

Rowan University

Rowan Digital Works

Theses and Dissertations

5-27-2015

An exploration of the relationship between community college entrepreneurial orientation, enrollment management orientation, and performance

Bhavesh Bambhrolia

Follow this and additional works at: <https://rdw.rowan.edu/etd>



Part of the [Community College Education Administration Commons](#)

Recommended Citation

Bambhrolia, Bhavesh, "An exploration of the relationship between community college entrepreneurial orientation, enrollment management orientation, and performance" (2015). *Theses and Dissertations*. 464.

<https://rdw.rowan.edu/etd/464>

This Dissertation is brought to you for free and open access by Rowan Digital Works. It has been accepted for inclusion in Theses and Dissertations by an authorized administrator of Rowan Digital Works. For more information, please contact graduateresearch@rowan.edu.

**AN EXPLORATION OF THE RELATIONSHIP BETWEEN COMMUNITY
COLLEGE ENTREPRENEURIAL ORIENTATION, ENROLLMENT
MANAGEMENT ORIENTATION, AND PERFORMANCE**

by
Bhavesh B. Bambhrolia

A Dissertation

Submitted to the
Department of Educational Leadership
College of Education
In partial fulfillment of the requirement
For the degree of
Doctor of Education
at
Rowan University
May 13, 2015

Dissertation Chair: Ane Turner Johnson, Ph.D.

© 2015

Bhavesh Bambhrolia

Dedications

To my son Arin and my wife Savita, your encouragement kept me motivated.

To my Mom, Dad, and my in-laws Sunita and Baldev, your blessings carried me through the end.

To my grandparents, you instilled the value of education in our family. I love you, and I miss you.

Acknowledgements

I am very grateful to Dr. Ane Turner Johnson for serving as my dissertation chair, and being my compass during this eventful journey. She charted a rigorous course, but she was always available during the tense moments.

Very special thanks to...

Dr. Steven Phelan for serving as my dissertation committee member, and providing his expertise in entrepreneurialism and organizational performance.

Dr. Monica Reid Kerrigan for serving as my dissertation committee member and contributing her expertise on the topic of community college research.

Many thanks to...

Dr. Charles Vigue and Dr. Michael Rossi for nurturing my interest in research.

Dr. Omid Nodoushani for introducing me to academic research, and motivating me to enroll in a doctoral program.

Dr. Beatrice Jones and Debbie Allen for providing mentorship and allowing me to grow in enrollment management.

Dr. James Degnan, Dr. William N. Black, and Dr. Tingho Huang for offering valuable feedback and insight.

The community college presidents for their willingness to participate in this study.

Lastly, Amazon.com, your Prime service was a lifesaver during this journey. The books were available, arrived fast, and were not outrageously expensive.

Abstract

Bhavesh Bambhrolia

**AN EXPLORATION OF THE RELATIONSHIP BETWEEN COMMUNITY
COLLEGE ENTREPRENEURIAL ORIENTATION, ENROLLMENT
MANAGEMENT ORIENTATION, AND PERFORMANCE**

2015

Dr. Ane Turner Johnson

Doctor of Education

Community colleges are facing new economic realities in the midst of growing demand for accountability. To meet these challenges, college leaders take a strategic posture rooted in an entrepreneurial behavior. However, the relationship between entrepreneurialism and overall performance in a community college setting remained a gap in the existing body of literature. The purpose of this survey research was to explore the relationship between community college entrepreneurial orientation, enrollment management orientation, and performance. The study measured entrepreneurial orientation using a modified instrument, and enrollment management orientation was measured from a newly developed item set. Lastly, an objective measure of performance data were acquired from IPEDS. Study participants were community college presidents representing institutions from 39 states across the U.S. The findings suggest that entrepreneurial orientation is a significant predictor of enrollment management orientation. However, entrepreneurial orientation and enrollment management orientation were not significant predictors of objective performance. The implications for future research, policy, and practice are discussed.

Table of Contents

Abstract	v
List of Figures	x
List of Tables	xi
Chapter 1: Introduction	1
Community College	3
Market-Centric Community Colleges	4
Enrollment Management Subunits	6
Community College Performance	9
Entrepreneurial Orientation	10
Problem Statement	11
Purpose Statement	14
Research Questions	15
Key Terms	15
Conceptual Framework	16
Study Design	16
Theoretical Framework	17
Institutional Performance	18
Significance	19
Policy	19
Practice	20
Research	20
Limitations	21

Table of Contents (Continued)

Conclusion	22
Chapter 2: Literature Review	23
Entrepreneurial Orientation	23
Defining Entrepreneurial Orientation	24
EO and Firm Type	25
EO – Performance Relationship in Non-Profit	27
EO in Community College Context	29
Community College Performance.....	31
Conclusion	34
Chapter 3: Theory Development.....	35
EO in Community College.....	35
Community College Performance.....	37
Enrollment Management Orientation	39
Community College Subunits	44
Hypotheses	49
Methodology	50
Research Questions.....	51
Assumptions of and Rationale for the Study Design	51
Context for the Study	52
Sampling of Survey Respondents	52
Data Collection	53
Instrumentation	54

Table of Contents (Continued)

Questions and Scaling.....	57
Pilot Study.....	58
Control Variables	58
Data Analysis	59
Validity	60
Generalizability.....	62
Conclusion	62
Chapter 4: Results.....	64
Responses.....	64
Data Analysis	66
Results.....	68
Findings.....	72
EO - Performance	73
EO Sub-Dimensions - Performance.....	73
EMO - Performance	74
EO - EMO	75
Limitations of Analysis.....	76
Conclusion	77
Chapter 5: Discussion and Implications	78
Discussion.....	78
The Relationship Between EO and Performance.....	79
The Relationship Between EMO and Performance	80

Table of Contents (Continued)

Mediating EO and Performance.....	84
Subunit Analysis	85
Implications.....	86
Research.....	86
Practice.....	89
Policy	91
Significance.....	93
Next Steps.....	94
Conclusion	95
References.....	97
Appendix A: Variable Descriptions.....	110
Appendix B: IRB Approval Letter.....	120
Appendix C: Survey Instrument	121
Appendix D. Sample Invitation Email Text	127

List of Figures

Figure	Page
Figure 1. Participants and responses.....	64

List of Tables

Table	Page
Table 1. Descriptive statistics of EO sub-dimensions, EO, and EMO	67
Table 2. Descriptive statistics of performance metrics	67
Table 3. Pair-wise correlation estimates	69
Table 4. Results of regression analysis	71
Table 5. Summary of hypotheses test	72

Chapter 1

Introduction

A strong national economy requires a highly educated workforce to meet the challenges of a global marketplace. As the unemployment rate remains stagnant, employers seeking to fill existing positions are requiring applicants to have at minimum a higher education degree (Rothwell, 2012). Rothwell (2012) found that 43% of the job openings require at least a bachelor's degree in 100 metropolitan areas in the United States. Furthermore, Mathews (2013) observed that 65% of all jobs in the U.S. will require a postsecondary degree by the year 2020. Shortly after the 2008 recession, Porter (2008) proposed that the U.S. needed a national competitive strategy to meet the emerging economic challenges. With the growing number of individuals losing jobs and failing to find new ones (Rothwell, 2012), Porter (2008) stated that with "... insecurity and job turnover are higher than ever, the U.S. ... abdicated its responsibility to provide a credible transitional safety net for Americans..." (para. 18). By transitional safety net, Porter suggests that Americans should have access to quality education that provides the transition from one type of a career to another or the means of earning the credentials to enter the workforce. On the topic of degree attainment, a report by Lumina Foundation found that degree attainment remains a problem within the American higher education system and a threat to the economic recovery (Mathews, 2013). Rothwell (2012) noted that "Educational attainment makes workers more employable, creates demand for complementary less educated workers, and facilitates entrepreneurship" (p. 1). Citing the U.S. Census Bureau, Mathews (2013) found that 8.58% hold an associate degree, 19.30% hold a bachelor's degree, and 10.84% hold graduate or professional degrees

among residents ages 25-64, and according to the same report, the rate of degree attainment is insufficient to meet the national economic goals. However, with higher education institutions, more specifically community colleges, facing their own economic realities, can the institutional leaders strategically position their institution to meet the new challenges?

With the growing decline in public funding (Archibald & Feldman, 2008; D'Amico, Katsinas, & Friedel, 2012), community colleges have begun to behave more entrepreneurial to ensure that access to higher education remains at the forefront of the institutional mission (AACC, 2012b; Roueche & Jones, 2005). New partnerships, strategic alliances, outsourcing, market-centric programs, organizational restructuring, and leveraging tax-exempt status have come to define the recent entrepreneurial initiatives of the community colleges (Flannigan, Greene, & Jones, 2005). From this perspective, community college leaders argue that entrepreneurialism supports their institution's public mission (AACC, 2012b; Jaschik, 2012; Roueche & Jones, 2005), but no studies so far have linked the manifestation of entrepreneurial behavior to community college performance. Furthermore, some maintain that community colleges when engaging in market-like behavior erode the cultural values of knowledge as a public good (Kraatz, Ventresca, & Deng, 2010); whereas others demand greater accountability of community college performance (Lattimore, D'Amico, & Hancock, 2012; Neal, 2008; Roach, 2009; Zumeta, 2011).

Community college advocates have embraced non-financial performance measures of enrollment, retention, and graduation as accountability metrics (AACC, 2012c; Keeling, Wall, Underhile, & Dungy, 2008). Because of the growing external

demand for accountability from stakeholders and policymakers, the non-financial performance factors in the form of enrollment, retention, and graduation have emerged as national policy issues for community colleges (AACC, 2012c; Roach, 2009). For example, the American Graduation Initiative for community colleges seeks to "... launch new initiatives and reforms that will increase their effectiveness and impact by figuring out what works and what doesn't, modernize facilities, increase graduation rates, and expand and create new online learning opportunities..." (President Obama in Brandon, 2011) for adding 5 million new graduates to the workforce by 2020. In order to achieve the American Graduation Initiative agenda, O'Banion stated "The completion agenda [American Graduation Initiative] will not succeed without high quality programs in admission, orientation, assessment, placement, advising, registration, and financial aid- the territory for student services" (The SOURCE, 2011, p. 6). Since community college leaders have advocated entrepreneurial behavior to achieve institutional mission (Roueche & Jones, 2005), it is unclear if community college professionals whom O'Banion speaks of exhibit an entrepreneurial orientation (Lumpkin & Dess, 1996; Morris, Webb, & Franklin, 2011) that relate to meeting enrollment, retention, and graduation goals. The relationship between entrepreneurial orientation and community college performance remains a gap in research; however, it should be studied because community college performance has come to the forefront as a national policy issue.

Community College

From 1950 to present day, community colleges have grown from little over 330 to over 1,100 institutions. As of fall 2009, community colleges enrolled 8 million students in credit level programs (AACC, 2013a). Pertinent legislations of the 1960s provided the

fuel for the enrollment growth in community colleges (A. M. Cohen & Brawer, 2003). Under Title VI of the Civil Rights Act of 1964, federally funded higher education institutions could not discriminate student enrollment based on race, color, and national origin, thus opening the door to higher education for many of the underserved population.

Furthermore, the Higher Education Act of 1965 mandated the federal government to allocate tax dollars to fund the Title IV student aid program allowing lower income students to offset tuition cost (A. M. Cohen & Brawer, 2003). In addition, the Servicemen's Readjustment Act of 1966, commonly known as the G.I. Bill, mandated the Department of Defense to allocate tax dollars to fund educational needs of military veterans (Olson, 1973). With the availability of federal funds to offset the cost of college attendance, community colleges provided prospective students with the access to higher education. While some viewed student aid as an opportunity for many students to attend higher education institutions, others viewed it as a revenue generating scheme for the institution (Slaughter & Rhoades, 2004).

Market-Centric Community Colleges

Through the lens of academic capitalism, Slaughter and Rhoades (2004) observed that the colleges became market-centric when the policies favored the flow of federal funds directly to students. According to Slaughter and Rhoades (2004), academic capitalism refers to higher education institutions leveraging institutional resources to behave market-centric for the purposes of revenue generation. The Higher Education Act of 1965 (HEA) subsidized tuition with government funded grants and loans, and an amendment to HEA in 1972 established a new formula for allocating federal aid directly to the students. The amendment was significant for several reasons. First, the colleges

calculated federal student aid using a single formula provided within the legislation. Second, the amendment established additional funds in the form of grants allocated to students based on financial needs. Third, because the students are the direct recipients of federal student aid, they had the choice to use the aid at any college. With the choice of using federal student aid at any college, the colleges began to perceive the students as consumers of higher education. In light of this view on students as consumers, public higher education institutions began to leverage institutional resources to be more market-centric (Coomes, 2000; Hossler, 1984; Slaughter & Rhoades, 2004).

On the topic of market-centric behavior, some academicians (Clemetsen & Rhodes, 2009; A. M. Cohen & Brawer, 2003; Hossler, 1984; Kolti, 1993; Mars & Metcalf, 2009; Mellow & Heelan, 2008; Roueche & Jones, 2005; The SOURCE, 2011) argued that community colleges leverage institutional resources to fulfill its public mission of serving the educational needs of the students and the community. Kolti (1993) observed that community colleges leveraged the institutional program offerings in response to "... employment trends, employer needs ..." (p. 103) and noted a program on industrial model building offered by Northeast Wisconsin Technical College (NWTC) in response to industry needs as a success story because it transformed the state's economy. In other words, NWTC aligned its instructional program in accordance to the institutional mission. Others, however, describe community colleges leveraging institutional resources to be more entrepreneurial to contend with internal and external environments (Roueche & Jones, 2005). Wallace (2005) noted that a partnership between Florida Community College at Jacksonville (FCCJ) and Xerox Corporation led to the development of a new academic program to support digital printing technology. Another

program described by Wallace (2005), FCCJ partnered with the military to create a program to "... pursue training and education contracts aggressively with the U.S. military" (p. 16) for the purpose of generating profit. Pickleman (2005) discussed the entrepreneurialism in North Harris Montgomery Community College District (NHMCCD). NHMCCD purchased existing real-estate, and leveraged the revenues to fund "... professional development programs for the faculty" (p. 32). While the illustrations provided by Pickleman (2005) and Wallace (2005) demonstrated revenue increases from the market-centric practices, they do not link the entrepreneurial activity to non-financial performance metrics. Nonetheless, market-centric practices have been observed among enrollment management professionals (EMPs) who strategically align institutional resources to meet the non-financial organizational performance of enrollment, retention, and graduation (Bontrager & Pollock, 2009; Slaughter & Leslie, 2001).

Enrollment Management Subunits

Slaughter and Leslie (2001) observed market-centric practices in the student services area among enrollment management professionals. Kraatz et al. (2010) characterized enrollment management as an innovative structure that colleges adopted to consolidate "... administrative functions that have the potential to affect enrollments and tuition revenues" (p. 1524). With the expansion of the Title IV student aid program, colleges organized the enrollment management unit to "... sell higher education as product and service to students and parents ..." (Slaughter & Leslie, 2001, p. 157). From this perspective, enrollment management professionals operated as the sales unit (Kraatz et al., 2010) of the college, and received incentives for meeting the enrollment goal by

capitalizing on the federal student aid program. Furthermore, colleges raised tuition prices to benefit from the revenue generated from the student aid program and this practice viewed enrollment management units as profit-centric (Slaughter & Leslie, 2001).

However, others (Bontrager & Pollock, 2009; Clemetsen & Rhodes, 2009; Glenn, 2009; Hossler, 1984; Jonas & Popvics, 2000) linked enrollment management to student success and suggested that enrollment management professionals strategically align enrollment, academic, and institutional goals. In community college context, enrollment management professionals develop and carry out the strategic enrollment management (SEM) plan by leveraging the institutional resources to achieve "... mission-related goals ...[and] maximize student success" (Clemetsen & Rhodes, 2009, p. 15). Bontrager and Pollock (2009) defined strategic enrollment management as an institution-wide strategic "... concept and process that enables the fulfillment of institutional mission and students' educational goal" (p. 3). Clemetsen and Rhodes (2009) defined the context of institutional mission and educational goals as achieving the performance measures of enrollment, retention, and graduation.

Enrollment management professionals are top-level managers of various community college subunits which collectively form the enrollment management structure (Bontrager & Moore, 2009). The subunits within community colleges are part of the broader divisions of student affairs, academic affairs, and business affairs (Bontrager & Moore, 2009; Hossler, 1984). Academic affairs division within a community college is oriented with academic related matters. Organizational functions within community colleges such as development of courses, curriculum, academic

department management, faculty assignment, and academic program accreditation are examples of responsibilities and outcomes that fall within one or more academic affairs subunit. Student affairs division manages operations related to student enrollment and student activities. Admissions, student records and registration, and financial aid are the structured subunits within a student affairs division. Lastly, business affairs division deals with finance, facilities operations and other non-academic or non-student activities vital to institutional operation (A. M. Cohen & Brawer, 2003; Mellow & Heelan, 2008; Pollock, 2006).

Enrollment management professionals leverage their subunit by guiding the "... strategic efforts to improve and sustain student success..." (Clemetsen & Rhodes, 2009, p. 31), and the outcome of the planning process relates to the institutional performance measures (AACC, 2012c; Bontrager & Pollock, 2009; Clemetsen & Rhodes, 2009; Hossler, 1984; The SOURCE, 2011). To achieve the enrollment management goals, Black (2004), Dixon (1995) and Glenn (2009) suggested that community colleges may institute a centralized planning or a decentralized planning enrollment management structure; thereby suggesting the manner in which interaction occurs among the enrollment management subunits towards institutional planning. Prior research on subunit effectiveness suggests that a community college subunit that can address external or internal problems may have a stronger influence on overall organizational planning (Engelen, 2011; Pfeffer & Salancik, 1974). Therefore, the role of the community college subunit and the planning process of enrollment management professionals may have an effect on overall community college performance (Castrogiovanni, 1991; Engelen, 2011; Hitt, Ireland, Keats, & Vianna, 1983).

Community College Performance

On the topic of community college performance measures, Clemetsen (2009), Clemetsen and Rhodes (2009), and Mellow and Heelan (2008), maintained that measuring community college performance is complex and suggested that enrollment, retention, and graduation may not be sufficient indicators. (Clemetsen, 2009) suggested that strategy planning should be linked with academic units, and further noted that performance should include academic elements such as early alert systems, course scheduling, and co-curricular programs. Clemetsen and Rhodes (2009), and Mellow and Heelan (2008) suggested that community colleges serve multiple missions such that normative metrics may not fully inform the effectiveness of the institution to the community or the stakeholder. For example, one community college may enroll more underprepared students that may negatively influence its graduation rate. On the other hand, another community college may enroll more college ready students, but the overall population is smaller than other peer institutions.

Continuing on the topic of community college performance, Whissemore (2012) reported that community colleges are held to the same standards as four-year institutions. To address this issue, and to bring community college effectiveness to the forefront, the American Association of Community Colleges (AACC) has released the Voluntary Framework Accountability (VFA) that normalizes performance measures among community colleges (AACC, 2013b; Whissemore, 2012). In developing the VFA, AACC tested the performance metrics in a pilot study involving 58 community colleges (Dougherty, Hare, & Natow, 2009; Whissemore, 2012). AACC (2012c) described the performance metrics of VFA that "... can be used to provide accountability and to gauge

the effectiveness of community colleges in meeting their stated missions” (p. 5). In other words, the VFA encompasses the metrics to measure the multiple missions of community colleges.

To meet the performance metrics implies that community college leaders and managers engage in some form of strategy-making process (Miller, 1983). Furthermore, community college leaders agree that the institutions need to restructure their academic and student services subunits to be more effective, collaborative, and innovative (The SOURCE, 2011). According to Bontrager and Moore (2009), the community college leaders and managers responsible for strategy-making construct the enrollment management framework; therefore, suggesting that the strategy-making process of enrollment management professionals may relate to community college performance (Miller, 1983). However, no empirical research has studied this relationship in community college setting; researchers, however, have studied the relationship between strategy making and organizational performance by using the entrepreneurial orientation construct (Lumpkin & Dess, 1996; Miller, 1983; Morris et al., 2011).

