tests. The responses were kept anonymous so as to protect participants' anonymity. There were 67 participants who completed the surveys online. The response rate from the presidents was 34 of 71 (48% response rate); 24 rural and 10 non-rural. The response rate for the workforce development officers was 33 of 71 (47% response rate); 19 rural and 14

non-rural. The overall response rate was 67 of 142 or 47.2%. Of the 71 community colleges 55 were represented for a response rate of 77%. An analysis of non-response bias conducted using *independent sample t* tests on twelve early responders and twelve late responders showed no significant differences in the responses.

Major Findings

This section summarizes the statistically significant findings of the study. The results of the presidents' and workforce development officers' perceptions of the factors affecting entrepreneurialism as it is practiced in community colleges of the Appalachian Region are presented in the following list.

1. The presidents ($M = 3.59$, $SD = .783$) and the workforce development officers ($M = 3.61$, $SD = .609$) strongly agree their community colleges are experiencing a reduction in State appropriations.
2. The presidents *($M = 3.29$, $SD = .629$)* and workforce development officers ($M = 3.52$, $SD = .667$) agree to the importance of generating alternative revenue with entrepreneurial activities.
3. The presidents ($M = 3.79$, $SD = .410$) and workforce development officers ($M = 3.76$, $SD = .435$) strongly agree the active encouragement of the president is an important factor affecting the practice of entrepreneurialism.
4. The presidents ($M = 3.38$, $SD = .604$) and workforce development officers ($M = 3.33$, $SD = .595$) agree on the importance of including entrepreneurial activities in their college's strategic plan.
5. Rural community college presidents ($M = 2.75$, $SD = .794$) are more likely than non-rural community college presidents ($M = 2.00$, $SD = .667$) to report the

number of industries in the service area limiting the ability of their college to offer contract training, $t(32) = 2.62, p = .013$.

6. Rural community college presidents ($M = 2.50$, $SD = .722$) are more likely to report the physical location of the college impeding their ability to engage in workforce training more frequently than non-rural community college presidents ($M = 1.06$, $SD = 0.633$), $t(32) = 3.34, p = .002$.
7. Rural community college workforce development officers ($M = 2.58$, $SD = .642$) are more likely than non-rural community workforce development officers ($M = 1.86$, $SD = .770$) to report the physical location of the college impedes their ability to engage in workforce training, $t(31) = 2.82, p = .008$.
8. Rural community college presidents ($M = 2.29$, $SD = .806$) are more likely than non-rural community college presidents to indicate the physical location of the college limits their ability in fundraising, ($M = 1.60$, $SD = .699$), $t(32) = 2.36, p = .024$.
9. There were no statistically significant differences in the perceptions of rural community college presidents and rural community college workforce development officers of the factors regarding the practice of entrepreneurialism.
10. There were no statistically significant differences in the perceptions of non-rural community college presidents and non-rural community college workforce development officers of the factors regarding the practice of entrepreneurialism.

Findings Related to Prior Research

Research Questions 1 and 2

Research questions 1 and 2 examine the perceptions of presidents and workforce development officers of the factors affecting entrepreneurialism. The descriptive statistics findings show a close agreement in the perceptions of the presidents and workforce development officers. The research questions are:

1. What are the presidents' perceptions of the factors affecting entrepreneurialism in community colleges in the Appalachian Region?
2. What are the workforce development officer's perceptions of the factors affecting entrepreneurialism in community colleges in the Appalachian Region?

Both the presidents and workforce development officers strongly agree their community colleges are experiencing a reduction in State funding. The literature supports these findings. By 2003, nearly every state in the nation had serious budget problems causing a reduction in support of higher education (Wenrich & Reid, 2003). Colleges have been asked to do more with less revenue, while facing increasing student enrollments, facilities in need of repair, escalating utility costs and employee benefits, need for technology improvements, and intense competition from private non-profit institutions (Bailey & Morest, 2004; Bock & Sullins, 1987; Hearn, 2003; Katsinas, 2005; Roueche & Jones, 2005; Taber, 1995; Wenrich & Reid, 2003).

This study finds the presidents and workforce development officers agree to the importance of generating alternative revenue with entrepreneurial activities. The literature supports this finding. Entrepreneurialism develops in response to a reduction in

operating resources and the need to generate alternate sustaining revenue streams (Clark, 1998; Finkle, et al, 2006; Jamali, 2005; Lui & Dubinsky, 2000; Zewe, 2006). By engaging in these activities, higher education leaders are practicing institutional or academic entrepreneurialism and generating sustaining revenues. With limited financial resources, community colleges across the nation have been searching for alternative funds to supplement declining revenues as early as 1981 (Bock & Sullins, 1987; Taber, 1995).

The presidents and workforce development officers strongly agree the active encouragement of the president is an important factor affecting the practice of entrepreneurialism. The literature supports this finding. To be successful in its entrepreneurial endeavors, a community college must possess an entrepreneurial spirit supported by its administrators, faculty, and staff (Glassman, et al, 2003). Entrepreneurial presidents are those who make a commitment to embrace change and lead their colleges to transform themselves into flexible, adaptive and financially secure organizations (Roueche, 2005). The role of the president is to: (1) build a strong foundation board committed to fundraising, (2) hire good people and trust them to do their work, (3) secure funds through liaisons, political lobbying, and corporate and individual contacts, and (4) serve as a facilitator and a motivator for the college to embrace an entrepreneurial culture (Anderson, Murray, & Olivarez, 2002; Roueche & Jones, 2005).

The presidents and workforce development officers agree to the importance of including entrepreneurial activities in their college's strategic plan. The literature review finds entrepreneurialism to be defined in business and collegiate settings as creating innovative profit-seeking organizations which include entrepreneurial activities in their

strategic plans to generate revenue (Carrier, 2003; Miller, 1982; Morgan, 2005; Slevin & Covin, 1990). Research in collegiate entrepreneurialism is an emerging topic which has not been fully investigated, and it lacks a specific focus on community colleges. Entrepreneurialism in non-community college research has been defined as a multidimensional concept: a process of risk taking, innovativeness, and proactiveness in monitoring the environment for opportunities that are adopted in strategic management activities (Klofsten & Jones-Evans, 2000; Louis, et al, 1989; Lui & Dubinsky, 2000; Wright, et al, 2004).

Research Question 3

Is there a statistically significant difference in the perceptions of presidents of rural community colleges as compared to the perceptions of presidents of non-rural community colleges regarding the factors affecting entrepreneurialism in community colleges in the Appalachian Region?

This study found rural community college presidents are more likely than non-rural community college presidents to report the number of industries in the service area limiting the ability of their college to offer contract training. The literature supports this finding. College setting may inhibit entrepreneurial activities, as rural location affects population, local tax bases, and number of industries (Grubb, et al, 1997). In addition, the location may inhibit entrepreneurial activities if there is: (1) decreased availability of telecommunications, (2) lack of highway infrastructure, (3) small population base, and (4) a distressed economy (Grubb, et al, 1997; Katsinas & Miller, 1998).

The study also found rural community college presidents are more likely to report the physical location of the college impeding their ability to engage in workforce training

more frequently than non-rural community college presidents. The literature supports this finding. A rural location affects the size of the population as well as the economic health of the area (Grubb, et al, 1997). Without an adequate number of businesses, the potential for workforce development to add significant financial resources to the college budget is severely compromised (Grubb, et al, 1997; Roessler, et al, 2007). If businesses are available and a rural college develops a new course, it will have difficulty in recouping its development costs because the market for the course is limited (Chesson & Rubin, 2002). In addition, it is more difficult for rural community colleges to operate state and federal workforce development programs which are designed for urban environments (Katsinas, et al, 2003).

The study also found rural community college presidents are more likely than non-rural community college presidents to indicate the physical location of the college limits their ability in fundraising. The literature found obtaining donated money is difficult for rural community colleges. These institutions, generally ignored by large foundations, are located in financially depressed areas which are home to very few wealthy individuals. This makes it difficult for them to solicit donations and large trusts. The National Committee for Responsive Philanthropy in 2004 noted that of the $300 billion given by American foundations only $100.5 million was committed to rural development (Fluharty & Scaggs, 2007). In fact, a 2004 study of 124 Fortune 500 companies revealed that rural organizations received only 1.4% of the 10,905 grants awarded (Fluharty & Scaggs, 2007).

Research Question 4

Is there a statistically significant difference in the perceptions of workforce development officers of rural community colleges as compared to the perceptions of workforce development officers of non-rural community colleges regarding the factors affecting entrepreneurialism in community colleges in the Appalachian Region?

The study found rural community college workforce development officers are more likely than non-rural community college workforce development officers to report the physical location of the college impedes their ability to engage in workforce training. The literature supports this finding. Mountainous rural and rural communities typically have difficulty in attracting businesses due to their geography, lack of telecommunications, sparse populations, and limited highway systems. Without these businesses, the potential for workforce development to add significant financial resources to the college budget is severely compromised (Grubb, et al, 1997; Roessler, et al, 2007). Non-rural community colleges have an advantage in workforce development due to the commercial and industrial opportunities in cities (Garza & Eller, 1998; Grubb, et al, 1997).