Entrepreneurial Orientation

Entrepreneurial orientation (EO) is a firm level construct that measures the degree to which top-level managers engage in strategy-making process that entail risk-taking, proactiveness, innovativeness, competitiveness, and autonomy (Lumpkin & Dess, 1996; Miller, 1983; Morris et al., 2011). Entrepreneurial orientation has been studied widely in for-profit and non-profit organizations, and researchers have established the relationship between entrepreneurial orientation and organizational performance (Covin & Slevin, 1988; Lumpkin & Dess, 1996; Miller, 1983; Morris et al., 2011; Pearce II, Fritz, & Davis,

2010; Phelan, Johnson, & Semrau, 2013; Rauch, Wiklund, Lumpkin, & Frese, 2009). Miller (1983), for example, found support for EO-performance relationship in for-profit organizations where strategic planning coordination ranged from centralized to decentralized mechanism. In this study, performance measures were financial in nature. Other studies, however, have linked EO to non-financial performance indicators (Pearce II et al., 2010; Phelan et al., 2013).

Entrepreneurial orientation, rooted in the strategy-making process of top-level managers, has been established to relate to non-financial performance indicators. For example, Pearce II et al. (2010) found support for EO-performance relationship in a study of churches where performance indicators such as increase in church members and in donations from the congregation were measured. In another study, Phelan et al. (2013) found support for EO-performance relationship where performance metrics included both financial and non-financial indicators in education context. Since researchers have confirmed the relationship between EO and organizational performance in the non-profit setting, it is likely that community college leaders may exhibit an EO in the context of strategy-making process. Furthermore, since researchers have also indicated that both financial and non-financial performance indicators relate to EO, it is likely that performance indicators may relate to EO in community college settings. However, in community college context, the relationship between EO and performance measures has yet to be established thus, presenting a gap in EO-performance research.

Problem Statement

With the national economy still stagnant, employers are seeking to fill new positions with applicants holding higher education credentials (Rothwell, 2012).

Furthermore, as reported by Mathews (2013), future labor markets will increasingly demand applicants holding college degrees. This has placed higher education institutions in the forefront of economic recovery (Mathews, 2013; Rothwell, 2012). However, higher education institutions, more specifically community colleges, are faced with their own realities to meet the needs to support economic growth (Katsinas, Davis, Friedel, Kob, & Grant, 2013; Mathews, 2013; Rothwell, 2012). Community colleges are contending with declining public funds from the city, state, and federal sources; meeting the demand for new Title IV regulations; increased pressure to address accountability; containing the cost of college attendance; and competition for student enrollment while in pursuit of their social mission (Charles & Bruce, 2010; D'Amico et al., 2012; Dougherty et al., 2009; Katsinas et al., 2013). Community colleges have engaged in entrepreneurialism to respond to the changing market that they serve and to meet the demand for their services. New partnerships, strategic alliances, outsourcing, innovative programs, organizational restructuring, and leveraging their tax exempt status have come to define the innovative or entrepreneurial initiatives that community colleges engage in to maintain legitimacy to their stakeholders (Flannigan et al., 2005). One innovative organizational restructuring was the adoption of the enrollment management model in community colleges. Kraatz et al. (2010) found that colleges are more likely to adopt the enrollment management model when faced with structural problems that appear solvable by consolidating bureaucratic processes, but the unintended consequence was that it disrupted the social mission in favor for market-like practice. The enrollment management (EM) model converged administrative structures, subunits, and practices to manage the enrollment process to meet the market demand (Hossler, 1984; Huddleston,

2000). Because the current economic climate presents operational challenges for community colleges, risk-averse normative practices are acceptable in the strategy process to meet market demand (DiMaggio & Powell, 1983). Nonetheless, some community college enrollment management leaders may leverage the situation to pursue entrepreneurial opportunities in an effort to meet the performance demand (Bontrager & Pollock, 2009; Roueche & Jones, 2005). The problem, however, is that the manifestation of entrepreneurialism in the planning process within the enrollment management model and community college performance to meet the market demand remains empirically unexplored by scholars (Morris et al., 2011).

Research has shown enrollment management professionals have behaved in an entrepreneurial manner to contend with the internal and external environment (Roueche & Jones, 2005). Moreover, research has also shown that enrollment management professionals leverage their subunits in the context of strategy making (Bontrager & Moore, 2009; Hitt et al., 1983). Furthermore, subunit effectiveness has been linked to overall organizational performance (Carillo & Kopelman, 1991). Nevertheless, the relationship between the entrepreneurial orientation of enrollment management orientation and community college performance remains unclear. Therefore, the present study seeks to address the relationship between entrepreneurial orientation of enrollment management professionals in the context of strategy-making process and community college performance. Furthermore, the role of community college subunit was explored in this study in the context of EO-performance relationship.

Purpose Statement

The purpose of this quantitative survey research study was to explore the relationship between entrepreneurial orientation (Lumpkin & Dess, 1996; Morris et al., 2011) and community college performance (AACCC, 2013b; Dougherty et al., 2009; Morris et al., 2011). The independent variable in the study is entrepreneurial orientation, and the dependent variable is community college performance. Entrepreneurial orientation is an organizational level construct to measure risk-taking, proactiveness, innovativeness, competitiveness, and autonomy in the context of strategy-making process of top-level managers (Lumpkin & Dess, 1996; Miller, 1983; Morris et al., 2011). Community college performance is a measure of the institution's financial and non-financial metrics (AACCC, 2012c; Morris et al., 2011). Community college subunits are departments managed by enrollment management professionals who engage in strategy-making process to leverage the subunits to meet internal and external environmental needs (Bontrager & Moore, 2009; Castrogiovanni, 1991; Hitt et al., 1983).

The design of this study was a non-experimental cross-sectional survey research employing quantitative data analysis methods (Belli, 2009). A survey research involves selecting a specific sample population who provide data via a questionnaire so that a researcher can employ quantitative analysis to address the research question (Babbie, 1990). Using a purposeful sampling strategy (Onwuegbuzie & Collins, 2007), the study participants I selected were enrollment management professionals at community colleges located in the United States.

Research Questions

The overall goal of the study was to explain the relationship between entrepreneurial orientation and community college performance. The present study seeks to answer the following research questions:

1. What is the relationship between entrepreneurial orientation and community college performance?
2. What is the relationship between enrollment management orientation and community college performance?
3. To what extent does enrollment management orientation mediate the relationship between entrepreneurial orientation and community college performance?
4. To what extent does entrepreneurial orientation predict performance in the enrollment management dimensions managed by the community college subunits?

Key Terms

Below, I provide definition of key terms used throughout the study.

Entrepreneurial orientation- Entrepreneurial orientation (EO) is a firm level construct that measures the degree to which top-level managers engage in strategy-making processes that entail risk-taking, proactiveness, innovativeness, competitiveness, and autonomy (Lumpkin & Dess, 1996; Miller, 1983; Morris et al., 2011).

Community college performance- Community college performance is a measure of financial and non-financial indicators (AACC, 2013b; Dougherty et al., 2009; Morris et al., 2011).

Subunits- Subunits are a formal structure within an organization that serve a specific business function contributing to the overall organizational performance (Lawrence & Lorsch, 1967; Morgan, 1997; Stefanos, 2006).

Enrollment management- Enrollment management is a community college structure that brings together various subunits to achieve institutional mission (Bontrager & Moore, 2009; Pollock, 2006).

Enrollment management professionals- Enrollment management professionals are top-level managers of community college subunits who coordinate the planning activities to achieve enrollment management goals (Bontrager & Moore, 2009).

Conceptual Framework

Study Design

The present study drew on a post-positivist view of research design thereby utilizing a quantitative survey research methodology as the strategy of inquiry (Belli, 2009; Creswell, 2003; Ryan, 2006). Belli (2009) explains that quantitative research may be either experimental, or non-experimental. A non-experimental quantitative study involves the researcher to study the variables as they occur in the natural setting, and drawing on other sources for causal explanation such as a mediating or moderating variable (Belli, 2009). Thus, a non-experimental quantitative approach was appropriate because the goal was to explain the relationship between EO and community college performance without manipulating the measures of EO.

The purpose of my quantitative survey research (Babbie, 1990) study was to explain the relationship between entrepreneurial orientation (EO) and community college performance. Since variables were not manipulated, the research design for my

dissertation study was a non-experimental quantitative design (Belli, 2009). I collected primary data using a survey instrument, and acquired institutional performance metrics from secondary data source. I collected data at a single point in time from community college leaders, presidents and vice-presidents, employed at community colleges across the United States.

Theoretical Framework

I grounded my research in the theoretical framework of entrepreneurial orientation in non-profit context. Several researchers have studied entrepreneurial orientation (EO) in the for-profit sector (Chadwick, Barnett, & Dwyer, 2008; Covin, Green, & Slevin, 2006; Covin & Slevin, 1988, 1991; Entrialgo, Fernández, & Vázquez, 2000; Miles, Arnold, & Thompson, 1993; Miller, 1983), while other researchers have contextualized and argued the study of EO in non-profit setting (Morris et al., 2011; Pearce II et al., 2010). In the for-profit context, entrepreneurial orientation (EO) is the measure of autonomy, competitive aggressiveness, proactiveness, innovativeness, and risk-taking of "... processes, practices, and decision-making activities that lead to new entry." (Lumpkin & Dess, 1996, p. 136). In this sense, for-profits behave entrepreneurial to achieve economic dominance by increasing the market-share of their products and services into these new markets. While the entrepreneurial activities in a for-profit sector center around profit generation, the entrepreneurial activities in a non-profit sector are contextualized to the pursuit of a social mission that serves a social purpose (Morris et al., 2011). Morris et al. (2011) observed that since EO measures the degree to which an organization is "... entrepreneurial versus conservative and concerns how the firm's top managers support key entrepreneurial activities" (p. 956), researchers may measure EO in

non-profit context. Morris et al. (2011) conceptualized these dimensions of EO in non-profit context by arguing that "... motives, processes, and outcomes ..." (p. 496) are indicative of a social mission rather than profit motive.

Morris et al. (2011) provided a conceptual framework of innovativeness, proactiveness, and risk-taking as dimensions of EO in non-profit context. Innovativeness in the form of "Basic workflows, technologies, and job design ..." (p. 958) occurs when an opportunity arises to achieve greater "social returns" (p. 958), such as enrollment, retention, and graduation. Proactiveness refers to the non-profit organization's ability to sustain growth and enhance performance- financially and in pursuant to the social mission. Lastly, non-profit organizations engage in risk-taking when the activities greatly enhance the organization's ability to deliver the social services to more people who may benefit from the services.

Institutional Performance

Researchers have linked entrepreneurial orientation of non-profit organizations to the organizational performance. Rauch et al. (2009) established through meta-analysis that EO correlates to both financial and non-financial performance measures, and further argued that self-reporting of performance measures did not threaten the validity of the EO-performance relationship. In their study of EO in religious context, Pearce II et al. (2010) found a positive relationship between EO and organizational performance. Using the moderating-effects model for studying EO-performance relationship (Lumpkin & Dess, 1996), Pearce II et al. (2010) observed that EO and strategic planning "... helped religious congregations to improve their member attendance [non-financial] and contributions [financial]." (p. 236). Phelan et al. (2013) found support for EO-

performance relationship in education context, and the performance measures were No Child Left Behind scores, as well as financial measures.

Significance

The present study established the relationship between entrepreneurial orientation and enrollment management orientation. The significance of the study offered insight to future research, policy, and practice.

Policy

Higher education institutions play a vital role in sustaining economic growth in national, state, and local context (Mathews, 2013; Rothwell, 2012). Education attainment promotes entrepreneurship, and fosters competition in the labor market (Rothwell, 2012). However, current education policies force institutions to dedicate more resources to compliance rather than to pursue entrepreneurial opportunities to meet market demand (Katsinas et al., 2013). For example, Katsinas et al. (2013) found the new Title IV regulations negatively influenced enrollment in community colleges in Arkansas Mississippi, and Alabama. One financial administrator in the study commented "... financial aid administrators spend 90% of time working on compliance and regulation issues. If we could reduce those burdens, we could be in the field connecting with students and building relationships to achieve success" (p. 10). This suggests that institutions dedicate significant resources of a single community college subunit to regulatory compliance, and consequently, it may be diverting resources from other activities that may support degree attainment. Therefore, at the national level, higher education policymakers should support and promote policies that enable community

college leaders to engage in entrepreneurialism so the institutions can exceed performance demands such that it can significantly contribute to degree attainment.

Practice

Studies on the topic of entrepreneurial orientation have shown positive relationship between entrepreneurial orientation and performance in non-profit settings. While a normative approach may be a safe risk-averse approach to management practice in community colleges (DiMaggio & Powell, 1983), entrepreneurial managers contribute to a higher degree of institutional performance (Caree & Thurik, 2011). Community college presidents will find it noteworthy that promoting entrepreneurial behavior among enrollment management professionals may have positive influence on institutional performance measures. Colleges that exhibit higher degree of performance demonstrate their managerial strengths to their internal and external stakeholders (AACCC, 2012c). Therefore, community college presidents can advance the management capacity of enrollment management professionals by legitimizing entrepreneurial behavior as a management practice through establishment of an entrepreneurship development program (Entrialgo et al., 2000).

Research

The present study provided the groundwork for future research on the topic of entrepreneurial orientation in higher education. Although this study applied the EO construct to enrollment management professionals in community college context, other studies can apply EO to faculty or to the whole institution (George & Marino, 2011), and study its relationship to organizational performance.

I limited the study sites for the present to community colleges, and enrollment management professionals as study participants. Because I have established the framework to apply EO-performance relationship in community college context, future research may entail replicating the methodology to include four-year institutions. The subsequent research involving other higher education institutions will add to the validity of the survey instrument and provide strength to EO-performance relationships (Babbie, 1990).

Limitations

I approached this study as a dissertation, thus, limiting the scope of the research by study sites and participants. First, I selected community colleges as study sites. While other studies on EO limited study participants to a single top-level manager (Lumpkin & Dess, 1996; Miller, 1983; Morris et al., 2011; Pearce II et al., 2010), my study expanded the scope where study participants are concerned. Within the study sites, I selected enrollment management professionals as the study participants. Multiple participants were identified based on job title.

Next, data collection for the study was limited to a modified survey instrument that I developed based on prior studies (Pearce II et al., 2010; Phelan et al., 2013). Using modified instruments present several challenges in survey research. First, I addressed the instrument validity by pilot testing the instrument with subject matter experts. Second, I assessed the construct validity by applying statistical tests. Lastly, participants may respond to the survey questions that may be more favorable to them (Phillips & Clancy, 1972). However, the nature of a post-positivist view of research is to accept the data as it occurs in the natural world, but acknowledge the limitations (Belli, 2009; Ryan, 2006).

Lastly, maximizing the response was another limitation to the study. Craig and McCann (1978) found item response rate varies based on the question type, number of questions, and the response expected for an item when researchers administer surveys by mail. In an effort to improve the response rate, I designed a web-based system to help facilitate data collection while reducing data entry required by the participants. Using a web-based system offered many advantages such as ease of access to the instrument, real-time data collection, response rate tracking, lower cost of administration, and flexibility in designing complex questions (Fink, 2009). Although using the web-based system provided many benefits, data analysis was limited to the participant's response (Dillman, Smyth, & Christian, 2008).

Conclusion

This dissertation is organized into five chapters. Chapter 1 introduced the topic of entrepreneurialism in community colleges and presented the purpose of the research, research questions, significance of the study, and the study limitations. Chapter 2 of this study provided a review of the literature on topics of entrepreneurial orientation and community college performance. Chapter 3 provided a theoretical framework for the study, hypotheses, and the methodology for the study. In addition, Chapter 3 discussed the study site selection, participant selection, instrument design, a description of the methods of data collection, data analysis, and validity. Chapter 4 presented the results and the findings, and Chapter 5 concluded with the discussion, and the next steps.

Chapter 2

Literature Review

A literature review in a quantitative study entails a thorough review of the independent variables and the dependent variables of the study (Creswell, 2003). The independent variable in this study is entrepreneurial orientation (EO) (Morris et al., 2011) and the dependent variable is the non-financial community college performance measure (AACC, 2013b; Dougherty et al., 2009). Because I utilized the manuscript option for my dissertation, this chapter presents an abridged literature review of entrepreneurial orientation and community college performance.

The design of this chapter is as follows. First, I discuss entrepreneurial orientation in more detail. The EO section emphasizes the definition of entrepreneurial orientation, and the relationship of EO and organizational performance. The section concludes with a synthesis of applying EO to enrollment management professionals in community colleges. Next, I present the literature review on community college performance. This section presents the controversy on specific measures of community college performance.

Entrepreneurial Orientation

The essence of entrepreneurial behavior is the proclivity for capitalizing on an opportunity that leads to the creation of a new product or service (Sarasvathy, Dew, Velamuri, & Venkataraman, 2011). Sarasvathy et al. (2011) observed that an "... entrepreneurial opportunity ... consists of a set of ideas, beliefs, and actions that enable the creation of future goods and service in the absence of current markets for them ...” (p. 79). In other words, managers must recognize the value of the new idea, envision the

end goal for the new idea, and take actions to achieve the end goals. Value, in the context of entrepreneurial opportunity, could be economic in nature or a social good (Mellow & Heelan, 2008; Sarasvathy et al., 2011). In a community college context, one might observe entrepreneurial opportunity as pursuing a new market for enrolling students or leveraging technology to develop a student retention program. Moreover, the entrepreneurial opportunities pursued to achieve the end goal— the social mission of the institution— will be evident in the strategy-making process of enrollment management professionals (Bontrager & Pollock, 2009; Lumpkin & Dess, 1996; Mellow & Heelan, 2008; Sarasvathy et al., 2011). To that end, enrollment management professionals may exhibit entrepreneurial behavior in their strategy-making process (Lumpkin & Dess, 1996). Lumpkin and Dess (1996) observed that the entrepreneurial orientation construct of top managers, rooted in the strategy-making process, measures their propensity for entrepreneurial behavior. Therefore, applying the entrepreneurial orientation construct to enrollment management professionals in community colleges will provide an insight into their strategy-making process.

Defining Entrepreneurial Orientation

Entrepreneurial orientation is a firm level construct applied to top-level managers (Lumpkin & Dess, 1996) “... for capturing evidence of entrepreneurial decision process ...” (Lumpkin, Moss, Gras, Kato, & Amezcua, 2013, p. 769). Lumpkin et al. (2013) describes entrepreneurial decision processes as “ ... a diverse set of activities which include planning, analysis, and decision-making that organizations rely on ...” (p. 769) to achieve the organizational performance measures. The entrepreneurial orientation construct consists of measuring the dimensions of innovativeness, proactiveness, risk-

taking, autonomy, and competitive aggressiveness using a Likert scale instrument (Lumpkin & Dess, 1996). Miller (1983) defined entrepreneurial orientation as a measure of the extent to which an organization engages in proactiveness, innovativeness, and risk-taking as components of entrepreneurial activities. Researchers have studied entrepreneurial orientation of organizations in for-profit settings (Covin et al., 2006; Lumpkin & Dess, 1996; Miller, 1983) and non-profit settings (Lumpkin et al., 2013; Morris et al., 2011; Pearce II et al., 2010) and linked EO to organizational performance.

Organizations that exhibit innovativeness will support strategy-making processes that lead to "... new products, services, or technological processes ..." (Lumpkin & Dess, 1996, p. 142). Proactiveness is the tendency to stay ahead in the market by offering new products or services, while sunsetting antiquated products or services. Risk-taking demonstrates the organization's commitment to capitalize on market opportunities by incurring debt or resource allocation. Autonomy refers to the ability of the organization to allow an individual or a team to conceptualize and bring to life a new idea. Lastly, competitive aggressiveness is the firm's willingness to exploit weakness among the rivals and to outperform the key competitors in the marketplace (Lumpkin & Dess, 1996).

EO and Firm Type

In a survey study of 52 firms, Miller (1983) concluded that the correlation between innovativeness, risk-taking, and proactiveness is the degree to which an organization is entrepreneurial. Miller (1983) suggested that there exists a relationship between organizational typology and entrepreneurship. Miller (1983) posited that typology of firms can be "empirically validated" (p. 772), link strategy making with organizational structure and environmental variables, and show relationship to

entrepreneurship. Furthermore, drawing on the shortcomings of Mintzberg's organizational typology, Miller (1983) argued that to study entrepreneurship in organizations, the findings must be empirically sound. In other words, in the study of entrepreneurial behavior in organizations, the manifestation of entrepreneurial behavior should be quantifiable.

The three types of firms that Miller (1983) discussed in the study were simple firms, planning firms, and organic firms. Miller characterized a simple firm as having centralized power that belongs to the owner, and strategy making is "... intuitive rather than analytical ..." (p. 772). The primary driver of entrepreneurship of a simple firm is oriented around leadership characteristics. A planning firm operates using a sophisticated control and planning mechanisms to ensure efficiency in the planning process so that it is proactive when it comes to contending with external uncertainties. Thus, the entrepreneurial activity of a planning firm is the function of strategy making. Miller described organic firms as dynamic and ready to respond to changes brought about by external environmental factors. Organic firms are capable of responding to the external environment because of its decentralized power structure, highly collaborative departmental structure, and knowledge sharing among its technical human resources. The entrepreneurial behavior of an organic firm is evident in its ability to meet "... the demands of their environment and the capacities of their structure ..." (Miller, 1983, p. 775). Subsequent research on the topic of entrepreneurial orientation further advanced the conceptual framework posited by Miller (1983).

EO – Performance Relationship in Non-Profit

While Miller (1983) found EO correlated with firm type, other researchers have linked entrepreneurial orientation to organizational performance in the for-profit setting and the non-profit setting (Dess, Pinkham, & Yang, 2011; Pearce II et al., 2010; Rauch et al., 2009; Yongbin, Yuan, Soo Hoon, & Long Bo, 2011). A meta-analysis by Rauch et al. (2009) offered insight to the entrepreneurial orientation and organizational performance relationship. Rauch et al. (2009) argued that EO-performance relationship is likely due to the competitive nature of an organization that is willing to enter new markets or introduce new products or services before the rivals. Although every study reviewed illustrated some degree of EO-performance relationship, Rauch et al. (2009) observed that organizations that exhibited higher level of EO related to higher level of organizational performance.

On the topic of reporting organizational performance, Rauch et al. (2009) noted that study participants reported performance in the form of self-reported financial, self-reported non-financial, or archival financial. Furthermore, Rauch et al. (2009) found no significant variation in EO-performance relationship when performance was reported using the self-reported or archival method. However, Rauch et al. (2009) noted that the EO-performance relationship will be stronger with financial data than non-financial data. This difference was attributed to non-financial outcome and may be indirectly linked to the financial performance of the organization (Rauch et al., 2009). For example, a positive perception of the organization may lead to customer loyalty; this, in return, leads to increased sales (Rauch et al., 2009).

In their analysis on the use of EO-performance relationship, Rauch et al. (2009) observed that researchers applied the EO construct as either a formative model or a reflective model (George & Marino, 2011). The reflective model entails defining EO as the aggregate of the EO dimensions and they will covary. A formative model views the EO dimension independently for defining the overall EO, and in this model, the EO dimensions may or may not covary (George & Marino, 2011). George and Marino (2011) argued that an organization exhibits an entrepreneurial orientation when the strategy-making process reflects the EO dimensions rather than the manifestation of EO to inform the organization's strategy-making process. In other words, an organization's strategy-making process is not the result of an entrepreneurial orientation; but an organization's strategy-making process shows evidence of an entrepreneurial orientation.

While Rauch et al. (2009) did not argue for a particular EO model, George and Marino (2011) posited that a reflective model was shown more to be empirically sound than the formative model when accounting for an internal validity test. George and Marino (2011) argued that the use of Cronbach's alpha to measure internal validity suggests that each instrument item measures a single concept as manifested in the reflective model. Furthermore, aggregating the dimensions to measure the EO construct implies defining EO from the view of the reflective model. Regardless of the EO model employed in a study, Morris et al. (2011) argued that to get an accurate assessment of EO, researchers must contextualize the construct.

Returning to the discussion of EO construct validity, Rauch et al. (2009) observed little difference between EO-perceived financial performance, EO-non-financial performance, and EO-archival performance regardless of the EO model employed in the

study. Moreover, self-reported non-financial performance measures did not threaten the validity or the integrity of EO-performance relationship (Rauch et al., 2009). Therefore, the suggestion is that EO will correlate with self-reported non-financial data when the EO construct is applied as a reflective model (George & Marino, 2011; Rauch et al., 2009).

EO in Community College Context

A literature search revealed that only one study examined entrepreneurial orientation in the community college setting (Schiefen, 2010). The study by Schiefen (2010) applied entrepreneurial orientation and the five dimensions of EO (Lumpkin & Dess, 1996) as theoretical constructs observed in a qualitative grounded theory research methodology. While significant research utilizing entrepreneurial orientation were quantitative studies (Rauch et al., 2009), Miller (2011) posited that the use of entrepreneurial orientation in qualitative studies and in various organizational context is necessary to advance the research on entrepreneurial orientation. Furthermore, Miller (2011) stated that researchers "... may study EO within a carefully defined industry context ... or compare EO across different but again well-defined [industry] types ...". Miller (2011, p. 881). To that end, a review of literature on EO in non-profit context provided the theoretical framework for synthesizing an EO scale suited for the community college setting where top managers are enrollment management professionals (Bontrager & Moore, 2009; Miller, 2011; Morris et al., 2011).

Whereas Lumpkin and Dess (1996) contextualized the five dimensions of EO for the for-profit setting, Morris et al. (2011) synthesized the EO dimensions of innovativeness, proactiveness, and risk-taking for the non-profit organizations, such as higher education. While profit generation is significant to entrepreneurial activities of

market-centric organizations, the entrepreneurial activities gravitate towards the social mission of the organization in a non-profit setting. In framing the manifestation of entrepreneurial activities in a non-profit setting, Morris et al. (2011) argued that motivation, processes, and outcome differ in non-profit context than in for-profit context. The motivation for non-profit organizations to pursue entrepreneurial opportunities entails strategies that serve the social mission and lead to financial sustainability (Morris, Coombes, Schindehutte, & Allen, 2007; Sarasvathy et al., 2011).

Since community colleges are driven by their mission to provide access to higher education to any students who may benefit (Mellow & Heelan, 2008), the enrollment management professionals may pursue novel strategies that provide more students access to their institution (Bontrager & Pollock, 2009; Clemetsen & Rhodes, 2009). By increasing student enrollment, the enrollment management strategies employed by community college leaders contribute to the financial sustainability of community colleges (Hossler, 1984; Slaughter & Leslie, 2001). Processes in the non-profit context centers on "... the social mission and ways to enhance delivery of the core services or functions ...” (Morris et al., 2011, p. 952).

Enrollment management professionals in community colleges leverage organizational resources that improve access to their institutions, improve enrolled students' ability to meet their educational goals, and develop innovative methods to retain students (Bontrager & Moore, 2009; Hossler, 1984; Mellow & Heelan, 2008). Morris et al. (2011) suggested that non-profits measure organizational performance using financial and non-financial indicators. While enrollment management professionals are concerned with generating revenue for sustaining the institution's ability to fund the social mission,

non-financial performance measures such as enrollment, retention and graduation rates as measures of community college performance may satisfy key stakeholders (AACC, 2012c; Bontrager & Pollock, 2009; Hossler, 1984; Morris et al., 2011).

Community College Performance

Researchers have established the relationship between entrepreneurial orientation and organizational performance in non-profit setting (Lumpkin et al., 2013; Morris et al., 2007; Morris et al., 2011; Pearce II et al., 2010) and in for-profit setting (George & Marino, 2011; Lumpkin & Dess, 1996; Rauch et al., 2009). Organizational performance measures in a non-profit context have been either financial or non-financial (Morris et al., 2011; Rauch et al., 2009). However, the use of non-financial performance measures in a community college context remains a controversial topic.

Community college leaders and researchers (Clemetsen & Rhodes, 2009; A. M. Cohen & Brawer, 2003; Mellow & Heelan, 2008; The SOURCE, 2011) argue that measuring community college performance in the form of enrollment, retention rate, and graduation rate is inadequate because community colleges have multiple missions. The multiple missions refer to the essence of community colleges serving the educational needs of the community where student retention and graduation rates may not be the desired outcome for the student (Mellow & Heelan, 2008). It is pertinent to the community college mission to maintain an open-door enrollment to permit prospective students access to the institution for higher education needs (A. M. Cohen & Brawer, 2003; Mellow & Heelan, 2008).

In some cases, community college leaders have leveraged institutional resources to form partnerships with various organizations within the community to fulfill the needs

of the community as well as the financial needs of the institution (Pickleman, 2005; Wallace, 2005). In other cases, Kolti (1993) observed that community colleges have implemented unique academic programs to meet the needs of a specific industry within the community. Moreover, community colleges designed additional academic programs that allow students to transfer to four-year degree granting institutions. From a students' perspective, Clemetsen and Rhodes (2009) noted that students may enroll in community colleges to assess the "... viability of their post-secondary goals ..." (p. 17), thus suggesting that retention and graduation rate may be a misleading indicator of institutional performance. Although these illustrations in the literature exemplify the various avenues taken by community college leaders to address the social mission, they suggest that community college performance is contextual to the strategies employed to accomplish the mission.

However, the national higher education performance measuring system, Integrated Postsecondary Education Data System (IPEDS), does not account for the multiple purposes that community colleges serve (Boggs, 2009). Moreover, IPEDS does not account for the various student outcomes, such as transient student enrollment or non-degree seeking students enrolling for personal enrichment (Boggs, 2009). Boggs (2009) observed that while IPEDS measures enrollment and graduation rates, students who transfer to a four-year institution are reflected in the institution's drop-out rate. Because of the various enrollment patterns of community college students, and the lack of a performance measuring system that accounts for the various outcomes, the American Association of Community Colleges (AACC) has implemented the Voluntary Framework of Accountability (VFA) (AACC, 2012b, 2012c; Whissemore, 2012).

On the topic of developing the VFA, Dougherty et al. (2009) provided several insights that shed light on the characteristics of community college performance measures. First, the input indicators should measure the characteristics of students enrolled at the college. Second, the process indicators should reflect the students' ability to access diverse academic program offerings. Finally, the outcome indicators should measure the students' desired educational goal. Dougherty et al. (2009) argued that any community college performance should account for these indicators to provide a complete picture of the community college's advancement towards its social mission. With the release of the recent VFA metrics manual (AACC, 2013b), one can note that the reporting requirements support the input, process, and outcome indicators suggested by Dougherty et al. (2009). Among other performance indicators such as transfer rate, GED enrollment, and developmental educational enrollment, American Association of Community Colleges' Voluntary Framework of Accountability includes enrollment, retention, and graduation rates as non-financial community college performance measures. Since community college are members of AACC (AACC, 2012a), the uniformity of reporting validates the use of enrollment, retention, and graduation rates as the non-financial community colleges performance measures to study the relationship between EO and performance in community college context (Lumpkin et al., 2013; Morris et al., 2011). Because community college performance is a national policy issue (Mathews, 2013; Rothwell, 2012), the present study provides insight on the planning process of community college leadership and its relationship to institutional performance.

Conclusion

While the EO construct has yet to be applied in community college context, Morris et al. (2011) provided a conceptual framework for applying EO in non-profit setting, such as community colleges. In a community college context, the interpretation of the entrepreneurial orientation dimensions will differ from the for-profit setting because the community colleges' mission is to serve the societal needs, and revenue generation is intended for advancing the social mission, not for distribution as profit (Morris et al., 2011). Since the purpose of a community college is to meet the educational needs of the society, college leaders are likely to engage in a strategy-making process to achieve the social mission of their institutions (Pearce II et al., 2010; Roueche & Jones, 2005).

Engaging in strategic planning ensures that the institution leverages resources to meet the goals of the social mission. To that end, enrollment management professionals— top managers in various academic and student affairs departments (Hossler, 1984)— play the key role in the institutional strategy-making process (Bontrager & Moore, 2009). Therefore, enrollment management professionals will exhibit an entrepreneurial orientation that may be apparent when planning strategic processes to meet the institution's social mission (Bontrager & Moore, 2009; Morris et al., 2011).

Chapter 3

Theory Development

In this chapter, I provide the overall theory and an overview of the methodology for the study. I begin with a theoretical framework on the relationship between entrepreneurial orientation and performance. Following theory development, I discuss my research methodology. In the methodology section, I address assumption, study context, sampling strategy, instrumentation, data analysis, and validity.

In the theory development sections that follow, I note the propositions that will lead to the hypotheses. The theory development begins with conceptualizing EO in community college context. Next, I present a review of literature to conceptualize the role of enrollment management as a mediating factor. The theory development section concludes with a rationale for financial and non-financial indicators as community college performance measures.

EO in Community College

Prior research on EO in non-profit organizations (Davis, Marino, Aaron, & Tolbert, 2011; Pearce II et al., 2010; Phelan et al., 2013) suggests community colleges should exhibit an entrepreneurial orientation rooted in the institutional strategy-making process (Lumpkin & Dess, 1996; Miller, 1983). While the for-profit organizations engage in entrepreneurial activities for profit motives, non-profit organizations engage in the strategy-making process to serve the public mission, as well as acquiring financial resources to fund the public mission (Morris et al., 2011). Morris et al. (2011) posited that the disposition towards entrepreneurialism in community colleges is the result of the institutional motives, processes and outcomes. Motivation for community colleges to

engage in entrepreneurialism may be mission orientated of serving the educational needs of the community. To achieve the institutional social mission, community colleges employ various processes that lead to revenue generation or operational cost savings. Community colleges can measure the social outcomes as increases in revenue, enrollment, retention, or graduation.

Studies on entrepreneurialism in community colleges suggest that institutional motives, process, and outcomes differ among institutions. In a mixed-methods study on entrepreneurial community college presidents, Esters, McPhail, Singh, and Sygielski (2008) observed that the study participants exhibited an entrepreneurial orientation to meet financial and non-financial outcomes. From the study, one can glean that it illustrated community college presidents expressed entrepreneurial behavior specific to institutional motives (Morris et al., 2011). To illustrate this point, one study participant in Esters et al. (2008) started an entrepreneurship fund to foster an entrepreneurial culture. Employees within the college leveraged the fund to start a distance-learning program. According to Esters et al. (2008), the president of the college reported an increase in enrollment by 20%, and the program generated a profit. From this example, one can observe that the motive for the initiative was to institute internal culture change by implementing an entrepreneurial fund as the process. The outcome, as indicated by the participant, resulted in enrollment increase and revenue increase.

Furthermore, Esters et al. (2008) observed other participants applied innovative approaches to increase enrollment at their institution in response to external demands. According to Esters et al. (2008), one president at the institution achieved the outcome of an increase in the enrollment by merging the operation of credit and non-credit program

offerings. Another president in the study indicated that the institution leveraged curriculum offering to increase enrollment, and achieved this by revamping the process to establish new curricula. Both presidents in the study suggested that the primary motive for entrepreneurial activity was in response to the external environment, but changes to the internal environment were the key drivers for the outcome. Although Esters et al. (2008) set out to explore the entrepreneurial characteristics of community college presidents, the qualitative narratives offered insight on the motives, process, and outcomes related to their entrepreneurial activities.

Entrepreneurial activities of the community colleges illustrated in the preceding narrative suggest community college leaders engaged in a strategy-making process to achieve the desired outcome (Lumpkin & Dess, 1996; Morris et al., 2011). Furthermore, the narratives illustrate that the strategic posturing of the community college leaders was adopted to meet internal and external environmental needs unique to the institution (Pearce II et al., 2010). To respond to the internal and external demands, the college presidents engaged in entrepreneurial behavior, thereby suggesting that community colleges exhibit an EO (Morris et al., 2011; Roueche & Jones, 2005).

Community College Performance

Researchers statistically confirmed an EO-performance relationship in prior studies on EO in a non-profit context (Pearce II et al., 2010; Phelan et al., 2013). In a study on the relationship between EO-performance in a religious context, Pearce II et al. (2010) measured performance as the increase in church congregation and donations given to the church by the congregation. To measure K-12 school performance, Phelan et al. (2013) used NCLB data, as well as self-reported data on "... curricular innovation,

teacher retention, extracurricular activities and fund raising” (p. 8). Both studies indicate that EO-performance relationship exists whether performance is measured as financial or non-financial metrics.

Performance measures of community colleges consist of financial and non-financial indicators. Morris et al. (2011) posited that in the non-profit context, performance is the outcome of the organization’s social mission. The social mission of community colleges entail ensuring that the colleges maintain open-door access to higher education opportunities to all students (A. M. Cohen & Brawer, 2003; Mellow & Heelan, 2008).

On the topic of community college performance measures, Clemetsen (2009), Clemetsen and Rhodes (2009), and Mellow and Heelan (2008), maintained that measuring community college performance is complex and suggested that enrollment, retention, and graduation may not be sufficient indicators. Clemetsen (2009) suggested that strategic planning should be linked with academic units, and further noted that the performance metrics should include academic elements such as early alert systems, course scheduling, and co-curricular programs. Clemetsen and Rhodes (2009), and Mellow and Heelan (2008) suggested that community colleges serve multiple missions such that normative metrics may not fully inform the effectiveness of the institution to the community or the stakeholders. For example, one community college may enroll more underprepared students that may negatively influence its graduation rate. On the other hand, another community college may enroll more college ready students, but the overall population is smaller than other peer institutions.

The American Association of Community Colleges (AACC) developed performance metrics specifically for community colleges to address the disparate views of community college performance. AACC (2012c) described the performance metrics of VFA "... can be used to provide accountability and to gauge the effectiveness of community colleges in meeting their stated missions" (p. 5). In other words, the VFA encompasses the metrics to measure the multiple missions of community colleges. However, because of the nascent nature of VFA, and since the data are not yet available, the present study utilized the performance measures reported to IPEDS.

For the purpose of this study, non-financial performance metrics included enrollment counted as full-time equivalent (FTE), part-time and full-time retention rates, and graduation rates measured as 100%, 150%, and 200% relative to the normal time. For the purpose of graduation rates, normal time is defined as completing the degree in two years. Financial performance metrics include tuition and fees, and other sources of revenue measured as per FTE.

Proposition 1: A positive EO-performance relationship will exist in community college setting.

This proposition contributes to the study of entrepreneurial orientation in the non-profit context. More specifically, this study will apply quantitative measures (Pearce II et al., 2010; Phelan et al., 2013) to study entrepreneurial orientation in higher education context.

Enrollment Management Orientation

An enrollment management orientation (EMO) is a set of behavior exhibited by community college leaders through the strategy and planning process for meeting

institutional enrollment goals. Community college leaders leverage technical, financial, and human resources to improve access to their institutions, improve enrolled students' abilities to meet their educational goals, and develop innovative methods to retain students (Bontrager & Moore, 2009; Hossler, 1984; Mellow & Heelan, 2008).

Community college leaders are top-level managers of various community college subunits (Bontrager & Moore, 2009). The subunits within community colleges are part of the broader divisions of student affairs, academic affairs, and business affairs (Bontrager & Moore, 2009; Hossler, 1984). Academic affairs division within a community college is oriented with academic related matters. Organizational functions within community colleges such as development of courses, curriculum, academic department management, faculty assignment, and academic program accreditation are examples of responsibilities and outcomes that fall within one or more academic affairs subunit. Student affairs division manages operations related to student enrollment and student activities. Admissions, student records and registration, and financial aid are structured subunits within the student affairs division. Lastly, business affairs division deals with finance, facilities operations and other non-academic or non-student activities vital to institutional operation (A. M. Cohen & Brawer, 2003; Mellow & Heelan, 2008; Pollock, 2006).

Community college leaders develop and carry out the strategic enrollment management (SEM) plan by leveraging the institutional resources to achieve "... mission-related goals ...[and] maximize student success" (Clemetsen & Rhodes, 2009, p. 15). Bontrager and Pollock (2009) defined strategic enrollment management as an institution-wide strategic "... concept and process that enables the fulfillment of

institutional mission and students' educational goal" (p. 3). Clemetsen and Rhodes (2009) defined the context of institutional mission and educational goals as achieving the performance measures of enrollment, retention, and graduation, and financial sustainability.