Research Question 5

Is there a statistically significant difference in the perceptions of presidents of rural community colleges as compared to the perceptions of workforce development officers of rural community colleges regarding the factors affecting entrepreneurialism in community colleges in the Appalachian Region?

The study found no statistically significant differences in the perceptions of rural presidents and rural workforce development officers regarding the factors affecting entrepreneurialism.

Research Question 6

Is there a statistically significant difference in the perceptions of presidents of non-rural community colleges as compared to the perceptions of workforce development officers of non-rural community colleges regarding the factors affecting entrepreneurialism in community colleges in the Appalachian Region?

The study found no statistically significant differences in the perceptions of non-rural presidents and non-rural workforce development officers regarding the factors affecting entrepreneurialism.

Entrepreneurial Activities

This research study included a section asking presidents and workforce development officers which entrepreneurial activities they used to generate revenue. Rural community colleges favored grants (93%), individual donor and contract training, (73%) and capital campaigns (57%). Leaders of non-rural community colleges favored contract training (100%), individual donor and capital campaigns (80%), and grants (70%). Less favored methods chosen by rural community colleges were the cafeteria (36%) and alumni fundraising (29%). Less favored by non-rural community college leaders were the sale of property (20%) and alumni fundraising (10%).

A national study conducted by Beard (2008) of community colleges examined which of the entrepreneurial activities were most successful at generating revenue. Unlike this research study, her study had an even number of rural and non-rural respondents. Her

study found examples of high revenue generation but low sustainability in capital campaigns, individual donor contributions, and sale of property and other appreciated assets. Her research found high sustaining (more than one year) revenues were generated by athletic and entertainment complexes, ownership of real property, foundation endowments, property leasing to leverage an asset with a negative impact, and some auxiliary services such as parking. Examples of activities using an excessive amount of resources and yielding very little revenue included the college-owned bookstores and cafeteria.

Unexpected Findings

An unexpected finding of the study was the lack of statistically significant differences in leaders' perceptions of the factors affecting entrepreneurialism found in Research Questions 5 and 6. The perceptions of rural presidents compared to rural workforce development officers, as well as, the perceptions of non-rural presidents compared to non-rural workforce officers were closely aligned. The findings of this study indicate the leaders of the rural community colleges have the same perceptions of entrepreneurialism as it is practiced in their rural community colleges. The findings also indicate the leaders of the non-rural community colleges have the same perceptions of entrepreneurialism as it is practiced in their non-rural community colleges.

Another unexpected finding of the study was the small number of statistically significant differences. Categorizing the colleges as either simply rural or non-rural may have added to this finding. Since the community colleges self-selected their status, this resulted in colleges with less than 500 FTE students and colleges of more than 5,000 FTE students choosing the designation of a rural community college. If the research questions

included more defined location variables such as rural, suburban, and urban, or mountainous, plateau, and foothills; there may have been more statistically significant items. For example, a community college with 2,500 FTE students located in the highlands of the Appalachian Region where the geography is steep mountains and narrow valleys would probably have chosen the designation of a rural community college. A same size college located in the Appalachian foothills in a farming area 30 miles from Birmingham, Alabama may also have chosen the rural designation. These differences in location may have affected their responses as the number of industries, telecommunication and highway infrastructure, population base, and economic status of the area may be different.

Another unexpected finding was the colleges whether rural or non-rural were not engaged in soliciting donations from their alumni. Community colleges graduate a large number of alumni each year. Only 29% of rural community college presidents and 10% of non-rural community colleges tapped into this valuable resource.

Conclusions

Implications

This research adds to the general body of knowledge on the topic of entrepreneurialism in community colleges and fills a gap in the research by focusing on a predominately rural area and studying and comparing entrepreneurialism and the factors that enhance and inhibit entrepreneurial activities in both rural and non-rural community college environments. This research is significant and relates directly to community college leadership as it: (1) seeks to understand entrepreneurialism and its use to generate sustaining revenue; (2) provides vital information for community college leaders to assist

them in strategic planning and decision making; and (3) hopes to decrease the risks and improve the outcomes of entrepreneurial activities used to supplement declining operational budgets. Since this research compares rural and non-rural college leader's perceptions of what enhances and inhibits entrepreneurialism, it provides more detailed information on the differences and further reduces the associated risks. The end result may be an increased ability to generate sustaining revenue to aid the colleges in fulfilling their missions.

Recommendations for Practitioners

The following are recommendations for community colleges engaging in the practice of entrepreneurialism to supplement their declining operational budgets and provide financial stability for their organization.

The President and Executive Team

The encouragement of the college president and having an entrepreneurially trained executive team are important factors in improving revenue from entrepreneurial activities. An entrepreneurial trained president and executive team may be more likely to inspire a culture of entrepreneurialism at the college. A significant factor inhibiting entrepreneurial ventures is the fear of making poor decisions which would waste limited financial resources (Glassman, et al, 2003). Administrative personnel and the faculty may fear using limited and valuable resources for entrepreneurial activities. If the president encourages all to participate, it may by reduce this fear. Providing training for the president and his or her executive team may reduce fear. With training the executive leadership team may become skilled in entrepreneurial characteristics such as risk taking and creativity. The team may also acquire knowledge in business and economics which

may help them to make informed decisions on what types of entrepreneurial activities would bring in a profit.

Workforce Development and Contract Training

A rural location inhibits workforce development and contract training. A rural location with a lack of adequate internet, telecommunications, and highway infrastructures makes it difficult to attract businesses and industries to the area and often contributes to the economically distressed condition of the community. The college should become actively involved in local and state initiatives to provide infrastructural access to their colleges and communities. It will take effort and time to encourage private businesses and federal agencies to provide these services. Political challenges facing community colleges include:

1. The cost of running internet and telecommunication wires along with the high cost of long distance telephone service makes providers reluctant to build an infrastructure to remote or sparsely-populated areas (Balsam West FiberNet, LLC, 2007).
2. The inability of the Appalachian Development Highway System (ADHS), a program authorized by Congress in 1964, to finish building highways. Only 75% of the highways were completed by 2008 leaving many areas with no highway access.

Fundraising

A rural location inhibits fundraising. Fundraising activities include developing giving campaigns and capital programs, individual and corporate donor solicitations, scholarship endowments, alumni giving, planned giving through wills and estates, and

solicitation of foundation grants (Babitz, 2003; Bock & Sullins, 1987; Carrier, 2003; Ryan & Palmer, 2005). Staff needed to search, write, and monitor grants is often not available in small colleges thus inhibiting their efforts in competing for limited funds. If possible, the college should invest in a full time fundraiser or grant position.

Mostly isolated by geography and culturally conditioned to compete with one another, rural institutions have difficulty in working with neighboring community colleges to build a critical population mass that is attractive to major funding interests (Fluharty & Scaggs, 2007). Colleges should form partnerships with local and regional community agencies and other community colleges and apply for mutually beneficial grants. A rural community college has a full time grant writer. In 1999, the college received $1.5 million in funding to start a high speed project to bring the internet to a mountainous region southwest of Asheville, North Carolina. Needing more assistance and funding the college entered into a collaborative partnership with the Eastern Band of the Cherokee Nation and Drake Enterprises, founder of Turbo Tax. This collaboration is allowing the region to participate fully in the global economy (Balsam West FiberNet, LLC, 2007).

Fundraising is enhanced when everyone in the college assumes responsibility. Even faculty and staff should be encouraged to find donations, including: monetary donations, grant writing, free equipment from vendors, resource sharing, and free services. Presidents and colleges committed to entrepreneurialism play a pivotal role in enhancing the success of fundraising and building relationships. Community colleges having and continuing to display a good institutional image; providing quality education;

and holding themselves accountable to the community they serve will receive bountiful donations and sustaining revenue streams (Babitz, 2003; Roueche & Jones, 2005).

Entrepreneurial Activities

The current study included a section asking presidents and workforce development officers which entrepreneurial activities they used to generate revenue. Rural community colleges favored grants (93%), individual donor and contract training, (73%) followed by capital campaigns (57%). Non-rural community colleges favored contract training (100%), individual donor and capital campaigns (80%), and grants (70%). Less favored by rural community colleges was the cafeteria (36%) and alumni fundraising (29%). Less favored by non-rural community colleges was the sale of property (20%) and alumni fundraising (10%).

A national study conducted by Beard (2008) of community colleges with 50% of respondents from a rural geographical setting, found examples of high revenue generation but low sustainability in capital campaigns, individual donor contributions, and sale of property and other appreciated assets. Her research found high sustaining (more than one year) revenues were generated by athletic and entertainment complexes, ownership of real property, foundation endowments, property leasing to leverage an asset with a negative impact, and some auxiliary services such as parking. Examples of activities using an excessive amount of resources and yielding very little revenue included the college-owned bookstores and cafeteria.