Dolence (1995) has shown that colleges will undertake a strategic posture when faced with persistent decline in enrollment. In the enrollment management transition model (Dolence, 1995), institutions move from the denial phase where the institution maintains complacency towards the external environment to the strategic phase. In the strategic phase, institutions become intentional to maintain optimal enrollment in response to the external environment.

According to Black (2004) and Dolence (1995), community college leaders may implement an enrollment management structure that ranges from centralized to decentralized planning. The most decentralized model is that of a committee structure. The committee structure brings together members of the college community for the purpose of informing each other of the activities taking place. Next is a coordinator model. An enrollment management coordinator holds formal authority to coordinate enrollment management activity. Moving to a more centralized planning is the matrix model. In this model, a senior administrator, such as a vice-president, brings together the reporting units to centralize the planning of enrollment management activities. Lastly, the most centralized planning model is the division model. An enrollment management division centralizes the strategic planning enrollment management activities under one person. Black (2004) added that a centralized enrollment management model yields higher outcome than a decentralized model because a single unit manages the planning

activities. Furthermore, Black (2004) suggested that a decentralized enrollment management planning model consists of self-interested actors who seek to leverage the forum to benefit their own subunit (Engelen, 2011) and, therefore, the model lacks formal ownership and authority. Because enrollment management constitutes changes in management practice brought out by external environment, Burke and Litwin (1992) suggested that these changes affect institutional performance. Prior empirical studies (Kaynak & Hartley, 2005; Zhu & Sarkis, 2004) on the relationship between management practice and organizational performance supports this finding.

Community college leaders leverage their subunit by guiding the "... strategic efforts to improve and sustain student success" (Clemetsen & Rhodes, 2009, p. 31), and the outcome of the planning process may relate to the institutional performance measures (AACC, 2012c; Bontrager & Pollock, 2009; Clemetsen & Rhodes, 2009; Hossler, 1984; The SOURCE, 2011). To achieve the enrollment management goals, Black (2004), Dixon (1995) and Glenn (2009) suggested that community colleges may institute a centralized planning or a decentralized planning enrollment management structure drawn on industry best practices.

Community college leaders employ industry best practices, such as implementing specific subunit strategy or restructuring at an organizational level, to achieve institutional goals. Employing best practices tends to create an "iron cage" effect to the point where community colleges appear isomorphic to maintain legitimacy to the key stakeholders (DiMaggio & Powell, 1983). Furthermore, institutionalizing changes in practice suggests the newly adopted practice will lead to higher performance (Burke & Litwin, 1992).

In a study on Chinese organizations adopting green supply chain management practices (GSCM), Zhu and Sarkis (2004) hypothesized and found support for the relationship between higher level of GSCM adoption and organizational performance. Furthermore, in a study on adoption of quality management practices in high tech firms, Kaynak and Hartley (2005), found a positive relationship between quality management practice adoption and performance. Therefore, one can posit instituting an enrollment management structure constitutes change in practice that may yield higher performance.

Proposition 2a: A positive EO-EMO relationship will exist in community college setting.

Proposition 2b: A positive EMO-performance relationship will exist in community college setting.

Bontrager and Moore (2009) and Dolence (1995) argued that institutions will become more strategic to be more effective, and suggested that the institutions adopt enrollment management to meet higher performance metrics. However, no aggregate measures of the relationship between enrollment management and performance have been developed or tested. This proposition contributes to the study of enrollment management effectiveness in relationship to community college performance (Bontrager & Moore, 2009; Dolence, 1995; George & Marino, 2011).

Proposition 3: The relationship between EO and performance will be mediated by EMO.

Given that community colleges will initiate changes in management practice (Dolence, 1995) when the existing institutional practices have no effect on performance, adopting an enrollment management structure may constitute change in management

practice to meet performance goals (Bontrager & Moore, 2009). Therefore, enrollment management practice may mediate the relationship between EO and community college performance (George & Marino, 2011; Kaynak & Hartley, 2005; Zhu & Sarkis, 2004). This proposition contributes to the study of enrollment management in community college context, where enrollment management may be antecedent to institutional performance.

Community College Subunits

In the body of literature on organizational studies, researchers defined subunits as a formal structure within the organization to serve a specific business function that contributes to the overall organizational performance (Lawrence & Lorsch, 1967; Morgan, 1997; Stefanos, 2006). Castrogiovanni (1991) suggested that the role of each organizational subunit is to address specific environmental factors in the context of the organization's external environment. Hitt et al. (1983) added that the effective operation of a subunit contributes to the overall organizational performance by meeting external environmental needs. To measure subunit effectiveness, Hitt and Middlemist (1979) developed a methodology to establish performance indicators for a given subunit by allowing top managers to rate performance measures significant to their subunits. Hitt and Middlemist (1979) found statistical support for the methodology, but acknowledged that the managers may show bias when rating the effectiveness of their subunit.

Subunit effectiveness contributes to the overall organizational performance. Hitt et al. (1983) made several observations on the effectiveness of subunits between administrative and production divisions within a single organization and studies in other settings (Hitt & Middlemist, 1979). First, the authors found that the managers'

perception of their subunits' effectiveness was oriented around the subunit's goals. The authors suggested that because the goals of each subunit varied, the subunit effectiveness criteria varied. Second, Hitt et al. (1983) observed that subunit planning in public organizations differ from that in private for-profit organizations, and they attributed this difference to the organizational performance measures. While private for-profit organizations have definitive financial goals, performance measures of non-profit public organizations are "... objective ... vague and intangible in nature ..." (pp. 97-98); therefore, subunit effectiveness measures will vary between organization types (Hitt & Middlemist, 1979). Lastly, Hitt et al. (1983) suggested that subunit effectiveness may be attributed to the individual characteristics of the subunit manager. In other words, the subunit performance measure may be a function of the manager's strategy-making process (Miller, 1983).

Furthermore, Carillo and Kopelman (1991) observed that organizations with smaller subunits were more efficient than larger subunits. The authors attributed several reasons for the efficiency of a small subunit. First, the employees were more accountable because of the size of the unit. Second, the employees were more entrepreneurial towards task accomplishment. Finally, the employees were more collaborative, and highly motivated. Adding to the discussion on subunit performance, Engelen (2011), observed that managers who leverage their subunit to solve organizational problems bring power and influence to their subunit. This suggests that subunit managers possess strategy-making capacity that may relate to organizational performance. Therefore, one can conclude that a subunit's internal environment is a factor in its overall effectiveness.

Subunits contend with the external environment of the organization. In meeting the needs of the external environment, subunit managers engage in strategy formulation. The process by which strategy decisions are based illustrate the organization's posture towards its environment (Narayanan & Fahey, 1982). Narayanan and Fahey (1982) noted that the interactions between subunits for strategy formulation might entail strategic decisions reached by consensus by key decision-makers or nurtured by a political process. Ireland, Hitt, Bettis, and Porras (1987) found the perception of environmental uncertainty differed among top-level, mid-level, and low-level managers, and attributed this difference to the "... managers' cognitive schema ..." (p. 482). The understanding of the subunit's external environment by the managers, therefore, presents a challenge to subunit effectiveness, and its overall contribution to organizational performance. However, to meet organizational performance, subunits will leverage the available resources (Engelen, 2011; Hitt et al., 1983).

Castrogiovanni (1991) described the abundance or scarcity of resources available to subunits as environmental munificence. The resources may be from external sources or from within the organization. In relationship to subunits, Castrogiovanni (1991) observed that the influence of environmental munificence on the organization may be contextual to the role of the subunit within the organization. The extent to which a subunit addresses environmental munificence may be a function of its effectiveness on the overall organizational performance (Engelen, 2011; Hitt et al., 1983).

The subunits within community colleges are part of the broader divisions of student affairs, academic affairs, and business affairs (Bontrager & Moore, 2009; Hossler, 1984). Academic affairs division within a community college is oriented with

academic related matters. Organizational functions within community colleges such as development of courses, curriculum, academic department management, faculty assignment, academic advising, and academic program accreditation are examples of responsibilities and outcomes that fall within one or more academic affairs subunit. Student affairs division manages operations related to student enrollment and student activities. Admissions, student records and registration, and financial aid are structured subunits within a student affairs division. Lastly, business affairs division deals with finance, facilities operations and other non-academic or non-student activities vital to institutional operation (A. M. Cohen & Brawer, 2003; Mellow & Heelan, 2008; Pollock, 2006).

Drawing on the findings by Hitt et al. (1983) and others, one might observe similar differential subunit planning and effectiveness in community college context. For example, the planning process of the admissions subunit is more inclined towards achieving enrollment management goals, whereas an academic subunit may plan to leverage its resources to increase the faculty to student ratio in response to enrollment increase. Furthermore, the advising subunit may need to allocate more resources to provide advising services to new students (Bontrager & Moore, 2009).

To further the notion of differential subunit planning and effectiveness in community college context, the student financial aid subunit may plan to implement procedures and processes not to accommodate student enrollment increase, but to maintain federal policy compliance (Castrogiovanni, 1991; McClenney, 2007). One can note that because each community college subunit has specific functions, it is likely that the planning process and the effectiveness of the subunits will vary. Because subunits

engage in strategy-making process to ensure effectiveness, it is likely that the community college subunit managers may possess an entrepreneurial orientation (Wales, Monsen, & McKelvie, 2011).

Subunits in community colleges are formal structures that operate with differential effectiveness. Subunits within community colleges may implement industry-wide best practices to achieve effectiveness (Castrogiovanni, 1991; Engelen, 2011; Hitt et al., 1983). In recently published reports, Noel-Levitz (2013a) and Noel-Levitz (2013b) identified the ten most effective recruiting practices, as well as retention and outcome practices. Although the reports suggest that these practices reflect institutional strategies, the specific institutional subunit is responsible for planning and executing these strategies. One might posit that since subunits are responsible for planning and executing strategies, the entrepreneurial orientation of the subunits may predict performance in the outcome of the strategies employed by the subunits.

Proposition 4: Community college leaders will rate EO in a consistent way.

Proposition 5: Subunit EO will be a better predictor of subunit performance.

Prior studies on EO-performance focused on applying EO to a single respondent within an organization, and assessed EO at the firm level. Propositions 4 and 5 apply EO to multiple respondents from the same institution, and assess EO at the subunit level. The contribution of propositions 4 and 5 adds to the existing body of literature on the study of EO and performance via subunit analysis, which remains a gap in EO-performance research.

Hypotheses

As discussed in the previous chapter, the present study was modeled on prior research on EO-performance relationship. Moreover, the introduction of enrollment management orientation was introduced in the study of EO-performance. Thus, data collection and data analysis ensued to test following hypotheses.

A disposition to be innovative, proactive, competitive, risk seeking, and autonomy seeking is rooted in the colleges strategy-making process to achieve performance goals. The degree to which institutions are entrepreneurial will impact their performance as shown by Pearce II et al. (2010), Phelan et al. (2013), and others; therefore, the following hypotheses will be tested:

H1. A high degree of entrepreneurial orientation has a positive effect on community college performance.

H2. A positive relationship will exist between EO sub-dimensions and community college performance.

Colleges that are entrepreneurial proactively adopt industry best practice or innovate new practice for meeting performance goals. More specifically, more entrepreneurial colleges will exhibit a high degree of an enrollment management orientation. Therefore, community college entrepreneurial orientation will impact enrollment management orientation; and enrollment management orientation will impact community college performance. Moreover, the relationship between community college entrepreneurial orientation and performance will be mediated by enrollment management orientation. Given that community colleges will adopt enrollment management as a change in management practice (Dolence, 1995) when the existing institutional practices

have no effect on performance (Bontrager & Moore, 2009), the following hypotheses will be tested:

H3. A high degree of entrepreneurial orientation will have a positive effect on enrollment management orientation.

H4. A high degree of enrollment management orientation will have a positive effect on community college performance.

H5. EO-performance is mediated by enrollment management orientation.

Subunits in community colleges are formal structures that operate with differential effectiveness, and implement industry-wide best practices to achieve effectiveness (Castrogiovanni, 1991; Engelen, 2011; Hitt et al., 1983); thus, suggesting that subunits behave entrepreneurial. Moreover, community college subunit entrepreneurial orientation will be rooted in the institutional entrepreneurial orientation. Since subunits are responsible for planning and executing its own strategies, subunit entrepreneurial orientation will be a better predictor of subunit performance. Therefore, the following hypotheses related to subunit analysis will be tested:

H6. There will be a significant level of interrater reliability around institutional entrepreneurial orientation (coefficient $\geq .75$).

H7. Subunit EO is a better predictor of subunit performance than institutional EO.

H8. There will be a positive interaction between institutional EO and subunit EO and performance.

Methodology

The purpose of this study was to explore the relationship between entrepreneurial orientation (Lumpkin & Dess, 1996; Morris et al., 2011) and community college

performance (AACC, 2013b; Dougherty et al., 2009). In particular, this study examined the entrepreneurial orientation exhibited by the enrollment management professionals in community colleges (Bontrager & Moore, 2009). For the purpose of this study, I defined enrollment management professionals as top-level managers in community colleges, including the college president, the vice-president of academic affairs, and the vice-president of student affairs, or equivalent in title. A survey research methodology informed the data collection and analysis process (Babbie, 1990).

Research Questions

The overall goal of the study was to explain the relationship between entrepreneurial orientation and community college performance. Data collection and analysis was guided by the following research questions.

1. What is the relationship between entrepreneurial orientation and community college performance?
2. What is the relationship between enrollment management orientation and community college performance?
3. To what extent does enrollment management orientation mediate the relationship between entrepreneurial orientation and community college performance?
4. To what extent does entrepreneurial orientation predict performance in the enrollment management dimensions managed by the community college subunits?

Assumptions of and Rationale for the Study Design

The present study drew upon a post-positivist view of research design; thereby, utilizing a quantitative research methodology as the strategy of inquiry (Belli, 2009;

Creswell, 2003; Ryan, 2006). Belli (2009) explained that quantitative research may be either experimental, or non-experimental. A non-experimental quantitative study involves the researcher to study the variables as they occur in the natural setting, and draws on other sources for causal explanation such as a mediating or moderating variable (Belli, 2009). Thus, a non-experimental quantitative approach was appropriate because the goal was to explain the relationship between EO and community college performance without manipulating the measures of EO. I collected primary data using a survey instrument, and acquired institutional performance metrics from IPEDS, a secondary data source.

Context for the Study

This study entailed collecting data from community college presidents and vice-presidents employed at community colleges in the United States. Community colleges were chosen as study sites because the public institutions have been in the national spotlight as they contend with greater accountability, competition, and decline in funding (Dougherty et al., 2009; The SOURCE, 2011).

Sampling of Survey Respondents

Since the present research measured EO at a single point in time, a cross-sectional survey research was appropriate for the present non-experimental quantitative design (Belli, 2009). A survey research involves selecting a specific sample population who provides data via a questionnaire that a researcher can then employ a quantitative analysis to address the research question (Babbie, 1990). The study participants were enrollment management professionals, specifically college presidents, at community colleges. The

study participants were selected using a purposeful sampling strategy (Onwuegbuzie & Collins, 2007).

More specifically, following a critical case sampling method (Daniel, 2012), I conducted a search of the participant contact information using the online *Higher Education Directory*, and verified each contact name by searching the college's website. A critical case sampling method involves selecting participants using inclusion and/or exclusion criteria to identify participants who will provide responses central to the phenomenon of the study (Daniel, 2012).

Data Collection

Prior to data collection, I obtained IRB approval. Data collection took place at a single point in time using an online survey instrument (Dillman et al., 2008). For this study, a survey instrument informed the primary data, while a secondary data source informed community college performance (Rauch et al., 2009). A survey research study uses a survey instrument to facilitate data collection (Babbie, 1990). Researchers often use previously tested and validated survey instruments in their own studies, but they may modify them to fit the research setting (Creswell, 2003; Fink, 2009; Pearce II et al., 2010). The present study used a modified version of a previously tested and validated instrument to facilitate the collection of primary data on entrepreneurial orientation. In addition, the instrument facilitated data collection on the effectiveness of focal enrollment management practices.

The survey was administered via a web-based system. The study participants received an email invitation to complete the online survey. Upon accepting the invite, the study participants navigated to the online survey. The data from the completed survey

were stored securely in an online database. Lastly, the participants received a “Thank you” acknowledgement upon completing the survey (Fink, 2009).

Secondary data source informed institutional characteristics and performance measures. A complete list of variables can be found in Appendix A. These data points were selected since it encompassed financial and non-financial aspects of performance measures (Morris et al., 2011; Pearce II et al., 2010; Phelan et al., 2013).

Instrumentation

Self-reported data provided insight on entrepreneurial orientation, enrollment management activities, and subunit analysis. On the topic of EO, Morris et al. (2011) contextualized the three dimensions (risk-taking, innovativeness, and proactiveness) of entrepreneurial orientation in non-profit context in a meta-analysis. Of the ten empirical articles that were examined, 7 studies were conducted using a modified instrument drawn on Miller’s (1983) findings of entrepreneurial orientation in three types of firms. Phelan et al. (2013) contextualized EO in the context of public K-12 schools, and found support for the five dimensions (autonomy, competitiveness, risk-taking, innovativeness, and proactiveness). While these studies were not oriented toward institutions of higher education, an existing EO instrument from Phelan et al. (2013) was modified for community college setting since it is the closest to education context.

Drawing on the findings of Morris et al. (2011), Pearce II et al. (2010), and Phelan et al. (2013) the present study utilized a modified instrument that measured autonomy, competitiveness, risk-taking, proactiveness, and innovativeness as the dimension of entrepreneurial orientation in community college setting. More specifically, the instrument I used for the study (see Appendix C) was a modified 7-point

Likert scale from Phelan et al. (2013). Furthermore, I collected self-reported data on the importance of focal enrollment management activities to the specific subunit. The items pertaining to the subunit analysis was guided by Bontrager and Moore (2009), Carillo and Kopelman (1991), Castrogiovanni (1991), and Hitt and Middlemist (1979). Since the instrument was modified for community college settings, pilot testing took place in a higher education setting to ensure construct validity (Fink, 2009). Lastly, I elicited expert review of the instrument design to ensure construct and item validity (Dillman et al., 2008).

In a survey research design, primary data can be collected by using different methods such as interview, postal mail, fax, email, or a web based survey. To maximize the response rate, Dillman et al. (2008) suggested researchers should use various forms of communication to solicit survey data. Using email as a form of communication to solicit survey response via a website is the most cost effective, but a combination of email notification may be followed up by a postcard or a phone call to yield a higher response rate. Community college presidents were contacted in April by email to participate in the survey. The email included a personalized greeting, a brief summary about the research, custom link to the survey, and my contact information. The next email (first reminder) was sent to the college presidents in June. Sufficient time was allowed to pass to account for end of term activities such as graduation, retreats, and conference attendance. The email text for the first reminder was slightly different in that it included a personalized greeting, a brief summary of the research project, the response rate received, and included a brief statement about the importance of the response from that college relative to the whole population. In addition, the email included the following sentence “With the push

for the implementation of 21st-Century Initiative by the American Association of Community College and other initiatives at state and federal level, community colleges are in the national spotlight to improve performance and outcome”. This phrase was included to draw the participant’s attention to relevancy of the study in the context of external environment. A second reminder email was sent in August, just before the start of the fall term. The email contents for the second reminder were the same as the first reminder. At the time the second reminder was sent, a downloadable copy of the survey was made available for the participants to fill out and send back.

Upon clicking on the survey link, the participants were guided to the survey website. The opening page repeated the information from the email, and presented the participants with the informed consent. The survey was presented to the participants in multiple sections: entrepreneurial orientation, enrollment management orientation, retention and completion best practice, recruitment and admissions best practice, environmental munificence, performance importance indicators, and participant information. At the conclusion of the survey, the presidents were asked to provide the email address of their vice-presidents for academic affairs, student affairs, and finance. After submitting all responses, the participants received a thank you email.