This study indicated the following recommendations for deciding on which entrepreneurial activities to incorporate into the college's strategic plan. These include: (1) performing a return on investment analysis of all previous activities to ascertain

which ones have been profitable in the past; (2) soliciting input from all staff and faculty, (3) calculating all costs and anticipated returns from new activities; (4) forming an alumni association with a giving campaign and continuing to solicit funds annually from this group; (5) scanning the environment for entrepreneurial opportunities not yet considered such as leveraging community resources collaboratively to decrease costs and provide for new revenue streams by providing internet services, library, gymnasium, swimming, theatre space, and meeting places for the community (Roueche & Jones, 2005); and (6) investing in auxiliary enterprises such as building dormitories, and providing printing and other services to the community (Roueche & Jones, 2005).

Recommendations for Future Research

This study was limited to the federally designated Appalachian Region which follows the spine of the Appalachian Mountains through 13 states. The central and south areas are mostly rural with steep mountains and narrow valleys. The plateaus and foothills allow for growth expansion; thus, permitting suburban and urban areas to exist. Many of the rural areas have been designated by the federal government as economically distressed. It would not be feasible to generalize the findings of this study to other areas in the United States. A more comprehensive research study of all community colleges would improve the findings of this research.

This study allowed for only two categories of community colleges, rural and non-rural. This may have affected the participants' responses. A community college located very near a large city may have chosen the designation rural over non-rural. This college would then have been grouped with rural colleges located far from large cities. The designation of rural would have been the same, but the number of industries,

telecommunication and highway infrastructures, population base, and economic status may have been different. A study designating community colleges as rural, suburban, and urban with additional variables such as multiple sizes in FTE students would enhance the findings and provide more valuable information.

This study inquired about but did not rank the types of entrepreneurial activities used by community colleges. A research study ranking the activities by profit generation would give both rural and non-rural community colleges more information as to which activities they might choose; thus reducing the risks as they try to supplement declining support from state and local governments.

Concluding Remarks

The combination of a weak economy with a corresponding decline in tax revenue has created deficits in state and local budgets which adversely affect the financial stability of community colleges. This leaves community colleges struggling to continue to provide education in support of their missions. In order to provide a source of alternative revenue, community colleges are embracing the spirit of entrepreneurialism and transforming themselves into profit seeking businesses.

This study found four significant areas of importance for this transformation.

1. Entrepreneurial training for rural and non-rural community colleges' executive teams is critical for success. An entrepreneurial trained president and executive team will provide financial stability for the college. Entrepreneurial training reduces risks, enhances revenue generation, encourages an entrepreneurial spirit in the faculty and staff, and builds trust in for the executive team.

2. The diverse geographical and topographical areas in the Appalachian Region play a crucial role in a community college's ability to engage in entrepreneurial activities. Scanning the environment for entrepreneurial opportunities suited specifically to an area, rather than emulating other community colleges, would reduce risks and provide more revenue.
3. Fundraising is more of a challenge for rural community colleges than non-rural colleges. A full time grant writer and fundraiser would be valuable assets by subsidizing their salaries and increasing the amount of money earned from this source. Alumni are an untapped source for annual fundraising for both rural and non-rural community colleges. A rural community college that graduates 200 students per year in twenty years would have 4,000 alumni. A donation of $25 from half of them would result in a sum of $50,000 per year. Small and isolated community colleges, often ignored by larger foundations, would benefit by forming partnerships with other near-by community colleges when applying for grants.
4. Workforce development and contract training generate less revenue for rural community colleges as their physical location adversely impacts the number of industries in the area. Community colleges may be able to partner with state and local politicians in an effort to bring more industries into the area.

In conclusion, community colleges are experiencing a reduction in state and local funding. Out of necessity, many are incorporating entrepreneurial activities into their strategic plans in order to provide financial stability for their colleges. Encouragement from an entrepreneurial president and training for the executive team will decrease risks

and increase the amount of revenue generated from entrepreneurial activities. A full time fundraiser and grant writer are extremely important to generating alternative revenue.

This research confirms the physical location of community colleges in the mostly rural and mountainous Appalachian Region adversely affects their ability to generate alternative revenue using fundraising and workforce training, two major sources of revenue for community colleges. Consequently, these rural community colleges are unable to raise equivalent amounts as non-rural community colleges; and therefore, should receive additional funding from their state governments. Further research is indicated to discover which alternative methods generate the most revenue for rural community colleges. Since this research is limited to one region, it is recommended that a study be conducted of all rural community colleges in the United States.

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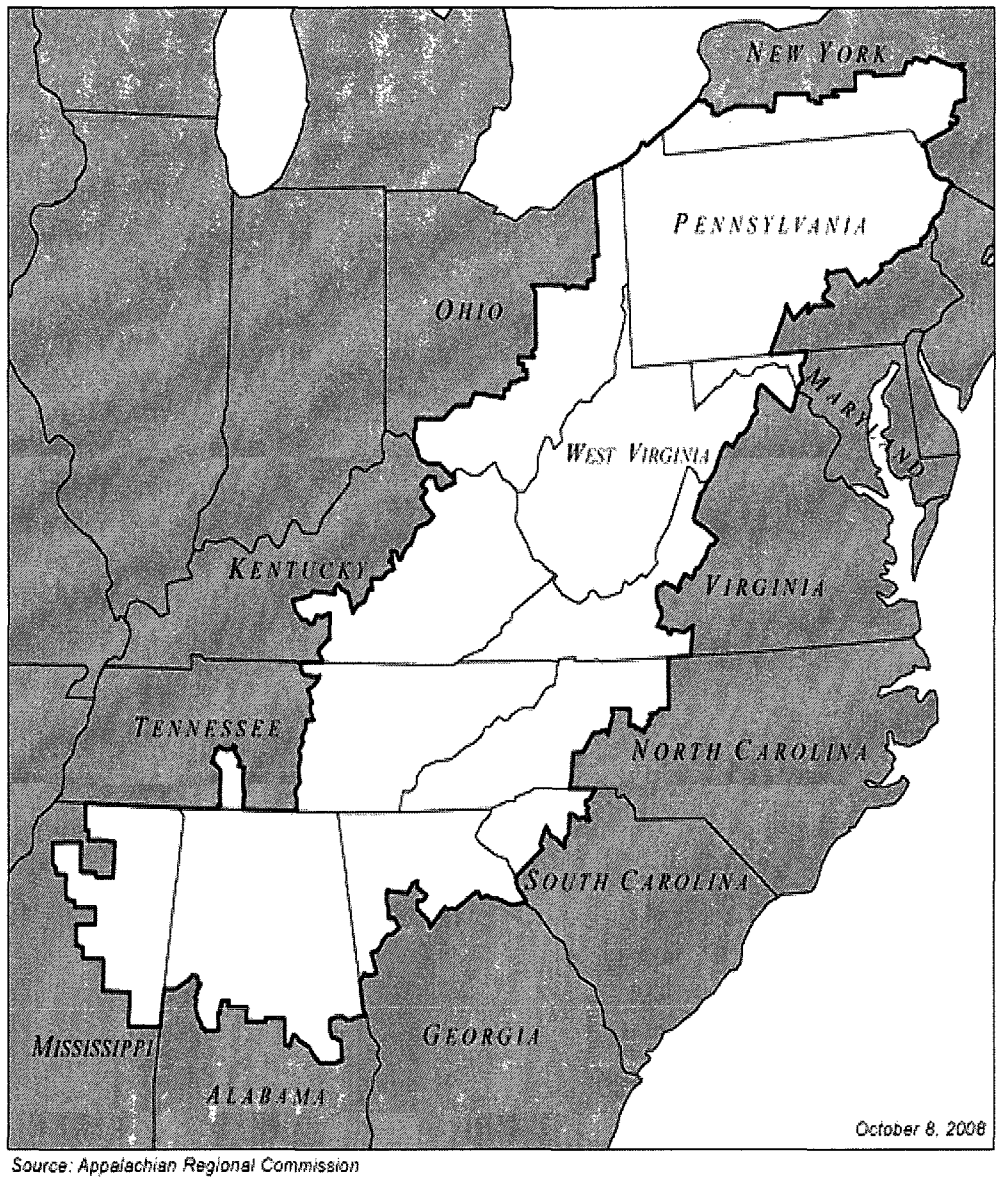
APPENDIX A

APPALACHIAN REGION MAP

The Appalachian Region

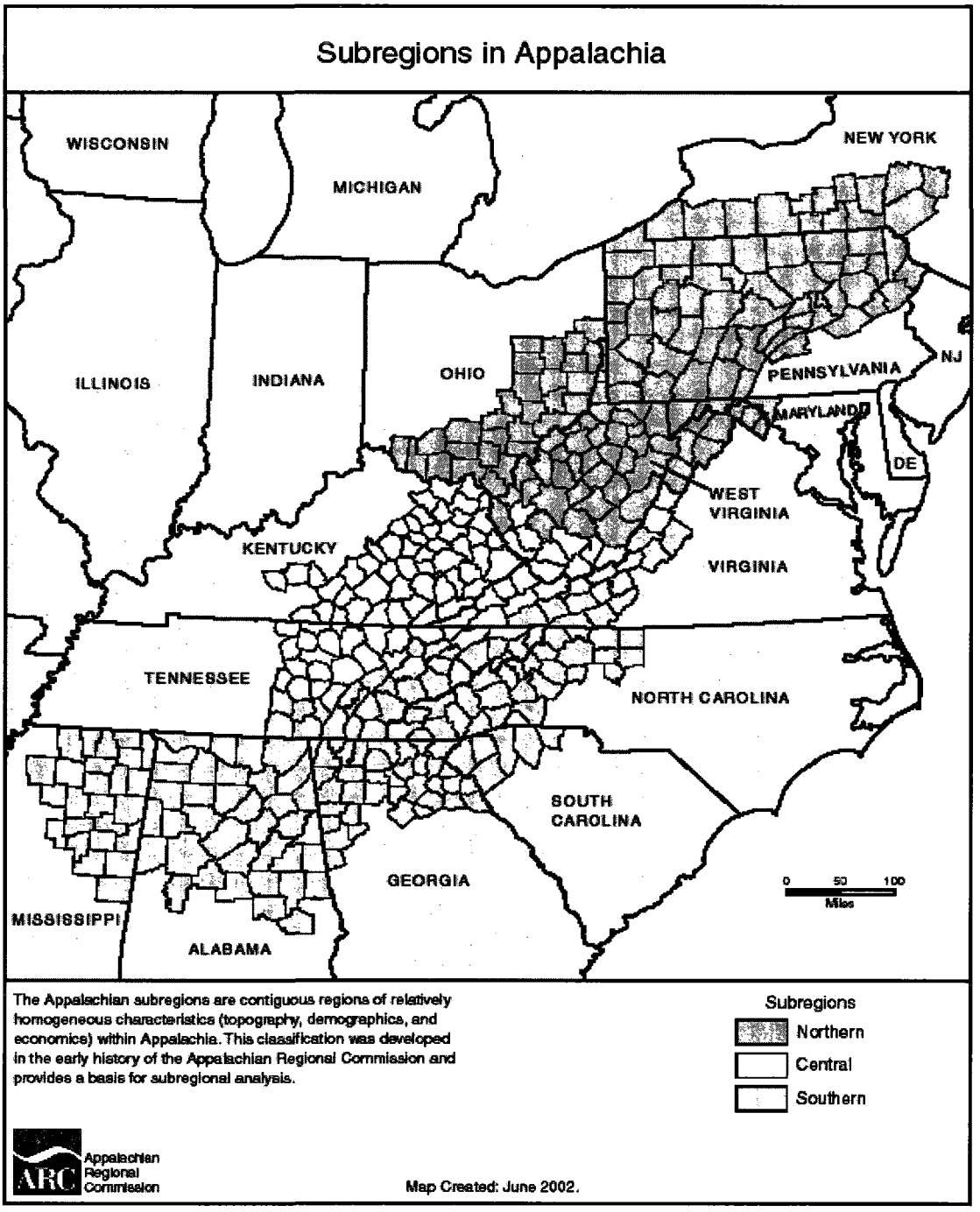


Source: Appalachian Regional Commission

http://www.arc.gov/misc/arc_map.jsp

APPENDIX B

APPALACHIAN SUB REGIONS MAP



APPENDIX C

SURVEY

Demographic Questions: Choose one answer for each question.

1. What is your position/duties at the college?
   - □ President
   - □ Workforce Development/Continuing Education

2. What is the setting for your college?
   - □ Rural □ Non-rural

3. What is your community college's student FTE?
   - □ <500 □ 500-1,999 □ 2,000-4,999 □ 5,000-9,999 □ 10,000 +

Entrepreneurialism Questions: Please read the following statements concerning generating alternative revenue with entrepreneurial activities. For each statement indicate whether you strongly agree, agree, disagree, or strongly disagree with the statement.

1. Our college has experienced a reduction in State appropriations.
   - □ Strongly agree □ Agree □ Disagree □ Strongly disagree

2. Alternative revenue from entrepreneurial activities is important to our institution.
   - □ Strongly agree □ Agree □ Disagree □ Strongly disagree

3. Entrepreneurialism is supported by our strategic plan.
   - □ Strongly agree □ Agree □ Disagree □ Strongly disagree

4. It is too risky to invest our limited resources in activities that may not generate an immediate profit.
   - □ Strongly agree □ Agree □ Disagree □ Strongly disagree

5. An entrepreneurially trained executive team is essential for revenue generation.
   - □ Strongly agree □ Agree □ Disagree □ Strongly disagree

6. Customized workforce training contracts have added significantly to our operating budget.
   - □ Strongly agree □ Agree □ Disagree □ Strongly disagree

7. The number of industries in our service area limits our ability to offer contract workforce training.
□ Strongly agree □ Agree □ Disagree □ Strongly disagree

8. Each of our college's Board of Trustees is actively involved in fundraising.
□ Strongly agree □ Agree □ Disagree □ Strongly disagree

9. Our college culture reflects an entrepreneurial spirit.
□ Strongly agree □ Agree □ Disagree □ Strongly disagree

10. A full time dedicated fundraiser is essential for fundraising.
□ Strongly agree □ Agree □ Disagree □ Strongly disagree

11. A full time dedicated grant writer is essential for grant writing.
□ Strongly agree □ Agree □ Disagree □ Strongly disagree

12. The physical location of the college impedes our ability to engage in profitable workforce training.
□ Strongly agree □ Agree □ Disagree □ Strongly disagree

13. The physical location of the college impedes our ability to engage in fundraising.
□ Strongly agree □ Agree □ Disagree □ Strongly disagree

14. Our relationships with political, community, and industrial leaders have a positive effect on our ability to generate alternative revenues.
□ Strongly agree □ Agree □ Disagree □ Strongly disagree

15. The condition of our telecommunication infrastructure inhibits our ability to engage in entrepreneurial activities.
□ Strongly agree □ Agree □ Disagree □ Strongly disagree

16. The condition of our internet infrastructure inhibits our ability to engage in entrepreneurial activities.
□ Strongly agree □ Agree □ Disagree □ Strongly disagree

17. The condition of our highway infrastructure inhibits our ability to engage in entrepreneurial activities.
□ Strongly agree □ Agree □ Disagree □ Strongly disagree

18. Competition from for-profit organizations has decreased the number of continuing education classes we offer.
□ Strongly agree □ Agree □ Disagree □ Strongly disagree

19. The president of the college encourages the use of entrepreneurial activities to generate alternative revenue.
□ Strongly agree □ Agree □ Disagree □ Strongly disagree

20. The president of the college has participated in professional development to enhance entrepreneurialism.
□ Strongly agree □ Agree □ Disagree □ Strongly disagree

21. Check all that have proven effective for your institution to generate funds from external sources.

□ Alumni association

□ Capital campaigns

□ College owned bookstore

□ College owned cafeteria

□ Contract training

□ Grants

□ Individual donor contributions

□ Patents and royalties

□ Rental property

□ Sale of property and other appreciated assets

Please add any comments on items and any new items below.

APPENDIX D

EMAIL TO PANEL OF EXPERTS

To:

From: Sharon Hatfield > shatf001@odu.edu

Subject: Review of Survey Instrument

I am a doctoral candidate in the Ph.D. program in Community College Leadership at Old Dominion University in Norfolk, VA. My dissertation is "Exploring Entrepreneurialism in Community Colleges in the Appalachian Region", and it involves a quantitative research design employing a Likert Scale instrument which will be sent to presidents and workforce development officers at community colleges in the Appalachian Region. The purpose of the study is to explore the factors enhancing and inhibiting the practice of entrepreneurialism as it is currently being practiced in each institution. I am writing to request your assistance in reviewing the survey instrument and rating each of the items on the instrument. Your feedback on the survey instrument is extremely important to my study, and your experience and expertise will help me establish the content validity of the survey instrument itself.

The participants of this study are community colleges located in the federally designated Appalachian Region which follows the Appalachian Mountain Range through 13 states and has 40% of the population living in rural areas. The study asks community college presidents and workforce development officers: 1) their perceptions of what enhances and inhibits their quest for alternative revenue sources, and 2) the types of entrepreneurial activities they are currently using to generate revenue. The survey is attached.

Instructions:

1) Please rate each question in the following manner: A score of 3 indicates the item should be included. A score of 2 indicates the item should probably be included. A score of 1 indicates the item should be removed. A blank line has been added in front of each question for your response.
2) At the end of the survey please add any new items you feel should be included.
3) Return your response within one week to shatf001@odu.edu.

Thank you for assisting in this research.

APPENDIX E

EMAIL INVITATION

To: John Doe@ mail.cc.edu

From: Sharon Hatfield, doctoral candidate

Subject: Entrepreneurial Community Colleges in the Appalachian Region

Community colleges have been receiving less funding to support their operational budgets. Many of these colleges are engaging in entrepreneurial activities as a method of generating revenue. I am surveying the presidents and workforce development officers of community colleges in the Appalachian Region for the purpose of identifying factors which enhance and inhibit the practice of entrepreneurialism. Your experience and perceptions are extremely important and valuable to the study. All identities and all responses will be kept confidential. Once you finish the questionnaire you will be given an opportunity to request a summary of the survey results.

If you agree to voluntarily participate in this study, please click on the website link below which will take you automatically to the survey. It should take only 5 to 7 minutes. If you have any questions, you can contact me at shatfield@jchs.edu. Thank you for contributing your expertise to this study.