To collect data on community college subunits academic affairs, student affairs, and finance, the college presidents were asked to provide the email address of the vice-president of those subunits. The vice-presidents received an email invitation to participate in the survey in the same manner as the college presidents. When the vice-presidents were presented with the questions, the questions listed the specific subunit

name. For example, if the vice-president for student affairs was responding to the survey, the questions displayed *student affairs* where appropriate.

Questions and Scaling

While no existing instruments have been developed to study EO in community college context, Phelan et al. (2013) provided the closest model of studying EO in education setting. In addition to items to measuring EO, the instrument also measured enrollment management orientation and institutional effectiveness. Items to measure enrollment management orientation and institutional effectiveness were drawn from literature in Bontrager (2004a), Bontrager and Moore (2009), Bontrager and Pollock (2009), and specific strategies identified in Noel-Levitz (2013b), and Noel-Levitz (2013a). Therefore, a modified instrument was used to collect data for the study.

As with prior EO studies (Morris et al., 2007; Morris et al., 2011; Pearce II et al., 2010; Phelan et al., 2013), the EO variable for the present consist of its five dimensions, innovativeness, proactiveness, risk-taking, competitiveness, and autonomy. Each dimension consists of three items measured using a 7-point Likert scale. The participants were asked to select a value between two statements: one (1) indicates strong agreement with the first statement, while a seven (7) indicated a strong agreement with the second statement, and a four (4) indicates both are equally true. The numbers in between one and seven represent differing degrees of agreement with one of the two statements.

Enrollment management orientation and institutional effectiveness and importance were measured using a 7-point Likert scale. Bontrager and Pollock (2009) described enrollment management as strategy and planning around the institution's mission taking a holistic approach towards student outcome. Employing effective

strategies to meet admission, recruitment, retention, and outcome goals are integral to enrollment management. A study by Noel-Levitz (2013b) and Noel-Levitz (2013a) identified most common strategies employed by community colleges in the area of admission, recruitment, retention, and outcome. The strategies were operationalized in this study to measure respondents' perception of effectiveness and importance of enrollment management, recruitment and admission, and completion and outcome activities in their college/division.

Pilot study

The survey pretest consisted of soliciting feedback from Rowan University faculty members and community college administrators. Several edits were made to the instrument before the final survey was administered. First, a section on the importance of each entrepreneurial orientation sub-dimension was removed as it was deemed irrelevant to the study. Second, EO question #14 was slightly modified to clarify that the word "new" refers to services for students overall and not just student as in newly admitted students. Third, a mobile friendly user interface was applied to the survey since many participants may be accessing the survey site using a tablet.

In summary, the pretest provided valuable insight into the final survey design, clarification of words used in the questions, and accessibility of the survey website on various platforms (Dillman et al., 2008).

Control Variables

Vora, Jay, and Polley (2012) and others have studied EO-performance relationship among various sizes of organizations, and suggests that EO-performance relationship exists regardless of the size. Tenure was measured as years the college

president or the vice-president has been in that role at their institution. Institution size measured the size of the institution based on Carnegie Classification. Lastly, net tuition measured the institution's net tuition price reported to IPEDS. Given that the study sample represents various institutional sizes in terms of enrollment as well as cost, the treatment of these variables were held constant when accounting for in the overall effect of independent variables on the dependent variables in the regression analysis.

Data Analysis

For this study, a survey instrument was used to collect primary data, and referred to IPEDS for institutional characteristics and performance measures. Primary data source informed each dimension of entrepreneurial orientation, and enrollment management orientation as a numeric value, and participant characteristics as ordinal and nominal values.

Researchers who approach a study from post-positivist paradigm where the study is a cross-sectional survey research employ explanatory data analysis (Babbie, 1990; Belli, 2009; Ryan, 2006). Explanatory data analysis seeks to find the influence between the independent variable and the dependent variable. For the purpose of this study, I applied explanatory data analysis methods to explain the relationship between variables entrepreneurial orientation, enrollment management orientation, and overall performance (Blaikie, 2003).

Correlation analysis and multiple regression techniques were used in data analysis. A correlation analysis provides the researcher with the direction and the strength between independent variable and dependent variable. The direction of the relation may be positive, negative, or no relationship, and the strength may be weak,

moderate, or strong. The direction of the relationship is measured by the positive or negative sign of the correlation coefficient, and the strength is represented by the closer the coefficient is to -1 or +1. A multiple regression analysis will help the researcher understand the degree to which the dependent variable changes with a change in the independent variable, while holding control variables constant (Tabachnick & Fidell, 2013).

Lastly, a mediation test will be performed to test the mediation effect of enrollment management orientation on the relationship between entrepreneurial orientation and performance. To perform the mediation test, the following conditions will have to be met: a) entrepreneurial orientation will be a significant predictor of enrollment management orientation; b) enrollment management orientation will be a significant predictor of community college performance; and c) entrepreneurial orientation will be a significant predictor of community college performance. Given these conditions hold true, and the effect of EO on performance is reduced after hold EMO constant, then EMO is considered to mediate the relationship between EO and performance (Jose, 2013).

Validity

For this study, I had to address several validity issues. A challenge to a survey research methodology is to maximize the response rate (Babbie, 1990). Craig and McCann (1978) found that item response rate varies based on the question type, number of questions, and the response expected for an item when researchers administer surveys by mail. Researchers are turning to online tools to conduct survey research, but response rate and bias remains a persistent challenge (Sax, Shannon, & Bryant, 2003). An online

survey instrument offers many advantages such as ease of access to the instrument, real-time data collection, tracking response rate, low cost of administration, and flexibility in designing complex questions (Fink, 2009).

Dillman et al. (2008) noted that researchers should use the tailored design method to increase response rate when administering an internet survey. Using a tailored design method entails the use of "... multiple motivational features .." (Dillman et al., 2008, p. 16) to encourage a high response rate. The participants received an email that included a brief information about the research project, link to the online survey instrument, and an electronic copy of the questionnaire for the participant to review. Providing the participants with an opportunity to understand their role in the research project may serve as a motivational factor to provide unbiased responses (Fink, 2009; Fowler, 1995). In addition to the initial email, the participants who had not completed the survey received a follow-up email three weeks later reminding them to complete the survey. Once each participant completed the online instrument, the raw data was stored in a secure online database for analysis at a later time, and to maintain the integrity of the raw data (Babbie, 1990; Fink, 2009).

In addition to response rate and data integrity, Litwin (2003) and Fink (2009) discussed types of instrument validity and strategies to address the validity threats. To address content validity, I elicited feedback on the instrument from knowledgeable subject matter experts. I shared the instrument with enrollment management professionals in higher education to assess the appropriateness of the items and the scale. Construct validity assessment took place during the data analysis phase. According to Litwin (2003), a correlation coefficient of 0.7 or higher is a measure of good validity.

For the purpose of dissertation, I bypassed face validity because the feedback would not be of any value since the instrument is not intended for the general public (Fink, 2009; Litwin, 2003).

Lastly, Fink (2009) discussed several external validity threats. Fink (2009) noted that as study participants interact with the survey instrument, they become aware of the expected behavior that may lead to skewed responses. For this study, enrollment management professionals could have provided favorable response to the questions pertaining to entrepreneurial orientation and subunit analysis (Phillips & Clancy, 1972). This may have been the case if enrollment management professionals viewed projecting their subunit in a more positive manner. Because the responses were self-reported and the study was viewed from a post-positivist perspective, participants responses were accepted as reported, and were included in the data analysis.

Generalizability

Findings from a survey research study may be generalizable to the population represented by the sample used for data analysis. The strength of generalizability will depend on the response rate. Furthermore, the statistical analysis should show that the relationship between the independent and dependent variable is not due to chance. In other words, the associations between the variables are statistically significant. Given these conditions, it is likely that the findings may be generalizable to other community colleges with similar characteristics (Polit & Beck, 2010).

Conclusion

In this chapter, I provided the theoretical framework on the relationship between entrepreneurial orientation and performance. Utilizing the entrepreneurial orientation

framework in non-profit context proposed by Morris et al. (2011) suggests that EO in community college is contextual to its social mission, thus autonomy, competitiveness, innovativeness, proactiveness, and risk-taking may vary in the community college setting (Pearce II et al., 2010; Phelan et al., 2013). Next, I discussed the role of enrollment management-performance relationship. Drawing on the findings from previous studies (Carillo & Kopelman, 1991; Castrogiovanni, 1991; Hitt et al., 1983), subunit effectiveness has been found to relate to overall organizational performance. Furthermore, the role of organizational subunits is to address environmental factors; thus, suggesting that subunit managers engage in planning to ensure effectiveness that contributes to organizational performance. Lastly, I proposed that financial and non-financial metrics constitute community college performance measures.

Following the theory development section, I discussed my research methodology. In this section, I addressed important aspects of the survey research methodological approach proposed by Babbie (1990) and Creswell (2003). In addition, I expressed using explanatory data analysis methods for analyzing the research data. In addition, I provided the rationale for selecting community college study sites, and selecting enrollment management professionals as study participants. Finally, I end the section by addressing validity issues.

Lastly, I end this chapter by acknowledging that I have completed the *Responsible Conduct of Research* training.

Chapter 4

Results

The purpose of this study was to explore the relationship between community college entrepreneurial orientation (EO) and performance. Additionally, the present study also collected data on enrollment management orientation (EMO) to examine the role of EMO as a mediating variable. In the previous chapter, I described the methodology used for data analysis. This chapter presents the results and findings of the data analysis. First, I discuss the responses from the participating institutions. Next, I will discuss data analysis and present the results. Finally, the chapter concludes with the findings, and an overall conclusion.

Responses

In total, 109 responses were received, of which 19 were discarded due to duplicates and total no-response. Total no-response refers to the participant clicking on the survey link, and cycling through without responding to the questions. Thus, the resulting 90 responses were used for various analyses, representing a response rate of 10%. A response rate of 10% is less than ideal for generalization as reported in literature (Fabiano-Smith & Goldstein, 2010), but analysis of the data ensued.



Figure 1. Participants and responses

Overall, 890 institutions were identified for participation in the survey, of which 90 responded to the survey resulting in about 10% response rate representing colleges from 36 states. A chi-square test was performed to determine whether colleges of different Carnegie Classification were equally represented. Colleges based on Carnegie Classification were representative in the sample, $\chi^2 (7, N=890) = 10.063, p=.1850$.

Colleges classified as *small* represented 48% of the sample, while *very small* and *very large* represented only 3% each. The enrollment in the participating institutions ranged from 597 to 27,910 students. The graduation rate reported ranged from 4% to 67%, while the transfer rate ranged from 3% to 61%. Colleges located in *rural* area accounted for 20% of the respondents, while colleges located in *city* areas accounted for 30% of the respondents. The net tuition reported for the participating institutions ranged from \$2,382.00 to \$13,423.00 with a mean of \$6,955.27. To protect the identity of participating institutions, specific geographic location has been left out from the descriptive statistics. IPEDS data for one college was not available.

The unit of analysis for the study was community colleges. For each college identified for the study, the college president was selected to provide responses to the survey instrument. Community college presidents provide overall leadership for the institution and establish the strategic agenda. More than 50% of the participants indicated they were in the role of the chief executive of the institution for less than 6 years. The method of identifying participants was consistent with prior studies on EO-performance surveyed chief executives or top-level executives of organizational level data (Lumpkin & Dess, 1996; Miller, 1983; Morris et al., 2007; Pearce II et al., 2010; Phelan et al., 2013).

For the subunit analysis, a total of 11 responses were received from the subunit participants. The responses were not enough to test hypotheses 6, 7, and 8 (Blaikie, 2003). The subsequent sections that follow apply to data analysis, findings, and discussion at the college level analysis.

Data Analysis

The financial performance (FPERF) measure consisted of total tuition and fees, and funding from state, local, and other sources per full-time equivalent (FTE). The non-financial performance (NPERF) measure consisted of retention rate and graduation rate. The performance data of the colleges were obtained from the IPEDS database for the years 2010-2012. Overall performance (PERF) was a standardized composite value of financial and non-financial performance.

While the majority of participating colleges showed an increase in overall revenue over a three-year period, less than half showed a decline in overall revenue ranging from 1% to 42% per FTE. Enrollment ranged from a decline of 35% to an increase of 36% measured as full-time equivalent (FTE). A decline in full-time and part-time retention by 40% or more was observed in most participating colleges. Graduation rates were measured as 100%, 150%, and 200% relative to normal time of graduating in two years. Normal time to graduation was shown to increase by as much as 257% in participating colleges across 25 states, while colleges from 11 states showed a decline in the 2-year graduation rate ranging from 9% to 34%. Additional descriptive statistics are provided in Table 1 and Table 2, and a full table of variables is included in Appendix A.

Table 1

Descriptive statistics of EO sub-dimensions, EO, and EMO

	N	N Missing	Mean	Std Dev
AUTON	88	2	15.00	2.33
COMPET	89	1	12.36	2.92
INNOV	89	1	14.71	3.37
PROAC	88	2	14.58	3.25
RISK	87	3	14.26	2.86
EO	85	5	71.13	11.57
EMO	63	27	112.84	14.48

Table 2

Descriptive statistics performance metrics

	N	N Missing	Mean	Std Dev
FTE	89	1	-8.56	11.02
GR100	89	1	13.47	66.85
GR150	89	1	3.82	27.50
GR200	89	1	3.04	21.74
RETF	89	1	-1.98	13.60
RETP	89	1	-3.02	37.57
REV	89	1	7.59	21.61

Multiple regression analysis was performed to assess the contribution of the independent variables to predict the dependent variable. Independent variables included entrepreneurial orientation and enrollment management orientation. The entrepreneurial orientation variable (15 items, $\alpha = .862$) is the composite score of its five dimensions (EO5): innovativeness, proactiveness, risk-taking, competitiveness, and autonomy. The enrollment management orientation variable (20 items, $\alpha = .823$) consisted of measures such as planning, strategy, and decision-making.

In the first set of models, overall community college performance was the dependent variable. First, the control variables were loaded into the model with the dependent variable overall performance. Control variables loaded into the model were years as the president (tenure), institution size, and net tuition price, and the variables were loaded in the same order. Subsequent models loaded EO, EMO, and EO sub-dimensions while holding tenure, institution size, and net tuition constant. In the second set of models, EO was the dependent variable. The same control variables as the first model were loaded, followed by EMO as the predictor variable.

Results

The raw data were downloaded from the survey database and merged with the objective performance data from IPEDS for years 2010-2012. The merged dataset was imported into SAS JMP v10 for analysis. From the raw data, composite scores were calculated for each independent and dependent variables. Instrument item #13 related to measuring autonomy was reverse coded prior to generating the composite score for autonomy. Responses with missing items were not used in correlation and regression analysis. In the regression analysis, years as college president, institution size, and net tuition price were held constant to control for their variances across different colleges. Alpha level was set at .05 for the correlation and regression analysis.

The Pearson's correlation between overall entrepreneurial orientation and each dimension were highly related at a significant level (Table 3). The correlation between enrollment management orientation was significant and positive with innovativeness ($r = .346; p < .01$), proactiveness ($r = .441; p < .001$), risk-taking ($r = .315; p < .01$), and competitiveness ($r = .335; p < .01$). Although EMO positively correlated with autonomy,

it was not at significant level ($r = .242$; $p > .05$). The correlation between overall entrepreneurial orientation and enrollment management orientation was moderately positive and significant ($r = .443$; $p < .001$). Overall performance variable, measured as a composite score of objective non-financial and financial performance items, did not significantly correlate with overall EO or each EO dimensions. However, the correlation between overall performance and enrollment management orientation was low, but positive at a significant level ($r = .298$; $p < .01$). The complete pairwise correlation between each variable is included in Table 3.

Table 3

Pair-wise correlation estimates

	INNOV	PROAC	RISK	COMPET	AUTON	EO	EMO	PERF
INNOV								
PROAC	0.682***							
RISK	0.527***	0.679***						
COMPET	0.482***	0.407***	0.531***					
AUTON	0.509***	0.606***	0.497***	0.314**				
EO	0.825***	0.863***	0.825***	0.713***	0.704***			
EMO	0.346**	0.441***	0.315**	0.335**	0.242	0.443***		
PERF	0.041	0.069	0.069	0.068	0.152	0.104	0.298**	

Note: N=60; Standardized values; * $p \leq .05$; ** $p < .01$; *** $p < .001$

Using the composite score developed for each independent variable, multiple regression analyses were performed to assess the five hypotheses. Table 4 reports the results of the regression analysis. Model 1 established the base model, which included the control variables: Tenure (years in position as the college's president), Institution size, and Net tuition price. The model was found to explain small statistical significant amount of overall community college performance (model 1: $R^2 = .326$, $p < .01$).

The second model contained the three control variables and overall entrepreneurial orientation calculated as the composite score of its sub-dimension (model 2: $R^2 = .337$, $\Delta R^2 = .011$, $p < .01$). Model 2 showed that EO had a moderate positive effect ($\beta = .114$), but it was not a significant contributor to overall performance ($t = .87$, $p = .391$). Although the sign of the multiple regression was in the predicted direction, the overall effect of EO on performance was not statistically significant; therefore, hypothesis 1 was not supported.

Model 3 tested the effect of the five EO sub-dimensions on overall performance. Overall, the model had small effect on overall performance (model 3: $R^2 = .380$, $\Delta R^2 = .054$, $p < .05$). Innovativeness ($\beta = .154$), proactiveness ($\beta = .019$), autonomy ($\beta = .098$), and competitiveness ($\beta = .143$) had positive effect, while risk-taking ($\beta = -.250$) had negative effect on overall performance. Overall, the effect of each sub-dimension had on performance was not statistically significant; therefore, hypothesis 2 was not supported.

Next, enrollment management orientation (EMO) was added to the base model. Enrollment management orientation was calculated as the composite score of the 21 items measuring enrollment management orientation. Model 4 included the control variables and EMO (model 4: $R^2 = .352$, $\Delta R^2 = .026$, $p < .01$) showed that EMO had small positive effect ($\beta = .181$) on overall performance. However, the effect was not at significant level ($t = 1.33$, $p = .189$); therefore, hypothesis 4 was not supported.

To test hypothesis 3, a base model was constructed with the three control variables and with EMO as the dependent variable. The base model (model 5: $R^2 = .202$, $p = .102$) was found to exhibit no statistical significant on enrollment management orientation. When the composite score of EO was added to the base model (model 6: $R^2 =$

.395, $\Delta R^2 = .193$, $p < .01$), EO was shown to have a moderate positive effect on EMO ($\beta = .471$). The effect of EO on EMO was in the predicted direction, and statically significant ($t = 3.75$, $p < .001$); therefore, hypothesis 3 was supported.

Table 4

Results of regression analysis

	Dependent variable: Performance				Dependent variable: EMO	
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Control						
Tenure	9.754				.418***	
Instsize 2-1	1.083***				-.471	
Instsize 3-2	-9.538				.359	
Instsize 4-3	0.227				.058	
Instsize 5-4	-0.482				-.178	
Net Price	-1.512*				-.184	
Independent variable						
EMO				.796		
EO		.518				.487***
INNOV			.706			
PROAC			.084			
RISK			-1.154			
COMPET			.664			
AUTON			.460			
Interaction items						
Model R ²	.326***	.337***	.380**	.352***	.202	.395***
ΔR^2	-	.011	.054	.026	-	.193
Adjusted R ²	.236	.232	.210	.249	.096	.299
Model F	3.624	3.200	2.235	3.414	1.900	4.105
Prob > F	<.01	<.01	<.05	<.01	.102	<.01

Note: N=52; Standardized values; * $p < .10$; ** $p < .05$; *** $p < .01$, **** $p < .001$

To test hypothesis 5, EO and EMO should have a significant association with overall performance. Given that EO and EMO were not significant predictors of

performance after holding the control variables constant, hypothesis 5 was not supported (Jose, 2013). The overall summary of hypotheses tests is reported in Table 5.

Insufficient data were available to test hypotheses 6, 7 and 8, which analyzed the subunit effect. Thus, the findings are not discussed. However, additional data collection will ensue in future studies to analyze the relationship between EO, performance, and subunits.