LINK TO SURVEY

APPENDIX F

HUMAN SUBJECTS REVIEW

OLD DOMINION UNIVERSITY

October 15, 2009

Dr. Raspiller:

Your proposal submission titled, "**Exploring Entrepreneurship in Community Colleges in the Appalachian Region**" has been deemed EXEMPT by the Human Subjects Review Committee of the Darden College of Education. If any changes occur, especially methodological, notify the Chair of the DCOE HSRC, and supply any required addenda requested of you by the Chair. You may begin your research.

PRIOR TO THE START OF YOUR STUDY, **you must send a signed and dated hardcopy of your exemption application submission to the address below.** Thank you.

Edwin Gómez, Ph.D.
Associate Professor
Chair, Human Subjects Review Committee, DCOE
Human Movement Studies Department
Old Dominion University
2010 Student Recreation Center
Norfolk, VA 23529-0196
757-683 6309 (ph)
757-683-4270 (fx)

APPENDIX G

SECOND EMAIL

To:

From: Sharon Hatfield > shatf001@odu.edu

Subject: Reminder: Survey on Entrepreneurialism in Community Colleges in the Appalachian Region

Last week you should have received an email inviting you to participate in my dissertation study on entrepreneurialism in community colleges in the Appalachian Region by completing an on-line questionnaire. Your name was provided by the Appalachian Regional Commission.

If you have already completed and submitted the questionnaire, thank you for participating. If not, please do so today. The questionnaire will only take 5 to 7 minutes and can be accessed by clicking on the link below.

All responses will be kept confidential and all reporting will be done in the aggregate with no mention of institution or respondent's name. Your participation is voluntary. Your opinions are highly valued.

If you have any questions or concerns, please contact me at shatf001@odu.edu or by telephone at 540-985-8263. Thank you for taking the time to answer the questionnaire.

LINK TO SURVEY

APPENDIX H

THIRD EMAIL

To:

From: Sharon Hatfield > shatf001@odu.edu

Subject: Reminder: Survey on Entrepreneurialism in Community Colleges in the Appalachian Region

I want to thank you for participating in my dissertation study by completing the online questionnaire. If you have already completed and submitted the questionnaire, thank you for participating. If not, please do so today as I plan to close the survey by November 15, 2009. The questionnaire will only take 5 to 7 minutes and can be accessed by clicking on the link below.

This is the last reminder that you will receive, and I would like to thank you again for taking your time to participate in this study.

If you have any questions or concerns, please contact me at shatf001@odu.edu or by telephone at 540-985-8263.

LINK TO SURVEY

APPENDIX I

SURVEY RESULTS

SUMMARY REPORT WITH BAR CHARTS
SURVEY ON ENTREPRENEURIAL ACTIVITIES AT COMMUNITY COLLEGES IN THE APPALACHIAN REGION

EntrepreneurialActivities - distribution on 11/9/2009

Start Date: 11/10/2009
End Date: 12/16/2009
Respondents Invited: 142
Total Respondents Completed: 67(47.18%)
Partial Completes: 4(2.82%)

Part I: Demographic Items

What is your position/duties at the college?

- **Select one of the following**

(Each Respondent could choose only **ONE** of the following options:)

Response	Total	% of Total Respondents	%
President	36		51%
Workforce Development/Continuing Education	35		49%
Total Responses: 71		0% 20% 40% 60% 80%	

What is the setting for your college?

- **Select one of the following**

(Each Respondent could choose only **ONE** of the following options:)

Response	Total	% of Total Respondents	%
Rural	45		63%
Non-rural	26		37%
Total Responses: 71		0% 20% 40% 60% 80%	

What is your community college's student FTE?

- **Select one of the following**

(Each Respondent could choose only **ONE** of the following options:)

Response	Total	% of Total Respondents	%
<500	2		3%
500-1,999	24		34%
2,000-4,999	26		37%
5,000-9,999	14		20%
10,000+	5		7%
Total Responses: 71		0% 20% 40% 60% 80%	

Part II: Entrepeneurial Items

Please read the following statements concerning finance, entrepreneurial activities, and generating alternative revenue at your community college. For each statement indicate whether you strongly agree, agree, disagree, or strongly disagree with the statement

- **My community college has experienced a reduction in State appropriations.**

(Each Respondent could choose only **ONE** of the following options:)

Response	Total	% of Total Respondents	%
Strongly agree	47		70%
Agree	14		21%
Disagree	5		7%
Strongly disagree	1		1%
Total Responses: 67		0% 20% 40% 60% 80%	

- **Generating alternative revenue from entrepreneurial activities is important to my community college.**

(Each Respondent could choose only **ONE** of the following options:)

Response	Total	% of Total Respondents	%
Strongly agree	32		48%
Agree	31		46%
Disagree	3		4%
Strongly disagree	1		1%
Total Responses: 67		0% 20% 40% 60% 80%	

- **Entrepreneurial activities are supported by my community college's strategic plan.**

(Each Respondent could choose only **ONE** of the following options:)

Response	Total	% of Total Respondents	%
Strongly agree	28		42%
Agree	35		52%
Disagree	4		6%
Strongly disagree	0		0%
Total Responses: 67		0% 20% 40% 60% 80%	

- **The number of industries in my community college's service area limits its ability to offer contract workforce training.**

(Each Respondent could choose only **ONE** of the following options:)

Response	Total	% of Total Respondents	%
Strongly agree	7		10%
Agree	24		36%
Disagree	31		46%
Strongly disagree	5		7%
Total Responses: 67		0% 20% 40% 60% 80%	

- **My community college's culture reflects an entrepreneurial spirit.**

(Each Respondent could choose only **ONE** of the following options:)

Response	Total	% of Total Respondents	%
Strongly agree	10		15%
Agree	40		60%
Disagree	15		22%
Strongly disagree	2		3%
Total Responses: 67		0% 20% 40% 60% 80%	

- **My community college's relationships with state and local political leaders have had a positive effect on our ability to generate alternative revenues.**
(Each Respondent could choose only **ONE** of the following options:)

Response	Total	% of Total Respondents	%
Strongly agree	16		24%
Agree	38		57%
Disagree	12		18%
Strongly disagree	1		1%
Total Responses: 67		0% 20% 40% 60% 80%	

- **The physical location of my community college impedes our ability to engage in revenue-generating workforce training.**
(Each Respondent could choose only **ONE** of the following options:)

Response	Total	% of Total Respondents	%
Strongly agree	4		6%
Agree	20		30%
Disagree	32		48%
Strongly disagree	11		16%
Total Responses: 67		0% 20% 40% 60% 80%	

- **The physical location of my community college impedes our ability to engage in fundraising.**
(Each Respondent could choose only **ONE** of the following options:)

Response	Total	% of Total Respondents	%
Strongly agree	2		3%
Agree	19		28%
Disagree	32		48%
Strongly disagree	14		21%
Total Responses: 67		0% 20% 40% 60% 80%	

PART III: Factors Affecting Entrepreneurial Activities

Please rate the importance of each of the following factors affecting entrepreneurial activities at community colleges in the Appalachian Region.

Response	Total	% of Total Respondents	%
Very important	34		51%
Important	25		37%
Somewhat important	6		9%
Not important	2		3%
Total Responses: 67		0% 20% 40% 60% 80%	

- **A full time dedicated grant writer**

(Each Respondent could choose only **ONE** of the following options:)

Response	Total	% of Total Respondents	%
Very important	43		64%
Important	16		24%
Somewhat important	6		9%
Not important	2		3%
Total Responses: 67		0% 20% 40% 60% 80%	

- **Telecommunication infrastructure**

(Each Respondent could choose only **ONE** of the following options:)

Response	Total	% of Total Respondents	%
Very important	42		63%
Important	21		31%
Somewhat important	4		6%
Not important	0		0%
Total Responses: 67		0% 20% 40% 60% 80%	

- **Internet infrastructure**

(Each Respondent could choose only **ONE** of the following options:)

Response	Total	% of Total Respondents	%
Very important	48		72%
Important	19		28%
Somewhat important	0		0%
Not important	0		0%
Total Responses: 67		0% 20% 40% 60% 80%	

- **The road and highway infrastructure**

(Each Respondent could choose only **ONE** of the following options:)

Response	Total	% of Total Respondents	%
Very important	33		49%

Important	21		31%
Somewhat important	12		18%
Not important	1		1%
Total Responses: 67		0% 20% 40% 60% 80%	

- **Competition from for-profit educational organizations**

(Each Respondent could choose only **ONE** of the following options:)

Response	Total	% of Total Respondents	%
Very important	10		15%
Important	24		36%
Somewhat important	27		41%
Not important	5		8%
Total Responses: 66		0% 20% 40% 60% 80%	

- **The active encouragement of the community college president**

(Each Respondent could choose only **ONE** of the following options:)

Response	Total	% of Total Respondents	%
Very important	52		78%
Important	15		22%
Somewhat important	0		0%
Not important	0		0%
Total Responses: 67		0% 20% 40% 60% 80%	

- **Professional development in entrepreneurial activities for the community college's senior leadership team**

(Each Respondent could choose only **ONE** of the following options:)