Table 5

Summary of hypotheses test

	Support	<i>t</i> value	<i>p</i> value
H1	Not supported	.87	.391
H2			
Innov	Not supported	.77	.446
Proac	Not supported	.09	.932
Risk	Not supported	-1.29	.204
Comp	Not supported	.72	.476
Auton	Not supported	.57	.570
H3	Supported	3.75	<.001
H4	Not supported	1.33	.189
H5	Not tested	-	-

Findings

The primary goal for this research was to explore community college EO-performance relationship. For this study, performance was measured as the composite value of non-financial performance and financial performance, both objectively reported to IPEDS. Entrepreneurial orientation and enrollment management orientation were measured as aggregates of its items from the survey instrument created for this study.

EO - Performance

For the sample that responded to the invitation email, EO was positively associated with overall performance, but the association was not significant. This suggests that although community colleges may exhibit an EO, EO-performance correlation may be due to chance (Taylor, 1990). Another possible explanation in the non-significant correlation may be in the measurement of overall performance. Applying the same formula of aggregating financial and non-financial metrics as suggested by Pearce II et al. (2010) may not be applicable in the community college setting where EO is the independent variable.

The multiple regression analysis showed that EO was not a statistically significant predictor of overall performance. After holding the control variables constant, EO contributed 1.1% to the overall model. This suggests that for the sample who responded to the survey, an entrepreneurial orientation did not have significant impact on the objective performance measures.

EO Sub-Dimensions - Performance

The overall association of entrepreneurial orientation sub-dimension with overall performance was not at significant levels. Pearson's correlation indicated that the direction of the association was positive, but the association was not at significant levels. The findings suggest that specifically in a community college setting, exhibiting innovativeness, proactiveness, risk-taking, competitiveness, or autonomy seeking are not significant behaviors of an institutional culture associated with objective performance measures.

The multiple regression analysis showed that the entrepreneurial orientation sub-dimensions were not significant predictors of objective performance measures for the sample who responded to the survey. The sub-dimensions contributed 5.4% to the overall model after holding the control variables constants. Interestingly, the sub-dimensions contributed slightly more to predict performance than entrepreneurial orientation. Overall, the model indicated that EO sub-dimensions did not have significant impact on objective performance measures.

EMO - Performance

The participating colleges that exhibited a high degree of an enrollment management orientation were found to have a positive significant correlation with the objective performance measures. While the EMO-performance association was in the predicted direction, the association is small and unlikely due to chance. The small coefficient size may be due to the effect of variations in items measuring objective performance. For example, colleges may not need to plan to increase enrollment, but may need to plan to deliver effective support services (Sharp, 2009). Nonetheless, the positive correlation between EMO and performance is supported by Bontrager and Pollock (2009), in which the authors stated that community colleges are "...embracing SEM (strategic enrollment management) as a conceptual framework for meeting today's enrollment and financial challenges..." (p. 3). The authors describe strategic enrollment management as "...achieving mission-related goals by balancing resources to maximize student success..." (Clemetsen & Rhodes, 2009, p. 15). In other words, it is likely that the participating colleges have embraced enrollment management as a planning model to maximize institutional effectiveness for meeting performance goals.

Contrary to the significant EMO-performance correlation, multiple regression analysis showed that EMO was not a significant predictor of performance. However, when comparing the overall contribution of EMO to performance while holding the control variables constant, EMO was shown to account for 2.6% variance, which is more than EO, but less than EO sub-dimensions. This finding suggests that the effect of EMO had more effect on performance than EO.

EO - EMO

The correlation between EO and EMO among the participating colleges was in the predicted direction and at significant levels. The nearly large association suggests that a college's enrollment management orientation may be expressed through an entrepreneurial orientation. Since enrollment management was a practice widely held in 4-year institutions, borrowing the idea for strategic planning would appear to show the college exhibiting innovativeness, proactiveness, risk-taking, and competitiveness (Hossler, 1984). In other words, colleges that adopt enrollment management may perceive themselves as entrepreneurial given that an enrollment management orientation consistently seeks new planning initiatives towards institutional mission and goal attainment (Bontrager, 2004b; Hossler, 1984; Morris et al., 2011; Rosenbusch, Rauch, & Bausch, 2013).

The multiple regression analysis showed that EO was a statistically significant predictor of EMO among the colleges that participated in the study. EO accounted for 19.3% variance after holding the control variables constant, while the overall model accounted for 39.5% variance. Absent prior studies to compare the effect of EO on EMO, a 39.5% variance is considered a large effect size (Cohen, 1998). This finding

suggests that focal enrollment management practices may be rooted in entrepreneurial behavior.

Limitations of Analysis

A regression analysis provided the relationship between entrepreneurial orientation, entrepreneurial orientation sub-dimension, and enrollment management orientation and community college performance measured in different models. However, a regression analysis does not indicate that performance was the cause of EO, the sub-dimensions, or EMO. The hypotheses were stated to examine the relationship between the variables, not to determine the cause of performance or enrollment management orientation. Therefore, a regression analysis was the appropriate analytic technique to address the hypotheses (Tabahnick & Fidell, 2013).

The method of selecting performance as the dependent variable for the regression analysis was based on prior studies on EO-performance. Researchers modeled, developed, and tested EO-performance in various settings in the field. Given the prior theories and findings, EO-performance relationship was hypothesized and tested in a community college setting. The theoretical framework for the relationship between EO and EMO was developed in the present study. The items measuring EMO were developed specifically for this study, and therefore, lacking external item and construct validation from the field (Tabahnick & Fidell, 2013).

Researchers can perform mediation tests when specific assumptions are met. Hypothesis 5 tested the mediation effect of EMO on EO-performance relationship. The analytic technique used for testing the mediation effect of EMO on EO-performance relationship required a statistically significant Pearson's correlation between EO-

performance, EMO-performance, and EO-EMO. Given the lack of statistically significant EO-performance relationship, a mediation test was not performed.

Conclusion

In this chapter, I presented the results and the findings of the study. The current study primarily collected data from community college leaders to understand the relationship between community college EO and performance. Subsequently, data were collected to assess community college enrollment management orientation, and its relationship with community college performance. From the population of 890 community colleges, 90 responses were available for data analysis, and overall 60 responses were used for multiple correlation and regression modeling.

The overall results suggested that an EO-performance was not statistically significant in community college setting among the participating colleges, thus contradicting prior research on EO-performance relationship. This may be attributed to the sample size or deviation from not obtaining a subjective measure of performance metrics. Furthermore, EO did not have statistically significant effect on performance, as indicated in the regression model. Additionally, EMO-performance association was statistically significant, but the regression model showed that EMO was not a significant contributor to overall performance. With the total sample size of 60 for correlation analysis and 52 for regression, the small sample size is susceptible to Type II error (Tabahnick & Fidell, 2013).

In the chapter that follows, I will discuss the findings in details. In addition, I will present the limitation of the study, and implications for research, policy, and practice.

Chapter 5

Discussion and Implications

In this section, I will discuss the findings from the data analysis viewed from the research questions. First, I will review the research questions and the hypotheses of the study. Second, I will discuss the findings in the context of the research questions. Third, I will present the limitations of the study, followed by the implications. Lastly, I conclude the chapter with a brief discussion of the next steps.

Discussion

The overall goal of the study was to explore the relationship between entrepreneurial orientation (EO) and community college performance. Additional data were collected to understand the relationship between enrollment management orientation (EMO) and performance. The research questions and hypotheses for the present study were drawn from prior EO-performance relationship research, and theorized to the community college setting. The relationships between enrollment management orientation and performance, and entrepreneurial orientation and enrollment management orientation have never been explored via survey research. Data analysis sought to answer the following research questions.

1. What is the relationship between entrepreneurial orientation and community college performance?
2. What is the relationship between enrollment management orientation and community college performance?
3. To what extent does enrollment management orientation mediate the relationship between entrepreneurial orientation and community college performance?

4. To what extent does entrepreneurial orientation predict performance in the enrollment management dimensions managed by the community college subunits?

The Relationship Between EO and Performance

A private sector firm exhibiting an EO signifies strategic planning around sales growth (Covin et al., 2006) in pursuit of profit generation. Strategic planning is paramount to not only sales growth, but also essential for firm survival, and often pursued through increasing market share through new market entry or introducing new products or services. In other words, market pressure forces firms to be more resilient, adaptive, and competitive, and firms adopt an EO to address the market challenges to sustain the economic growth (Grove, 1999; Wiklund, 1999). In this regard, private sector firms have more flexibility in revenue generation than community colleges. A variety of factors such as federal and state policies, and the social mission of the institution dictate community college operation. Although community colleges may exhibit an EO, EO was not a significant contributor to overall performance, as suggested in the results.

Performance data for the study were utilized using the IPEDS database. While other EO studies sought subjective performance data (Pearce II et al., 2010; Phelan et al., 2013), the present study utilized only objective performance data, thus deviating from the established EO-performance theoretical framework in non-profit by excluding subject measures. IPEDS data have been widely analyzed in the area of performance measurement and policy-making in higher education. However, two important points are noteworthy in the context of community college performance. The first point is the discussion of data that are representative of community college performance. The

American Association of Community Colleges has criticized IPEDS because the data set do not reflect the treatment of various student cohorts enrolled at community colleges (AACC, 2012c). On that note, Poulin and Hill (2014) noted that the IPEDS system is antiquated, cumbersome, and confusing to the point where some institutions do not report data accurately. In one example, Poulin and Hill (2014) noted that one institution did not report out-of-state students to IPEDS because these students were excluded from the funding formula. Although IPEDS data are widely held as an objective measure of performance (Dougherty et al., 2009; Kotamraju & Blackman, 2011; Romano & Djajalaksana, 2011), institutions reporting the data appear to be subjectively interpreting the reporting requirements (Poulin & Hill, 2014). The second point of interest on performance data is concerned with the quality of students. It is a well-known fact that higher performing students yield higher performance, but not all students who enroll in a community college will be a higher performing student (Mellow & Heelan, 2008). The disparity in student performance is well documented in Clotfelter, Ladd, Muschkin, and Vigdor (2013) on their study of student performance in North Carolina community colleges using data from the North Carolina Education Research Data Center. In the context of this study, simply following the measurement of objective performance may be inadequate in measuring the predictive value of EO, and its relationship with community college performance.

The Relationship Between EMO and Performance

The results showed a statistically positive correlation between EO and EMO. Moreover, EO was found to be a significant predictor of EMO. The findings support the theoretical framework noted in Chapter 3 that community colleges that exhibit an EO will

adopt an enrollment management orientation. From a theory perspective, enrollment management is a planning mechanism adopted by community colleges to set strategic priorities for meeting institutional goals (Black, 2004; Bontrager, 2004a; Dolence, 1995; Hossler, 1984; Swigger, 1990). Community colleges that institute enrollment management exhibit an enrollment management orientation expressed as adopting a series best practices (Bontrager, 2004b; Dennis, 2012; Feldman, 2003; Glenn, 2009; Lounsbury & Crumley, 2007). In other words, colleges that seek to achieve greater effectiveness in enrollment management practice readily adopt new or emerging strategies.

Entrepreneurial orientation seems to fit into this equation in that best practice adoption is an opportunity recognition activity (Lumpkin & Dess, 1996; Sarasvathy et al., 2011) exhibited by the college presidents. In its infancy (Hossler, 1984), enrollment management presented a radical shift in how community colleges strategically plan for institutional goals. As success was evident, community colleges adopted enrollment management as a routine institutional practice which permitted colleges to behave in an entrepreneurial manner (Roueche & Jones, 2005). One might argue that colleges adopting enrollment management is not an entrepreneurial activity, but an isomorphic response to demonstrate legitimacy to its stakeholders (DiMaggio & Powell, 1983). Nonetheless, once enrollment management is adopted, the colleges will continue to innovate practices deemed strategically important to the institution (Lounsbury & Crumley, 2007).

It is a reasonable expectation, as noted by Feldman (2003), that adoption of enrollment management practices will drive institutional change through the continuity of

strategic planning. The enrollment management strategies, or change in practice, recognized through an entrepreneurial behavior are subtly embedded within the institutional actor's day-to-day routine (Feldman, 2003; Lounsbury & Crumley, 2007). Over time, the entrepreneurial behavior exhibited by the institutional actors becomes the primary driver for change, and it becomes an integral part of the community college culture such that change in practice is readily acceptable. Therefore, enrollment management effectiveness is expressed through community college entrepreneurial orientation.

The second point of interest in an EO-EMO relationship suggests that enrollment management orientation reflects community colleges' recognition of students and student success through the lens of market-like practice. One may observe the principles of enrollment management as having focal activities relating to customer-centric values (student friendly, graduation), market growth (new student enrollment and retention), and market demand (new academic programs, student services). This is very much in line with the theoretical view of market orientation, which suggests that a community college engages in gathering market intelligence and plans to respond to the market (Bontrager & Moore, 2009; Morris et al., 2007). Therefore, a strong enrollment management orientation implies that the community college is engaged in intelligence gathering to learn about the market demands, and shifts internal resources to respond proactively to the market change. This is a perpetual activity most likely guided by a community college EO.

On the finding related to EMO-performance, the weak correlation between enrollment management orientation and community college performance presents an

interesting challenge to the theoretical concept of enrollment management as an institutional planning mechanism to improve institutional performance. Bontrager and Moore (2009) and others posited that utilization of an enrollment management view for institutional planning will yield greater performance. More specifically, the utilization of best practice is encouraged to meet institutional goals. The adoption of best practice implies the college exhibits a certain weakness in a key performance area where resource reallocation takes place to fund those initiatives. Absent the need for improving a key performance area, the college may be wastefully funding unnecessary initiatives. This leads into the discussion of enrollment management representing an organizational culture unified around institutional performance.

It is known that community college subunits may operate in silos where there is little to no strategic interaction taking place between subunits. From this view, an academic unit strategically plans activities independent of a student service unit (Bontrager & Moore, 2009). This organizational behavior is contradictory to an enrollment management orientation since an EMO unifies institution-wide strategic planning activities. Colleges that are more unified will be less loosely-coupled (Weick, 1976), and may have exhibited a stronger enrollment management-performance relationship. In other words, the weak EMO-performance association suggests that colleges may not be cohesive in their planning activities.

The correlation between an EMO and autonomy is an interesting observation in the discussion of EMO-performance relationship. The results showed that the correlation, while positive, is weak and not statistically significant. This suggests that community college subunits may be engaged in planning independently, as well as

having a broad representative body weighing in on strategic initiatives. Autonomy in this context may permit the self-interested actor to influence the enrollment management planning process, possibly with a disregard of the institutional goals. The influence may be from the board, subunit vice-presidents, faculty members or department heads, thus leaving the college the president with a lack of formal authority to push for his/her agenda. This observation is in line with Miller (1983) and Black (2004) who point out that colleges that centrally plan strategic activities tend to be more goal and results oriented. Therefore, the findings suggest that when institutional leaders exercise autonomy in planning focal enrollment management activities, the institution does not benefit from a higher level of effectiveness in the practice of enrollment management as an institutional planning model.

Mediating EO and Performance

For a mediation analysis, the rules state that the correlation between entrepreneurial orientation, enrollment management orientation, and performance should be statistically significant. However, for this study, the correlation between EO and performance was found not to be statistically significant. Since mediation rules were not fully met, a mediation test was not conducted. Thus from a methodological perspective, a mediation test would not yield plausible results.

Nonetheless, the mediating effect of EMO should be explored further with additional data from the field. Specifically in community colleges, enrollment management orientation is considered an important disposition for effective strategy making and planning. As shown in this study, EO had a significant effect on enrollment

management orientation, which suggests that EO is an antecedent to effectiveness in admissions, retention, and outcome planning and practices.

The application of mediating variables in the study of EO and an outcome variable (performance or another variable) pathway is somewhat lacking in the literature. The existing body of research has applied constructs such as marketing orientation, learning orientation, strategy, environmental munificence, and other variables; however, researchers have not replicated the studies using these variables in different settings. Moreover, the literature is lacking studies where researchers may have explored other variables than the ones previously applied in the field that yielded non-significant findings. With respect to studies with non-significant findings or null hypotheses were found to be true, the research journals may have rejected the manuscript for publication.

Subunit Analysis

The present study was not able to answer the research question on subunit analysis because of lack of data. Specific subunits in community colleges manage and plan initiatives to meet performance metrics specific to that subunits. Applying the EO construct would have provided an insight on the predictive power of an EO in a subunit setting within the institution. Moreover, the role of an EO has not been studied at the subunit level; therefore, data analysis to answer this research question would have contributed to the ongoing discussion on EO in the literature where unit of analysis are the institutional subunits.

To gain access to the subunit managers, the college presidents provided the contact information for their vice-presidents, thus using snowball a sampling method to reach the survey participants. While the college presidents responded to the survey, only

a few of those presidents identified their vice-presidents for the subunit analysis. When those vice-presidents were contacted to participate in the study, even less responded to the survey. If the college president notified their vice-presidents about participating in the study, then the vice-presidents may have felt confident in responding to the survey. Some essence of the legitimacy of the request to participate in the study would have supported additional data collection.

Implications

In this section, I provide the implications for future research, policy, and practice. The limitations of the study offer opportunities to modify the methodology for future research. In this section, I offer suggestions for future research, followed by changes in practice and policy that emerge because of the research. Lastly, this section concludes with the overall contribution of the study to the existing body of research on entrepreneurial orientation and enrollment management.

Research

The present study developed a scale to measure enrollment management orientation demonstrated through effectiveness in practice. The scale was developed due to lack of an existing instrument that quantitatively measured enrollment management effectiveness. With the field lacking a formal instrument to measure enrollment management effectiveness, and enrollment management becoming a normative practice in community colleges, researchers may deploy the present scale in the field for further validation. Additionally, researchers may use the instrument to understand the effectiveness of enrollment management practice in relationship to other outcome variables, such as institutional spending.

As indicated by Bontrager and Moore (2009) and Sharp (2009) institutional practices are the result of effective strategic enrollment management planning. Colleges exhibiting an enrollment management orientation were shown to be a function of an entrepreneurial orientation and it may have some prospect in predicting effectiveness in practice in other areas. Two specific areas worth further exploration are admissions and recruitment practices, and retention and outcome practices. Colleges that exhibit a high degree of enrollment management orientation may also exhibit high degree of effectiveness in other focal activities. Thus, future studies may assess variables measuring institutional practice in the area of recruitment, admissions, retention, and outcome in relationship with EO and EMO.

While the present study evaluated performance as a combined value of non-financial and financial metrics, future studies may evaluate performance as distinct measures of enrollment, retention, graduation, and revenue. As noted in Bontrager and Pollock (2009), community colleges may strategically plan for specific outcomes. For example, one college may plan to increase enrollment, while another college may plan to improve retention rates. More specifically, the role of the statewide policy environment (Fain, 2014) may have an effect on EO-performance relationship. In a recent statewide initiative in Tennessee, high school graduates can attend local community colleges tuition-free. From a marketing perspective, this initiative may drive an influx of new students to the college where the focus may switch from recruitment to retention. Therefore, future studies should consider measure of performance based on the desired outcome the college is seeking.

Unlike the for-profit sector, strategic planning in community colleges is centered on social outcomes. The state and federal policy environment mandates the social outcomes (access, retention, and graduation) of community colleges through its charter, and in other regulatory manners. Furthermore, the specific activities that colleges engage in are under the control of or scrutinized by the policy environment. For example, colleges must obtain approval for implementing a new academic program or restricted to how funds can be allocated. The intrusion of the policy environment can be observed by the current trend of initiatives such as the national graduation initiative, optional remedial education in Florida, and tuition-free community college education in Tennessee. This suggests that the policy environment is playing a role in shaping or driving aggressiveness in performance. In the context of these initiatives, the role of an EO in relationship to community college performance may need to consider varying state and federal level initiatives. As noted in this study, EO-performance relationship did not exist in the community college setting except by chance among the participating colleges. Considering these issues for the field, researchers should collect data to control for state specific policy initiatives by asking the participants to rate the level of influence the state plays in the institutional governance matters.