Response	Total	% of Total Respondents	%
Very important	28		42%
Important	30		45%
Somewhat important	8		12%
Not important	1		1%
Total Responses: 67		0% 20% 40% 60% 80%	

PART IV: Best Practices

Please review the following list of entrepreneurial activities and check all that have proven to be effective at your community college

- **Select all that apply**

(Each Respondent could choose **ANY** of the following options:)

Response	Total	% of Total Respondents	%

Alumni association	22	33%
Capital fund-raising campaigns	36	54%
College-owned bookstore	26	39%
College-owned cafeteria	18	27%
Contract training	54	81%
Grants	59	88%
Individual donor contributions	44	66%
Patents and royalties	1	1%
Rental of property	20	30%
Sale of property and other appreciated assets	8	12%
Other (please specify)	2	3%

Total Responses: 67 0% 20% 40% 60% 80%

- **Other (please specify)**

view them

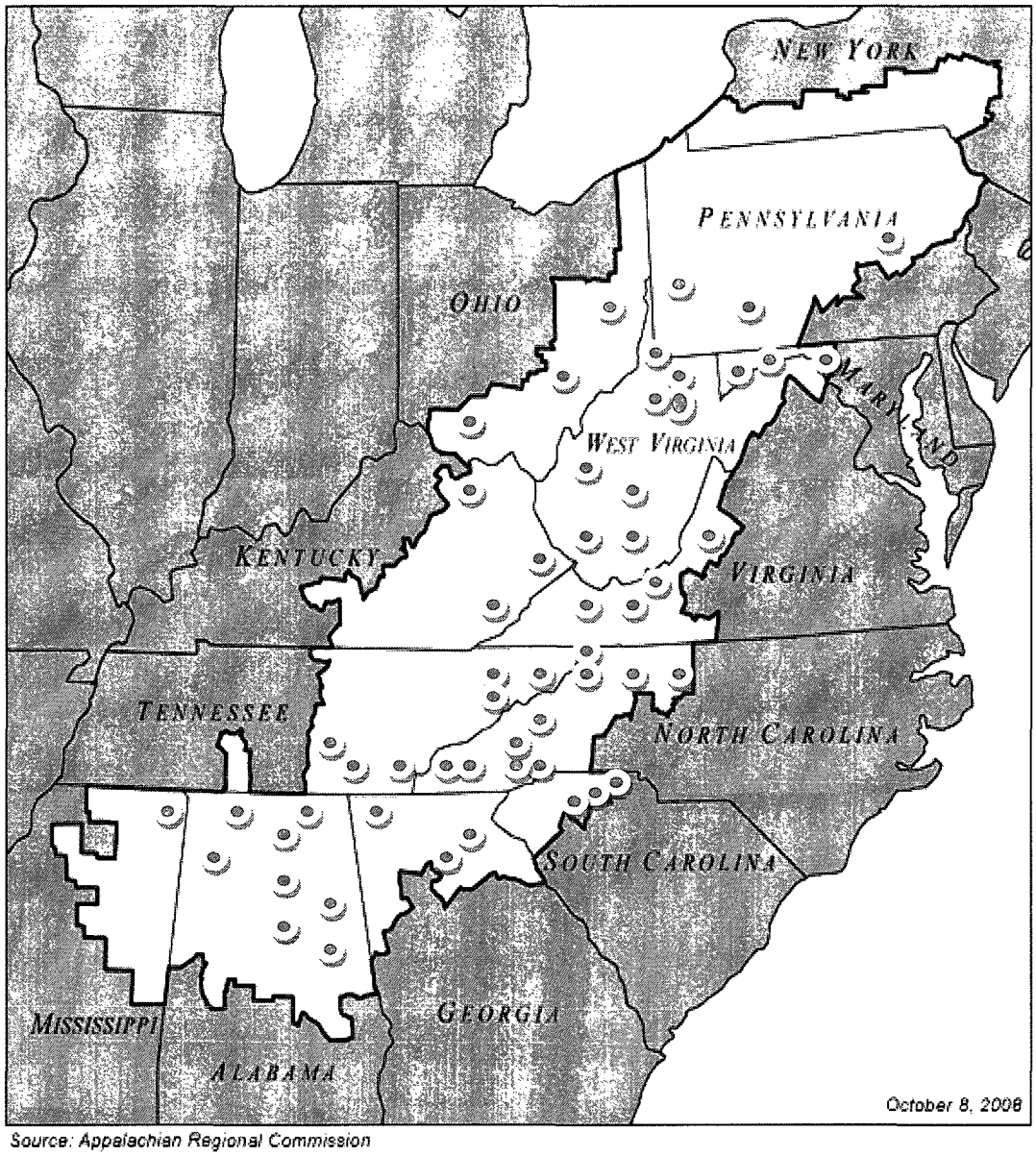
If you would like to receive a summary of the results of this survey, please enter your email address.

view form

APPENDIX J

COMMUNITY COLLEGES IN STUDY MAP

The Appalachian Region



Source: Appalachian Regional Commission

APPENDIX K

RQ 1 SUMMARY TABLES

Research Question #1: What are the presidents' perceptions of the factors affecting entrepreneurialism of community colleges in the Appalachian Region?

Number (n) Rural = 24 Number (n) Non-Rural = 10
Scale: 1 = Strongly Disagrees (SD); 2 = Disagrees (D); 3 = Agrees (A); 4 = Strongly Agrees (SA)

Items 1-8						
Rate the following statements concerning finance, entrepreneurial activities, and generating alternative revenue at your community college.	***Mean***	**Distribution** **1 SD** **2 D** **3 A** **4 SD**	**Percent Agree**	**Mode**	**Range**	***Standard Deviation***
College has experienced a reduction in State appropriations	3.59	1 = 1 2 = 3 3 = 5 4 = 25	88	4	3	.783
Importance of generating alternative revenue with entrepreneurial activities	3.29	2 = 3 3 = 18 4 = 13	91	3	2	.629
Entrepreneurial activities are supported by the college's strategic plan	3.38	2 = 2 3 = 17 4 = 15	94	3	2	.604
Number of industries in the service area limits the ability to offer contract training	2.53	1 = 3 2 = 14 3 = 13 4 = 4	50	2	3	.825
College culture reflects an entrepreneurial spirit	2.97	2 = 6 3 = 23 4 = 5	82	3	2	.577
College's relationship with state and local political leaders have had a positive effect on our ability to generate alternative revenues	2.91	1 = 1 2 = 6 3 = 22 4 = 5	77	3	3	.668
Physical location of the college impedes our ability to engage in workforce training.	2.24	1 = 7 2 = 13 3 = 13 4 = 1	41	2	3	.819
Physical location of college impedes our ability to engage in fundraising	2.09	1 = 9 2 = 14 3 = 10 4 = 1	32	2	3	.830

Items 9-20						
Rate the importance of each of the factors affecting entrepreneurial activities at community colleges in the Appalachian Region	***Mean***	**Distribution** **1 SD** **2 D** **3 A** **4 SD**	**Percent Agree**	**Mode**	**Range**	***Standard Deviation***
Faculty efforts to obtain grants	3.06	1 = 1 2 = 7 3 = 15 4 = 11	73	3	3	.814
An entrepreneurial trained executive team	3.35	2 = 4 3 = 14 4 = 16	88	3	2	.691
Customized workforce training contracts	3.53	2 = 1 3 = 14 4 = 19	97	4	2	.563
Participation of members of the college's Board of Trustees	2.56	1 = 5 2 = 12 3= 10 4 = 7	50	2	3	.991
A full time dedicated fundraiser	3.26	1 = 1 2 = 4 3 = 14 4 = 15	85	4	3	.790
A full time dedicated grant writer	3.32	1 = 1 2 = 4 3 = 12 4 = 17	85	4	3	.806
Telecommunications infrastructure	3.47	2 = 2 3 = 14 4 = 18	94	4	2	.615
Internet infrastructure	3.71	3 = 10 4 = 24	100	4	1	.462
Road and highway infrastructure	3.24	2 = 6 3 = 14 4 = 14	82	3[a]	2	.741
Competition from for-profit educational organizations	2.56	1 = 4 2 = 12 3 = 13 4 = 5	63	3	3	.894
Active encouragement of the community college president	3.79	3 = 7 4 = 27	100	4	1	.410
Professional development in entrepreneurial activities for the community college's senior team	3.38	1 = 1 2 = 2 3 = 14 4 = 17	91	4	3	.739

a: multiple modes exist, smallest shown

APPENDIX L

RQ 2 SUMMARY TABLES

Research Question #2: What are the workforce development officer's perceptions of the factors enhancing and inhibiting entrepreneurialism of community colleges in the Appalachian Region?