Researchers can study entrepreneurial orientation and enrollment management orientation as an organizational cultural phenomenon in community colleges by applying qualitative research methodology. The study participants may include the president, vice-presidents, and department heads to understand how an EO or an EMO permeates across various levels of organizational structures, how each individual perceives the level of entrepreneurial activity within the institution, and experiences that shape the proclivity

towards an entrepreneurial behavior. Additionally, analyzing enrollment management planning documents may reveal the conceptualization of strategies influenced by entrepreneurial thinking. Applying various research methodologies to the study of EO and EMO will contribute to the discussion of community college management.

While enrollment management and entrepreneurial orientation have been used for assessing performance, the relationship between those constructs and student learning outcome remains unclear in a community college setting, as well as in higher education institutions overall. The core competency of a higher education institution is to educate students. An institution that behaves entrepreneurial may exhibit teaching practices or a culture around teaching that contributes to student learning outcome. A study such as this can be undertaken by applying quantitative methodology, where the institution is the unit of analysis, and the study participants are the faculty.

Practice

Community colleges play a key role in shaping the national economic landscape. Given the importance of the institutions, some aspect of its managerial autonomy is threatened by the state policy landscape as noted in the recent Tennessee Promise initiative and Remedial Option in Florida (Fain, 2013, 2014). The external forces acting on community colleges force the institutions to take a certain shape for specific outcomes; thus, colleges plan around meeting those specific outcomes. College leaders should promote a culture of strategic planning, specifically around entrepreneurial practices. Furthermore, college leaders should breakdown departmental and divisional silos to unify institutional resources to achieve the planned outcomes.

The EO-EMO relationship supports the idea that entrepreneurial behavior leads to effectiveness in practices. However, institutional leaders have to be willing to take risks in pursuing new opportunities or change in practice. While a normative approach may be a safe risk-averse approach to management practice in community colleges (DiMaggio & Powell, 1983), entrepreneurial managers contribute to a higher degree of institutional effectiveness (Caree & Thurik, 2011). Community college presidents will find it noteworthy that promoting entrepreneurial behavior among their top leaders and managers will have a positive influence on effectiveness in practice. Therefore, community college presidents should advance the managerial effectiveness by supporting a program to strengthen the institutional actors' entrepreneurial behavior.

Managers with entrepreneurial tendencies recognize opportunities that enable them to advance their focal responsibilities. For example, environmental scanning enables managers to be proactive in anticipating changes that will affect the delivery of services in the near future. With this understanding, the college leaders can prepare the institution by identifying new mechanisms of delivering services or products to support students for the desired outcomes. For example, an analysis of student behavior trends may reveal that future students will be very technology oriented, and expect access to services at any time. With this insight, the institution can prepare staff to be more resilient to respond to the students' needs, as well as offer new products to students that allow them access to the services using a self-service delivery mechanism. By being proactive, the college is prepared to support the incoming students who expect access to institutional services in a medium more convenient to the student, thus delivering a higher level of student service.

Colleges with large student enrollment face the challenge of providing individualized service to their students while managing scarce resources. An entrepreneurial manager will recognize this issue as an opportunity to innovate new processes to deliver personalized services to students by leveraging data from the institution's student information system and other sources. Data oriented processes can provide students with self-service decision-making tools that allows students to identify supplemental credentials based on their course enrollment, risk analysis towards degree completion, or project total cost of enrollment. By drawing on entrepreneurial thinking, the college leaders and managers are able to identify technical processes that enable the institution to provide quality service to their students.

Policy

The performance variable used in this study was an aggregate value of non-financial and financial metrics data reported to IPEDS. As noted in the preceding discussion section, institutions may have subjective understanding of the data definition, thus, the data elements may not provide the whole picture of the institution. For example, community college students may stop out for some time and reenroll. Each institution may have a different reenrollment policy, which may affect headcount. For this particular situation, should the student count as a new student or a continuing student when he/she reenrolls at the college? In another example, a student stopped out after one year of attendance, reenrolled after one year, and completed the degree requirements one year after reenrollment. In this case, how should the college measure the student's time to degree? In another example, student headcounts and FTE are reported after the census period, but the census period vary from institution to institution or governed by state

policy. The variability in capturing data presents a challenge in reporting headcounts and FTE consistently across all community colleges. Thus, at the national level, the Department of Education should review and establish new guidelines for reporting data to IPEDS to account for consistent understanding of the data across all institutions while considering differences in the policy at the state level, as well as institutional policy.

Entrepreneurial behavior has implications for institutional policy-making. Higher education institutions play a vital role in sustaining economic growth in national, state, and local context (Mathews, 2013; Rothwell, 2012). Education attainment promotes entrepreneurship, and fosters competition in the labor market (Rothwell, 2012). However, current education policies force institutions to dedicate more resources to compliance rather than to pursue entrepreneurial opportunities to meet market demand or student outcome initiatives (Katsinas et al., 2013). Institutions spend scarce resources towards regulatory compliance, and consequently, divert resources from other activities that may support the institution's social mission. In this situation, a community college oriented around entrepreneurial behavior may develop institutional policies where little resources are spent on processes when regulatory matters are not a concern. In one example, colleges can improve the degree completion rates by being entrepreneurial in their policy-making process and enact an automatic graduation policy. In this policy, the institution is proactively conferring a student's degree without having the student to apply for graduation. Institutional bureaucracies are born out of institutional policies and practices that were once needed; but, in the current climate, these policies and practices in aggregate become an economic burden to the institution. An entrepreneurial view

towards institutional policy-making will lead to change in organizational behavior and practice where institutional effectiveness will be realized.

Significance

It is clear that a paradigm shift has occurred for community colleges with a renewed focus on accountability and performance. The national policy environment has given considerable importance to community colleges towards sustaining the national economy. Demographic mobility, a more globalized economic market, and a rise in global economic competitiveness have raised the awareness for the need of a highly educated national workforce that can transcend local and national boundaries. In that regard, community colleges are playing an important role in producing a credentialed citizenry that can compete in the marketplace, and contribute to the continuing growth of the national economy.

Organizations have been entrepreneurial when faced with external pressures to meet performance demand. Likewise, community colleges have taken on similar behavior, but the link between institutional entrepreneurial behavior and performance remained a gap in the literature. To address this gap in research, this study examined the role of an entrepreneurial orientation in relationship to community college performance. Entrepreneurial orientation – performance relationship has been studied widely in non-profit and for-profit setting, but the application of EO in the community college setting remained relatively nascent. Thus, the present study established a theoretical framework and developed an instrument for future studies on EO-performance in higher education, specifically in community colleges.

The next area of significance of this study is in the area of enrollment management. Among community colleges, enrollment management is a widely adopted organizational structure and a planning mechanism. Community colleges may express an orientation towards enrollment management through a formal structure or an informal structure. Nonetheless, the study of enrollment management orientation in the community college setting remained nascent. This study contributed to the existing research in enrollment management by developing an enrollment management orientation instrument that can be administered in the field for future research.

Moreover, the present research linked entrepreneurial orientation and enrollment management orientation. The significance of an EO-EMO relationship showed that an entrepreneurial orientation is an antecedent to effectiveness in strategic institutional practices. The relationship between an entrepreneurial orientation and effectiveness in practice remained a gap in research. Thus, the present study contributed to the discussion by establishing an EO-EMO theoretical framework set in community college context.

Next Steps

The next step for this study is to return to the field for additional data. This dissertation collected data on focal enrollment management practice in the area of recruitment, admissions, retention, and outcome. The theoretical relationship between entrepreneurial orientation, enrollment management orientation, and enrollment management practice will be further explored. Second, the survey instrument will be revised to focus on variables specific to entrepreneurial orientation, enrollment management, and enrollment management practice. The items pertaining to importance of enrollment management focal activities and items pertaining to the institutional

environment will be removed from the survey instrument. Lastly, the research question on subunit analysis will be revisited by returning to the field for additional data provided by the vice-presidents.

Conclusion

The theoretical premise of enrollment management is that community colleges that engage in strategic planning around the social mission yields higher overall performance. Although EMO was found to correlate with performance, it did not serve as a significant predictor of performance. The literature on enrollment management as a strategic planning mechanism suggests that colleges, regardless of size or financial resources, should exhibit effectiveness in enrollment management activities.

Enrollment management is an institutional change factor where colleges leverage institutional resources to meet social performance goals. Driven by an entrepreneurial orientation, an EMO may force community college leaders to be critical of its institutional processes and practices relative to performance goals. When put into practice, an EMO implies that colleges change practice to meet performance goals; however, the rate of change may be subjective to the performance goal and available resources.

Community colleges operate in a very distinct environment with a very controlled focus, where the colleges need to generate revenue to support student success initiatives. With scarcity in funding sources, student success initiatives suffer. When the performance metrics measuring student success show a decline, the stakeholders scrutinize the college leaders for lack of effectiveness in their practice. To maintain legitimacy to stakeholders, college leaders may engage in entrepreneurial behavior to

show progress is being made to improve institutional performance. As shown in this study, a disposition towards entrepreneurialism is not sufficient for higher performance. An entrepreneurial behavior, however, can guide effectiveness in practice that will allow the institution to be more proactive, innovative, and competitive. As for measuring community college performance, it seems subjective to other factors well beyond the institution's control.

References

- AACC. (2012a). American Association of Community Colleges 2012 Fact Sheet. Washington D. C.: AACC.
- AACC. (2012b). Reclaiming the American dream: A report from the 21st century commission of the future of community colleges. Retrieved April 24, 2012, from http://www.aacc.nche.edu/AboutCC/21st_century/Pages/default.aspx
- AACC. (2012c). The voluntary framework of accountability: Developing measures of community college effectiveness and outcomes. Washington D. C.: American Association of Community Colleges.
- AACC. (2013a). Community colleges past to present. Retrieved January 10, 2013, from <http://www.aacc.nche.edu/AboutCC/history/Pages/pasttopresent.aspx>
- AACC. (2013b). The voluntary framework of accountability metrics manual version 1.1 (Beta Testing). Washington D. C.: American Association of Community Colleges.
- Archibald, R. B., & Feldman, D. H. (2008). Explaining increases in higher education costs. *Journal of Higher Education*, 79(3), 268-295. doi: 10.1353/jhe.0.0004
- Babbie, E. (1990). *Survey research methods* (2nd ed.). Belmont, CA: Wadsworth Publishing.
- Belli, G. (2009). Nonexperimental quantitative research. In S. D. Lapan & M. T. Quartaroli (Eds.), *Research essentials: An introduction to designs and practices* (pp. 59-77). San Francisco, CA: Jossey-Bass.
- Black, J. (2004). Defining enrollment management: The structural frame. *College and University*, 79(4), 27-29.
- Blaikie, N. (2003). *Analyzing quantitative data*. London: Sage Publications.
- Boggs, G. R. (2009). Accountability and Advocacy. *Community College Journal*, 79(4), 9-11.

- Bontrager, B. (2004a). Enrollment management: An introduction to concepts and structures. *College and University*, 79(3), 11-16.
- Bontrager, B. (2004b). Strategic enrollment management: Core strategies and best practices. *College and University*, 79(4), 9-15.
- Bontrager, B., & Moore, A. (2009). Implementing SEM at the community college. In B. Bontrager & B. Clemetsen (Eds.), *Applying SEM at the community college* (pp. 181-197). Washington D.C.: American Association of Collegiate Registrars and Admissions Officers.
- Bontrager, B., & Pollock, K. (2009). Strategic enrollment management at community colleges. In B. Bontrager & B. Clemetsen (Eds.), *Applying SEM at the community college* (pp. 1-10). Washington D.C.: American Association of Collegiate Registrars and Admissions Officers.
- Brandon, K. (2011, July 14). Investing in education: The American graduation initiative. Retrieved from <http://www.whitehouse.gov/blog/Investing-in-Education-The-American-Graduation-Initiative>
- Burke, W. W., & Litwin, G. H. (1992). A causal model of organizational performance and change. *Journal of Management*, 18(3), 523-545.
- Caree, M. A., & Thurik, R. A. (2011). The impact of entrepreneurship on economic growth. In Z. J. Acs & D. B. Audretsch (Eds.), *Handbook of entrepreneurship research: An interdisciplinary survey and introduction* (2nd ed., pp. 557-594). New York, NY: Springer.
- Carillo, P. M., & Kopelman, R. E. (1991). Organization structure and productivity: Effects of subunit size, vertical complexity, and administrative intensity on operating efficiency. *Group & Organization Management*, 16(1), 44-59.
- Castrogiovanni, G. J. (1991). Environmental munificence: A theoretical assessment. *The Academy of Management Review*, 16(3), 542-565. doi: 10.2307/258917
- Chadwick, K., Barnett, T., & Dwyer, S. (2008). An empirical analysis of the entrepreneurial orientation scale. *Journal of Applied Management and Entrepreneurship*, 13(4), 64-85.

- Charles, F. F., & Bruce, K. B. (2010). Strategically planning campuses for the "newer students" in higher education. *Academy of Educational Leadership Journal*, 14(3), 15.
- Clemetsen, B. (2009). Strategic enrollment management and instructional division. In B. Bontrager & B. Clemetsen (Eds.), *Applying SEM at the community college* (pp. 33-50). Washington D.C.: American Association of Collegiate Registrars and Admissions Officers.
- Clemetsen, B., & Rhodes, J. (2009). What is a successful community college student? In B. Bontrager & B. Clemetsen (Eds.), *Applying SEM at the community college* (pp. 11-32). Washington D.C.: American Association of Collegiate Registrars and Admissions Officers.
- Clotfelter, C., Ladd, H., Muschkin, C., & Vigdor, J. (2013). Success in community college: Do institutions differ? *Research in Higher Education*, 54(7), 805-824. doi: 10.1007/s11162-013-9295-6
- Cohen, A. M., & Brawer, F. B. (2003). *The American community college* (4th ed.). San Francisco, CA: Jossey-Bass.
- Cohen, J. (1998). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Coomes, M. D. (2000). The historical roots of enrollment management. *New Directions for Student Services*(89), 5.
- Covin, J. G., Green, K. M., & Slevin, D. P. (2006). Strategic process effects on the entrepreneurial orientation–sales growth rate relationship. *Entrepreneurship: Theory & Practice*, 30(1), 57-81. doi: 10.1111/j.1540-6520.2006.00110.x
- Covin, J. G., & Slevin, D. P. (1988). The influence of organization structure on the utility of an entrepreneurial top management style. *Journal of Management Studies*, 25(3), 217-234.
- Covin, J. G., & Slevin, D. P. (1991). A conceptual model of entrepreneurship as firm behavior. *Entrepreneurship: Theory & Practice*, 16(1), 7-25.

- Craig, C. S., & McCann, J. M. (1978). Item nonresponse in mail surveys: Extent and correlates. *JMR, Journal of Marketing Research*, 15(2), 285-285.
- Creswell, J. W. (2003). *Research design: Qualitative, quantitative, and mixed methods approaches* (2nd ed.). Thousand Oaks, CA: Sage Publishing.
- D'Amico, M. M., Katsinas, S. G., & Friedel, J. N. (2012). The new norm: Community colleges to deal with recessionary fallout. *Community College Journal of Research and Practice*, 36(8), 626-631. doi: 10.1080/10668926.2012.676506
- Daniel, J. (2012). *Sampling essentials: Practical guidelines for making sampling choices*. Thousand Oaks, CA: Sage Publications.
- Davis, J. A., Marino, L. D., Aaron, J. R., & Tolbert, C. L. (2011). An examination of entrepreneurial orientation, environmental scanning, and market strategies of nonprofit and for-profit nursing home administrators. *Nonprofit and Voluntary Sector Quarterly*, 40(1), 197-211.
- Dennis, M. J. (2012). Anticipatory enrollment management (AEM) another level of enrollment management. *SEM Source*. Retrieved April 6, 2013, from <http://www4.aacrao.org/semsource/sem/indexbf19.html>
- Dess, G. G., Pinkham, B. C., & Yang, H. (2011). Entrepreneurial orientation: Assessing the construct's validity and addressing some of its implications for research in the areas of family business and organizational learning. *Entrepreneurship: Theory & Practice*, 35(5), 1077-1090. doi: 10.1111/j.1540-6520.2011.00480.x
- Dillman, D. A., Smyth, J. D., & Christian, L. M. (2008). *Internet, mail, and mixed-mode surveys: The tailored design method* (3rd ed.). Hoboken, NJ: Wiley.
- DiMaggio, P. J., & Powell, W. W. (1983). The iron cage revisited: Institutional isomorphism and collective rationality in organization fields. *American Sociological Review*, 48(2), 147-160.
- Dixon, R. R. (1995). What is enrollment management? *New Directions for Student Services*, 1995(71), 5-10. doi: 10.1002/ss.37119957103
- Dolence, M. G. (1995). *Strategic enrollment management: Cases from the field*. Washington D. C.: AACRAO.

- Dougherty, K. J., Hare, R., & Natow, R. (2009). Performance accountability systems for community colleges: Lessons for the voluntary framework of accountability for community colleges: Report to the College Board. New York, NY: CCRC.
- Engelen, A. (2011). Which department should have more influence on organization-level decisions? A strategy-dependent analysis. *Journal of Strategic Marketing, 19*(3), 229-254.
- Entrialgo, M., Fernández, E., & Vázquez, C. J. (2000). Characteristics of managers as determinants of entrepreneurial orientation: Some Spanish evidence. *Enterprise and Innovation Management Studies, 1*(2), 187-205. doi: 10.1080/14632440050119596
- Esters, L. L., McPhail, C. J., Singh, R. P., & Sygielski, J. (2008). Entrepreneurial characteristics of community college presidents: An exploratory qualitative and quantitative study. *Tertiary Education and Management, 14*(4), 345-370.
- Fabiano-Smith, L., & Goldstein, B. A. (2010). Phonological acquisition in bilingual Spanish-English speaking children. *Journal of Speech, Language, and Hearing Research, 53*, 160+.
- Fain, P. (2013). Remediation if you want it. Retrieved February 16, 2015, from <https://www.insidehighered.com/news/2013/06/05/florida-law-gives-students-and-colleges-flexibility-remediation>
- Fain, P. (2014). Aggressive pragmatism. Retrieved February 16, 2015, from <https://www.insidehighered.com/news/2014/08/26/bill-haslams-free-community-college-plan-and-how-tennessee-grabbing-spotlight-higher>
- Feldman, M. S. (2003). A performative perspective on stability and change in organizational routines. *Industrial and Corporate Change, 12*(4), 727-752.
- Fink, A. (2009). *How to conduct surveys: A step-by-step guide* (4th ed.). Thousand Oaks, CA: Sage Publications.
- Flannigan, S. L., Greene, T. G., & Jones, B. R. (2005). Setting the state for action: Entrepreneurship at work. In J. E. Roueche & B. R. Jones (Eds.), *The entrepreneurial community college* (pp. 1-11). Washington D. C.: Community College Press.

- Fowler, F. J. (1995) Improving survey questions: Design and evaluation. *Vol. 38. Applied Social Research Methods Services*. Thousand Oaks, CA: Sage Publications.
- George, B. A., & Marino, L. (2011). The epistemology of entrepreneurial orientation: Conceptual formation, modeling, and operationalization. *Entrepreneurship: Theory & Practice*, 35(5), 989-1024. doi: 10.1111/j.1540-6520.2011.00455.x
- Glenn, R. (2009). Shared enrollment services as a potential SEM strategy. *College and University*, 84(3), 79.
- Grove, A. S. (1999). *Only the paranoid survive: How to exploit the crisis points that challenge every company*: Crown Business.
- Hitt, M. A., Ireland, R. D., Keats, B. W., & Vianna, A. (1983). Measuring subunit effectiveness. *Decision Sciences*, 14(1), 87-102. doi: 10.1111/j.1540-5915.1983.tb00171.x
- Hitt, M. A., & Middlemist, R. D. (1979). A methodology to develop the criteria and criteria weightings for assessing subunit effectiveness in organizations. *The Academy of Management Journal*, 22(2), 356-374. doi: 10.2307/255595
- Hossler, D. R. (1984). *Enrollment management: An integrated approach*. New York, NY: College Board Publications.
- Huddleston, T. J. (2000). Enrollment management. *New Directions for Higher Education*, 111, 65-73.
- Ireland, R. D., Hitt, M. A., Bettis, R. A., & Porras, D. A. d. (1987). Strategy formulation processes: Differences in perceptions of strength and weaknesses indicators and environmental uncertainty by managerial level. *Strategic Management Journal*, 8(5), 469-485. doi: 10.2307/2486234
- Jaschik, S. (2012, April 23). Privatization without angst. Retrieved April 27, 2012, from <http://www.insidehighered.com/news/2012/04/23/community-college-leaders-told-privatization-wave-future>
- Jonas, P. M., & Popvics, A. (2000). Beyond the enrollment management division: The enrollment management organization. *College and University*, 76(2), 3-8.