Number (n) Rural = 19 Number (n) Non-Rural = 14
Scale: 1 = Strongly Disagrees (SD); 2 = Disagrees (D); 3 = Agrees (A); 4 = Strongly Agrees (SA)

Research Question #2						
Rate the following statements concerning finance, entrepreneurial activities, and generating alternative revenue at your community college.	***Mean***	**Distribution** **1 SD** **2 D** **3 A** **4 SD**	**Percent Agree**	**Mode**	**Range**	***Standard Deviation***
College has experienced a reduction in State appropriations	3.61	2 = 2 3 = 9 4 = 22	94	4	2	.609
Importance of generating alternative revenue with entrepreneurial activities	3.52	1 = 1 3 = 13 4 = 19	97	4	3	.667
Entrepreneurial activities are supported by the college's strategic plan	3.33	2 = 2 3 = 18 4 = 13	94	3	2	.595
Number of industries in the service area limits the ability to offer contract training	2.45	1 = 2 2 = 17 3 = 11 4 = 3	42	3	3	.754
College culture reflects an entrepreneurial spirit	2.76	1 = 2 2 = 9 3 = 17 4 = 5	67	3	3	.792
College's relationship with state and local political leaders have had a positive effect on our ability to generate alternative revenues	3.15	2 = 6 3 = 16 4 = 11	88	3	2	.712
Physical location of the college impedes our ability to engage in workforce training.	2.27	1 = 4 2 = 19 3 = 7 4 = 8	30	2	3	.801
Physical location of college impedes our ability to engage in fundraising	2.18	1 = 5 2 = 19 3 = 9 4 = 1	30	2	3	.727

Research Questions #2						
Rate the importance of each of the factors affecting entrepreneurial activities at community colleges in the Appalachian Region	***Mean***	**Distribution** **1 SD** **2 D** **3 A** **4 SD**	**Percent Agree**	**Mode**	**Range**	***Standard Deviation***
Faculty efforts to obtain grants	3.27	1 = 2 2 = 5 3 = 8 4 = 18	78	4	3	.944
An entrepreneurial trained executive team	3.24	2 = 5 3 = 15 4 = 13	85	3	2	.708
Customized workforce training contracts	3.33	1 = 6 3 = 12 4 = 16	85	4	2	.736
Participation of members of the college's Board of Trustees	2.82	1 = 3 2 = 8 3 = 14 4 = 8	64	3	3	.917
A full time dedicated fundraiser	3.45	1 = 1 2 = 2 3 = 11 4 = 18	94	4	3	.754
A full time dedicated grant writer	3.67	1 = 1 2 = 2 3 = 4 4 = 26	91	4	3	.736
Telecommunications infrastructure	3.67	2 = 2 3 = 7 4 = 24	94	4	2	.595
Internet infrastructure	3.73	3 = 9 4 = 24	100	4	1	.452
Road and highway infrastructure	3.33	1 = 1 2 = 6 3 = 7 4 = 19	79	4	3	.890
Competition from for-profit educational organizations	2.64	1 = 1 2 = 15 3 = 12 4 = 5	51	2	3	.783
Active encouragement of the community college president	3.76	3 = 8 4 = 25	100	4	1	.435
Professional development in entrepreneurial activities for the community college's senior team	3.15	2 = 6 3 = 16 4 = 11	80	3	3	.712

APPENDIX M

RQ 3 SUMMARY TABLES

Research Question #3: Is there a statistically significant difference in the perceptions of presidents of rural community colleges in the Appalachian Region as compared to presidents of non-rural community colleges in the Appalachian Region?

Number (n) Presidents Rural = 24 Number (n) Presidents Non-Rural = 10
Scale: 1 = Strongly Disagrees (SD); 2 = Disagrees (D); 3 = Agrees (A); 4 = Strongly Agrees (SA)

Items 1-8								
Rate the following statements concerning finance, entrepreneurial activities, and generating alternative revenue	***Mean*** **Rural Non-Rural**	**Mode**	**Range**	***Mean SD***	**Standard Deviation** **Rural Non-Rural**	***t***	**df**	***Sig.* (2 tailed)**
College has experienced a reduction in State appropriations	3.54 3.70	4	3	.785	.884 .483	-0.531	32	.599
Importance of generating alternative revenue with entrepreneurial activities	3.33 3.20	4	3	.728	.702 .667	.557	32	.581
Entrepreneurial activities are supported by the college's strategic plan	3.42 3.30	3	2	.578	.584 .675	.508	32	.615
Number of industries in the service area limits the ability to offer contract training	2.75 2.00	3	3	.778	.794 .667	2.621	32	.013*
College culture reflects an entrepreneurial spirit	3.08 2.70	3	2	.501	.504 .615	1.828	32	.077
College's relationship with state and local political leaders have had a positive effect on our ability to generate alternative revenues	2.96 2.80	3	2	.610	.550 .919	.624	32	.537
Physical location of the college impedes our ability to engage in workforce training.	2.50 1.60	2[a]	3	.702	.722 .699	3.340	32	.002**
Physical location of college impedes our ability to engage in fundraising	2.29 1.60	2	3	.715	.806 .699	2.363	32	.024*

a: multiple modes exist, smallest shown
* $p < .05$
** $p < .001$

Research Questions #3								
Rate the importance of each of the factors affecting entrepreneurial activities at community colleges in the Appalachian Region	***Mean*** **Rural** **Non-Rural**	**Mode**	**Range**	***Mean SD***	***Standard Deviation*** **Rural** **Non-Rural**	***t***	**df**	***Sig.*** **(2 tailed)**
Faculty efforts to obtain grants	3.08 3.00	4	3	.947	.830 .816	.268	32	.790
An entrepreneurial trained executive team	3.42 3.50	3[a]	2	.623	.654 .789	.829	32	.413
Customized workforce training contracts	3.54 3.50	4	2	.592	.509 .707	.194	32	.848
Participation of members of the college's Board of Trustees	2.50 2.70	2	3	.870	.933 1.160	-0.531	32	.599
A full time dedicated fundraiser	3.17 3.50	4	3	.819	.816 .823	-1.125	32	.269
A full time dedicated grant writer	3.33 3.30	4	3	.827	.816 .823	.108	32	.915
Telecommunications infrastructure	3.46 3.50	4	2	.681	.658 .527	-0.177	32	.860
Internet infrastructure	3.75 3.60	4	1	.441	.442 .516	.859	32	.397
Road and highway infrastructure	3.30 3.00	4	2	.728	.702 .816	1.203	32	.238
Competition from for-profit educational organizations	2.50 2.70	2	3	.856	.933 .823	-0.588	32	.560
Active encouragement of the community college president	3.71 4.00	4	1	.465	.464 .000	-1.969	32	.058
Professional development in entrepreneurial activities for the community college's senior team	3.42 3.30	3	2	.638	.584 1.059	.414	32	.628

* $p < .05$
** $p < .001$

APPENDIX N

RQ 4 SUMMARY TABLES

Research Question #4: Is there a statistically significant difference in the perceptions of workforce development officers of rural community colleges in the Appalachian Region as compared to workforce development officers of non-rural community colleges in the Appalachian Region?

Number (n) Workforce Rural = 19 Number (n) Workforce Non-Rural = 14
Scale: 1 = Strongly Disagrees (SD); 2 = Disagrees (D); 3 = Agrees (A); 4 = Strongly Agrees (SA)

Items 1-8								
Rate the following statements concerning finance, entrepreneurial activities, and generating alternative revenue at your community college.	***Mean*** **Rural Non-Rural**	**Mode**	**Range**	***Mean SD***	***Standard Deviation*** **Rural Non-Rural**	***t***	**df**	***Sig.* (2 tailed)**
College has experienced a reduction in State appropriations	3.58 3.64	4	3	.783	.607 .633	-0.30	31	.771
Importance of generating alternative revenue with entrepreneurial activities	3.47 3.57	3	2	.629	.771 .514	-0.41	31	.684
Entrepreneurial activities are supported by the college's strategic plan	3.32 3.36	3	2	.604	.582 .633	-0.19	31	.847
Number of industries in the service area limits the ability to offer contract training	2.58 2.29	2	3	.825	.769 .726	1.11	31	.276
College culture reflects an entrepreneurial spirit	2.95 2.50	3	2	.577	.524 1.019	1.65	31	.110
College's relationship with state and local political leaders have had a positive effect on our ability to generate alternative revenues	3.26 3.00	3	3	.668	.653 .784	1.05	31	.302
Physical location of the college impedes our ability to engage in workforce training.	2.58 1.86	2[a]	3	.819	.642 .770	2.82	31	.008**
Physical location of college impedes our ability to engage in fundraising	2.27 1.93	2	3	.830	.597 .829	1.78	31	.086

a: multiple modes exist, smallest shown
* $p < .05$
** $p < .001$

Items 9-20								
Rate the importance of each of the factors affecting entrepreneurial activities at community colleges in the Appalachian Region	***Mean*** **Rural Non-Rural**	**Mode**	**Range**	***Mean SD***	***Standard Deviation*** **Rural Non-Rural**	***t***	***df***	***Sig.*** **(2 tailed)**
Faculty efforts to obtain grants	3.11 3.50	3	3	.814	1.100 .650	-1.19	31	.241
An entrepreneurial trained executive team	3.37 3.07	4	2	.691	.597 .829	1.19	31	.240
Customized workforce training contracts	3.37 3.29	4	2	.563	.684 .825	.32	31	.755
Participation of members of the college's Board of Trustees	2.84 2.79	2	3	.991	.765 1.122	.17	31	.865
A full time dedicated fundraiser	3.37 3.57	4	3	.790	.831 .646	-0.76	31	.453
A full time dedicated grant writer	3.63 3.71	4	3	.806	.831 .646	-0.32	31	.755
Telecommunications infrastructure	3.63 3.71	4	2	.615	.831 .611	-0.39	31	.700
Internet infrastructure	3.74 3.71	4	1	.462	.597 .611	.14	31	.890
Road and highway infrastructure	3.47 3.14	3[a]	2	.741	.452 .469	1.06	31	.298
Competition from for-profit educational organizations	2.47 2.36	3	3	.894	.772 1.027	-1.41	31	.168
Active encouragement of the community college president	3.68 3.86	4	1	.410	.478 .363	-1.13	31	.266
Professional development in entrepreneurial activities for the community college's senior team	3.16 3.14	4	3	.739	.688 .770	.06	31	.953

a: multiple modes exist, smallest shown

* $p < .05$

** $p < .001$

APPENDIX O

RQ 5 SUMMARY TABLES

Research Question #5: Is there a statistically significant difference in the perceptions of presidents of rural community colleges in the Appalachian Region as compared to workforce development officers of rural community colleges in the Appalachian Region?

Number (n) Presidents Rural = 24 Number (n) Workforce (WF) Rural = 18
Scale: 1 = Strongly Disagrees (SD); 2 = Disagrees (D); 3 = Agrees (A); 4 = Strongly Agrees (SA)

Items 1-8								
Rate the following statements concerning finance, entrepreneurial activities, and generating alternative revenue at your community college.	***Mean*** **President Workforce**	**Mode**	**Range**	***Mean SD***	***Standard Deviation*** **President Workforce**	***t***	***df***	***Sig.* (2 tailed)**
College has experienced a reduction in State appropriations	3.54 3.58	4	3	.765	.881 .607	-0.16	41	.876
Importance of generating alternative revenue with entrepreneurial activities	3.33 3.47	4	3	.728	.702 .772	-0.62	41	.537
Entrepreneurial activities are supported by the college's strategic plan	3.42 3.32	3	2	.578	.584 .582	.56	41	.576
Number of industries in the service area limits the ability to offer contract training	2.75 2.58	3	3	.778	.794 .769	.71	41	.481
College culture reflects an entrepreneurial spirit	3.08 2.95	3	2	.511	.504 .524	.86	41	.393
College's relationship with state and local political leaders have had a positive effect on our ability to generate alternative revenues	2.95 3.26	3	2	.610	.560 .653	-1.67	41	.113
Physical location of the college impedes our ability to engage in workforce training.	2.50 2.58	2[a]	3	.702	.772 .692	-0.36	41	.719
Physical location of college impedes our ability to engage in fundraising	2.29 2.37	2	3	.715	.806 .597	-0.35	41	.731

* $p < .05$
** $p < .001$

Research Questions #5								
Rate the importance of each of the factors affecting entrepreneurial activities at community colleges in the Appalachian Region	***Mean*** **President Workforce**	**Mode**	**Range**	***Mean SD***	***Standard Deviation*** **President Workforce**	***t***	***df***	***Sig*** **(2 tailed)**
Faculty efforts to obtain grants	3.08 3.14	4	3	.947	.830 1.100	-0.08	41	.941
An entrepreneurial trained executive team	3.42 3.37	3[a]	2	.623	.654 .597	.25	41	.804
Customized workforce training contracts	3.54 3.37	4	2	.592	.509 .684	.95	41	.346
Participation of members of the college's Board of Trustees	2.50 2.84	2	3	.870	.933 .765	-1.30	41	.204
A full time dedicated fundraiser	3.17 3.37	4	3	.819	.816 .831	-0.80	41	.429
A full time dedicated grant writer	3.33 3.63	4	3	.827	.816 .831	-1.18	41	.245
Telecommunications infrastructure	3.48 3.63	4	2	.631	.658 .597	-0.89	41	.377
Internet infrastructure	3.75 3.74	4	1	.441	.442 .452	.10	41	.924
Road and highway infrastructure	3.33 3.47	4	2	.728	.702 .772	-0.62	41	.537
Competition from for-profit educational organizations	2.50 2.47	2	3	.856	.933 .772	.10	41	.922
Active encouragement of the community college president	3.71 3.68	4	1	.465	. 464 .478	.17	41	.868
Professional development in entrepreneurial activities for the community college's senior team	3.42 3.16	3	2	.638	.584 .688	1.33	41	.190

a: multiple modes exist, smallest shown
* $p < .05$
** $p < .001$

APPENDIX P

RQ 6 SUMMARY TABLES

Research Question #6: Is there a statistically significant difference in the perceptions of presidents of non-rural community colleges in the Appalachian Region as compared to workforce development officers of non-rural community colleges in the Appalachian Region?

Number (n) Presidents Non-Rural = 10 Number (n) Workforce (WF) Non-Rural = 14
Scale: 1 = Strongly Disagrees (SD); 2 = Disagrees (D); 3 = Agrees (A); 4 = Strongly Agrees (SA)

Research Question #6								
Rate the following statements concerning finance, entrepreneurial activities, and generating alternative revenue at your community college.	***Mean*** **Presidents Workforce**	**Mode**	**Range**	***Mean SD***	***Standard Deviation*** **Presidents Workforce**	***t***	***df***	**Sig. (2 tailed)**
College has experienced a reduction in State appropriations	3.70 3.64	4	2	.565	.483 .633	.24	22	.813
Importance of generating alternative revenue with entrepreneurial activities	3.20 3.57	3	1	.504	.422 .514	-1.88	22	.074
Entrepreneurial activities are supported by the college's strategic plan	3.30 3.36	3	2	.637	.675 .633	-0.21	22	.834
Number of industries in the service area limits the ability to offer contract training	2.00 2.29	2	3	.702	.667 .726	-0.98	22	.337
College culture reflects an entrepreneurial spirit	2.70 2.50	2	3	.881	.675 1.019	.54	22	.595
College's relationship with state and local political leaders have had a positive effect on our ability to generate alternative revenues	2.80 3.00	3	3	.830	.919 .784	-0.57	22	.572
Physical location of the college impedes our ability to engage in workforce training.	1.60 1.86	2	3	.737	.699 .770	-0.84	22	.412
Physical location of college impedes our ability to engage in fundraising	1.60 1.93	2	3	.799	.699 .829	-1.02	22	.319

* $p < .05$
** $p < .001$

Research Questions #6								
Rate the importance of each of the factors affecting entrepreneurial activities at community colleges in the Appalachian Region	***Mean*** **Presidents** **Workforce**	**Mode**	**Range**	***Mean SD***	***Standard Deviation*** **Presidents** **Workforce**	***t***	***df***	***Sig.*** **(2 tailed)**
Faculty efforts to obtain grants	3.00 3.50	4	2	.751	.816 .650	-1.67	22	.109
An entrepreneurial trained executive team	3.20 3.07	3[a]	2	.797	.789 .829	.38	22	.706
Customized workforce training contracts	3.50 3.29	4	2	.770	.707 .825	.66	22	.513
Participation of members of the college's Board of Trustees	2.70 3.79	3	3	1.113	1.160 1.122	-0.18	22	.857
A full time dedicated fundraiser	3.50 3.57	2	2	.658	.707 .646	-0.26	22	.800
A full time dedicated grant writer	3.30 3.17	2	2	.721	.823 .611	-1.42	22	.170
Telecommunications infrastructure	3.50 3.71	2	2	.576	.527 .611	-0.90	22	.380
Internet infrastructure	3.60 3.71	1	1	.482	.516 .469	-0.57	22	.578
Road and highway infrastructure	3.00 3.14	3	3	.929	.816 1.027	-0.36	22	.719
Competition from for-profit educational organizations	2.70 2.86	3	3	.779	.823 .770	-0.48	22	.637
Active encouragement of the community college president	4.00 3.86	1	1	.282	.000 .363	1.24	22	.229
Professional development in entrepreneurial activities for the community college's senior team	3.30 3.14	3	3	.884	1.059 .770	.42	22	.677

* $p < .05$
** $p < .001$

APPENDIX Q

ENTREPRENEURIAL ACTIVITIES TABLES

Entrepreneurial Activities Used by Community College Presidents

Entrepreneurial Activity	Number Rural	Presidents Rural %	Number Non-Rural	Presidents Non-Rural %	% difference
Alumni		29		10	19
Capital Campaigns		57		80	23
Bookstore		50		40	10
Cafeteria		36		40	4
Contract Training		71		100	29
Grants		93		70	23
Individual Donor		71		80	9
Patents/Royalties		0		0	0
Rental Property		43		40	3
Sale of Property		14		20	6

Entrepreneurial Activities Used by Community College Workforce (WF) Development Officers

Entrepreneurial Activity	Number Rural	WF Rural %	Number Non-Rural	WF Non-Rural %	% difference
Alumni		32		57	25
Capital Campaigns		53		64	11
Bookstore		32		36	4
Cafeteria		21		21	0
Contract Training		84		64	20
Grants		90		100	10
Individual Donor		53		64	11
Patents/Royalties		5		0	5
Rental Property		16		29	13
Sale of Property		0		14	14