- Jose, P. E. (2013). *Doing statistical mediation & moderation*. New York, NY: The Guildford Press.
- Katsinas, S. G., Davis, J. E., Friedel, J. N., Kob, J., & Grant, P. D. (2013). The impact of the new Pell grant restrictions on community colleges: A three state study of Alabama, Arkansas, Mississippi. Tuscloosa, AL: Education Policy Center at the University of Alabama.
- Kaynak, H., & Hartley, J. L. (2005). Exploring quality management practices and high tech firm performance. *Journal of High Technology Management Research*, 16(2005), 255-272.
- Keeling, R. P., Wall, A. F., Underhile, R., & Dungy, G. J. (2008). *Assessment reconsidered: Institutional effectiveness for student success*. Washington D. C.: NASPA.
- Kolti, L. (1993). Community colleges: Making winners out of ordinary people. In A. Levine (Ed.), *Higher education in America 1980 - 2000* (pp. 99-113). Baltimore, MD: John Hopkins University Press.
- Kotamraju, P., & Blackman, O. (2011). Meeting the 2020 American Graduation Initiative (AGI) Goal of Increasing Postsecondary Graduation Rates and Completions: A Macro Perspective of Community College Student Educational Attainment. *Community College Journal of Research and Practice*, 35(3), 202-219. doi: 10.1080/10668926.2010.526045
- Kraatz, M. S., Ventresca, M. J., & Deng, L. (2010). Precarious values and mundane innovations: Enrollment management in American liberal arts colleges. *Academy of Management Journal*, 53(6), 1521-1545.
- Lattimore, J. B., D'Amico, M. M., & Hancock, D. R. (2012). Strategic responses to accountability demands: A case study of three community colleges. *Community College Journal of Research and Practice*, 36(12), 928-940. doi: 10.1080/10668926.2012.679469
- Lawrence, P. R., & Lorsch, J. W. (1967). Differentiation and integration in complex organizations. *Administrative Science Quarterly*, 12(1), 1-47. doi: 10.2307/2391211

- Litwin, M. S. (2003). *How to assess & interpret survey psychometric* (2nd ed.). Thousand Oaks, CA: Sage Publications.
- Lounsbury, M., & Crumley, E. T. (2007). New practice creation: An institutional perspective on innovation. *Organization Studies*, 28(7), 993-1012.
- Lumpkin, G. T., & Dess, G. G. (1996). Clarifying the entrepreneurial orientation construct and linking it to performance. *The Academy of Management Review*, 21(1), 135-172.
- Lumpkin, G. T., Moss, T., Gras, D., Kato, S., & Amezcua, A. (2013). Entrepreneurial processes in social contexts: How are they different, if at all? *Small Business Economics*, 40(3), 761-783. doi: 10.1007/s11187-011-9399-3
- Mars, M. M., & Metcalf, A. S. (2009). The entrepreneurial domains of American higher education. In K. Ward & L. E. Wolf-Wendel (Eds.), *ASHE Higher Education Report* (Vol. 35). San Francisco, CA: Wiley Subscription Services.
- Mathews, D. (2013). A stronger nation through higher education 2013. Indianapolis, IN: Lumina Foundation.
- McClenney, K. (2007). Why policy matters. *Community College Journal*, 77(4), 34-36.
- Mellow, G. O., & Heelan, C. (2008). *Minding the dream: The process and practice of the American community college*. Lanham, MD: Rowman & Littlefield Publishers, Inc.
- Miles, M., Arnold, D. R., & Thompson, D. L. (1993). The interrelationship between environmental hostility and entrepreneurial orientation. *Journal of Applied Business Research*, 9(4), 12-23.
- Miller, D. (1983). The correlates of entrepreneurship in three types of firms. *Management Science*, 29(7), 770-791.
- Miller, D. (2011). Miller (1983) revisited: A reflection on EO research and some suggestions for the future. *Entrepreneurship: Theory & Practice*, 35(5), 873-894. doi: 10.1111/j.1540-6520.2011.00457.x

- Morgan, G. (1997). *Images of organization* (2nd ed.). Thousand Oaks, CA: Sage Publications.
- Morris, M. H., Coombes, S., Schindehutte, M., & Allen, J. (2007). Antecedents and outcomes of entrepreneurial and market orientation in a nonprofit context: Theoretical and empirical insights. *Journal of Leadership and Organizational Studies, 13*(4), 12-39.
- Morris, M. H., Webb, J. W., & Franklin, R. J. (2011). Understanding the manifestation of entrepreneurial orientation in the nonprofit context. *Entrepreneurship: Theory & Practice, 35*(5), 947-971. doi: 10.1111/j.1540-6520.2011.00453.x
- Narayanan, V. K., & Fahey, L. (1982). The micro-politics of strategy formulation. *Academy of Management Review, 25*-34.
- Neal, A. D. (2008). Seeking higher-ed accountability: Ending federal accreditation. *Change: The Magazine of Higher Learning, 40*(5), 24-29.
- Noel-Levitz. (2013a). 2013 marketing and student recruitment practices benchmark report for four-year and two-year institutions. Coralville, IA: Noel-Levitz. Retrieved from <http://www.noellevitz.com/BenchmarkReports>.
- Noel-Levitz. (2013b). 2013 student retention and college completion practices report for four-year and two-year institutions. Coralville, IA: Noel-Levitz. Retrieved from <http://www.noellevitz.com/BenchmarkReports>.
- Olson, K. W. (1973). The G. I. Bill and higher education: Success and surprise. *American Quarterly, 25*(5), 596-610.
- Onwuegbuzie, A. J., & Collins, K. M. T. (2007). A typology of mixed methods sampling designs in social science research. *The Qualitative Report, 12*(2), 281-316.
- Pearce II, J. A., Fritz, D. A., & Davis, P. S. (2010). Entrepreneurial orientation and the performance of religious congregations as predicted by rational choice theory. *Entrepreneurship: Theory & Practice, 34*(1), 219-248. doi: 10.1111/j.1540-6520.2009.00315.x

- Pfeffer, J., & Salancik, G. R. (1974). Organizational decision making as a political process: The case of a university budget. *Administrative Science Quarterly*, 19(2), 135-151. doi: 10.2307/2393885
- Phelan, S. E., Johnson, A. T., & Semrau, T. (2013). Entrepreneurial orientation in public schools: The view from New Jersey. *New England Journal of Entrepreneurship*, 16(1), 19-30.
- Phillips, D. L., & Clancy, K. J. (1972). Some effects of "Social Desirability" in survey studies. *American Journal of Sociology*, 77(5), 921-940.
- Pickleman, J. (2005). NHMCCD: A community partner with entrepreneurial spirit. In J. E. Roueche & B. R. Jones (Eds.), *The entrepreneurial community college* (pp. 13-22). Washington D. C.: Community College Press.
- Polit, D. F., & Beck, C. T. (2010). Generalization in quantitative and qualitative research: Myths and strategies. *International Journal of Nursing Studies*, 47(2010), 1451-1458.
- Pollock, K. (2006). Enrollment management in community colleges. *SEM Newsletter*. Retrieved July 21, 2012, from <http://www2.aacrao.org/sem/index.cfm?fa=view&id=3160>
- Porter, M. E. (2008, November 10). Why America needs an economic strategy? *BusinessWeek*. Retrieved November 15, 2013, from <http://www.businessweek.com/stories/2008-10-29/why-america-needs-an-economic-strategy>
- Poulin, R., & Hill, P. (2014). Investigation of IPEDS distance education data: System not ready for modern trends. Retrieved from <https://wcetblog.wordpress.com/2014/09/25/ipeds/>
- Rauch, A., Wiklund, J., Lumpkin, G. T., & Frese, M. (2009). Entrepreneurial orientation and business performance: An assessment of past research and suggestions for the future. *Entrepreneurship Theory and Practice*, 33(3), 761-787. doi: 10.1111/j.1540-6520.2009.00308.x
- Roach, R. (2009). A new deal for higher education? *Diverse: Issues in Higher Education*, 26(23), 12-14.

- Romano, R. M., & Djajalaksana, Y. M. (2011). Using the Community College to Control College Costs: How Much Cheaper Is It? *Community College Journal of Research and Practice*, 35(7), 539-555. doi: 10.1080/10668926.2011.539126
- Rosenbusch, N., Rauch, A., & Bausch, A. (2013). The Mediating Role of Entrepreneurial Orientation in the Task Environment–Performance Relationship: A Meta-Analysis. *Journal of Management*, 39(3), 633-659.
- Rothwell, J. (2012). Education, job openings, and unemployment in metropolitan America. *Metropolitan Policy Program at Brookings*. Washington D.C.: Brookings.
- Roueche, J. E., & Jones, B. R. (Eds.). (2005). *The entrepreneurial community college*. Washington D. C.: Community College Press.
- Ryan, A. B. (2006). Post-positivist approaches to research. In M. Antonesa, H. Fallon, A. B. Ryan, A. Ryan, T. Walsh, & L. Borys (Eds.), *Researching and Writing your thesis: A guide for postgraduate students* (pp. 12-26): MACE: Maynooth Adult and Community Education.
- Sarasvathy, S. D., Dew, N., Velamuri, R. S., & Venkataraman, S. (2011). Three views of entrepreneurial opportunity. In Z. J. Acs & D. B. Audretsch (Eds.), *Handbook of entrepreneurship research: An interdisciplinary survey and introduction* (2nd ed., pp. 77-96). New York, NY: Springer.
- Sax, L. J., Shannon, K. G., & Bryant, A. N. (2003). Assessing response rates and nonresponse bias in web and paper surveys. *Research in Higher Education*, 44(4), 409-432.
- Schiefen, K. M. (2010). *Entrepreneurial orientation of community college workforce divisions and the impact of organizational structure: A grounded theory study*: ProQuest LLC. 789 East Eisenhower Parkway, PO Box 1346, Ann Arbor, MI 48106.
- Sharp, K. (2009). Strategic enrollment management's financial dynamics. In B. Bontrager & B. Clemetsen (Eds.), *Implementing SEM at the community college* (pp. 143-165). Washington D. C.: American Association of Collegiate Registrars and Admissions Officers.

- Slaughter, S., & Leslie, L. L. (2001). Expanding and elaborating the concept of academic capitalism. *Organization*, 8(2), 154-161. doi: 10.1177/1350508401082003
- Slaughter, S., & Rhoades, G. (2004). *Academic capitalism and the new economy: Markets, state, and higher education*. Baltimore, MD: The Johns Hopkins University Press.
- Stefanos, M. (2006). Efficiency versus effectiveness in business networks. *Journal of Business Research*, 59(10–11), 1124-1132. doi: 10.1016/j.jbusres.2006.09.018
- Swigger, K. (1990). Enrollment Management in the Library School. *Journal of Education for Library and Information Science*, 30(4), 259-274. doi: 10.2307/40323420
- Tabachnick, B. G., & Fidell, L. S. (2013). *Using multivariate statistics* (6th ed.). Boston, MA: Pearson Education.
- Taylor, R. (1990). Interpretation of the correlation coefficient: A basic review. *Journal of Diagnostic Medical Sonography*, 6(1), 35-39.
- The Chronicle. (2012). College completion. Retrieved November 14, 2012, from <http://collegecompletion.chronicle.com/>
- The SOURCE. (2011). Eight important questions for eleven community college leaders: An exploration of community college issues, trends & strategies. *The Source on Community College on Community College Issues, Trends & Strategies*. Williamsville, NY: The Source on Community College on Community College Issues, Trends & Strategies.
- Vora, D., Jay, V., & Polley, D. (2012). Applying entrepreneurial orientation to a medium sized firm. *International Journal of Entrepreneurial Behavior & Research*, 18(3), 352-379.
- Wales, W., Monsen, E., & McKelvie, A. (2011). The organizational pervasiveness of entrepreneurial orientation. *Entrepreneurship Theory and Practice*, 35(5), 895-923. doi: 10.1111/j.1540-6520.2011.00451.x
- Wallace, S. R. (2005). A wave of innovation at Florida Community College. In J. E. Roueche & B. R. Jones (Eds.), *The entrepreneurial community college* (pp. 13-22). Washington D. C.: Community College Press.

- Weick, K. E. (1976). Educational organizations as loosely coupled systems. *Administrative Science Quarterly*, 21(1), 1-19.
- Whissemore, T. (2012). Voluntary framework of accountability metrics released. *Community College Journal*, 82(4).
- Wiklund, J. (1999, 1999 Fall). The sustainability of the entrepreneurial orientation--performance relationship. *Entrepreneurship: Theory and Practice*, 24, 37.
- Yongbin, Z., Yuan, L., Soo Hoon, L., & Long Bo, C. (2011). Entrepreneurial orientation, organizational learning, and performance: Evidence from China. *Entrepreneurship: Theory & Practice*, 35(2), 293-317. doi: 10.1111/j.1540-6520.2009.00359.x
- Zhu, Q., & Sarkis, J. (2004). Relationships between operational practices and performance among early adopters of green supply chain management practices in Chinese manufacturing enterprises. *Journal of Operations Management*, 22(2004), 265-289.
- Zumeta, W. M. (2011). What does it mean to be accountable? Dimensions and implications of higher education's public accountability. *Review of Higher Education*, 35(1), 131-148.

Appendix A

Variable descriptions

Survey items	Question Code	Description
IPEDSID	N/A	IPEDS number
COLL_EOI1_INNOV1	A.1	Innovativeness question 1: A strong emphasis on tried and true services and academic programs
COLL_EOI2_INNOV2	A.2	Innovativeness question 2: New services, activities, or academic programs
COLL_EOI3_INNOV3	A.3	Innovativeness question 3: Changes in services, activities, or academic programs have been mostly of a minor nature
COLL_EOP1_PROAC1	A.4	Proactiveness question 1: Is very seldom the first college to introduce new products
COLL_EOP2_PROAC2	A.5	Proactiveness question 2: We position ourselves to meet existing demands
COLL_EOP3_PROAC3	A.6	Proactiveness question 3: We rarely make changes due to perceived changes occurring in the community
COLL_EOR1_RISK1	A.7	Risk-taking question 1: A strong tendency to adopt low-risk projects
COLL_EOR2_RISK2	A.8	Risk-taking question 2: Owing to the nature of the environment it is best to explore changes
COLL_EOR3_RISK3	A.9	Risk-taking question 3: Typically adopts a cautious, wait and see posture
COLL_EOC1_COMP1	A.10	Competitiveness question 1: Rarely responds to changes and actions that other colleges initiate
COLL_EOC2_COMP2	A.11	Competitiveness question 2: Typically seeks to avoid competitive clashes with other colleges
COLL_EOC3_COMP3	A.12	Competitiveness question 3: Our actions towards other colleges can be termed accommodating
COLL_EOA1_AUTO1	A.13	Reverse coded response- Autonomy question 1: Very many changes suggested by faculty, board members, or administrators are implemented
COLL_EOA2_AUTO2	A.14	Autonomy question 2: Identifying new student services, activities and academic programs is the responsibility of a small number of individuals

COLL_EOA3_AUTO3	A.15	Autonomy question 3: Discourages independent activity to develop new student services, activities, or academic programs
COLL_EO_COLPRO	A.16A.1	College proactiveness rating
COLL_EO_COLINNO	A.16A.2	College innovativeness rating
COLL_EO_COLRISK	A.16A.3	College risk-taking rating
COLL_EO_COLCOMP	A.16A.4	College competitiveness rating
COLL_EO_COLAUTO	A.16A.5	College autonomy rating
COLL_EMO1_IMP_ESTABLISH_GOALS	B.1.A	Establishing clear enrollment goals- Importance
COLL_EMO1_EFF_ESTABLISH_GOALS	B.1.B	Establishing clear enrollment goals- Effective
COLL_EMO2_IMP_STUDENT_SUCCESS	B.2.A	Promoting student success- Importance
COLL_EMO2_EFF_STUDENT_SUCCESS	B.2.B	Promoting student success- Effective
COLL_EMO3_IMP_DETR_OPT_ENRL	B.3.A	Determining optimum enrollment- Importance
COLL_EMO3_EFF_DETR_OPT_ENRL	B.3.B	Determining optimum enrollment- Effective
COLL_EMO4_IMP_ACH_OPT_ENRL	B.4.A	Achieving optimum enrollment- Importance
COLL_EMO4_EFF_ACH_OPT_ENRL	B.4.B	Achieving optimum enrollment- Effective
COLL_EMO5_IMP_MNT_OPT_ENRL	B.5.A	Maintaining optimum enrollment- Importance
COLL_EMO5_EFF_MNT_OPT_ENRL	B.5.B	Maintaining optimum enrollment- Effective
COLL_EMO6_IMP_ACAD_PROG	B.6.A	Enabling the delivery of an effective academic program- Importance
COLL_EMO6_EFF_ACAD_PROG	B.6.B	Enabling the delivery of an effective academic program- Effective
COLL_EMO7_IMP_GEN_TUIT	B.7.A	Generating tuition- Importance
COLL_EMO7_EFF_GEN_TUIT	B.7.B	Generating tuition- Effective
COLL_EMO8_IMP_FIN_PLAN	B.8.A	Enabling financial planning- Importance
COLL_EMO8_EFF_FIN_PLAN	B.8.B	Enabling financial planning- Effective
COLL_EMO9_IMP_ORG_EFF	B.9.A	Increasing organizational efficiency- Importance
COLL_EMO9_EFF_ORG_EFF	B.9.B	Increasing organizational efficiency- Effective
COLL_EMO10_IMP_IMPRV_SRVC	B.10.A	Improving service levels- Importance
COLL_EMO10_EFF_IMPRV_SRVC	B.10.B	Improving service levels- Effective
COLL_EMO11_IMP_DATA_DECIS	B.11.A	Creating a data-rich environment to inform operational decisions- Importance
COLL_EMO11_EFF_DATA_DECIS	B.11.B	Creating a data-rich environment to inform operational decisions- Effective
COLL_EMO12_IMP_DATA_STRAT	B.12.A	Creating a data-rich environment to inform institutional strategy- Importance
COLL_EMO12_EFF_DATA_STRAT	B.12.B	Creating a data-rich environment to inform institutional strategy- Effective
COLL_EMO13_IMP_SUPP_SRVC	B.13.A	Integration of support services- Importance

COLL_EMO13_EFF_SUPP_SRVC	B.13.B	Integration of support services- Effective
COLL_EMO14_IMP_REV_MNGT	B.14.A	Tuition discounting for revenue management- Importance
COLL_EMO14_EFF_REV_MNGT	B.14.B	Tuition discounting for revenue management- Effective
COLL_EMO15_IMP_ADMS_OPP	B.15.A	Enhancing admissions operations- Importance
COLL_EMO15_EFF_ADMS_OPP	B.15.B	Enhancing admissions operations- Effective
COLL_EMO16_IMP_MRKT_IMG	B.16.A	Creating a marketing image that will reach all types of students- Importance
COLL_EMO16_EFF_MRKT_IMG	B.16.B	Creating a marketing image that will reach all types of students- Effective
COLL_EMO17_IMP_DIFF_TUIT	B.17.A	Differential tuition based on the academic program of study- Importance
COLL_EMO17_EFF_DIFF_TUIT	B.17.B	Differential tuition based on the academic program of study- Effective
COLL_EMO18_IMP_MRKT_ACAD_PROG	B.18.A	Creating academic programs based on market needs- Importance
COLL_EMO18_EFF_MRKT_ACAD_PROG	B.18.B	Creating academic programs based on market needs- Effective
COLL_EMO19_IMP_STUD_DMND	B.19.A	Offering courses on days and times based on student demand- Importance
COLL_EMO19_EFF_STUD_DMND	B.19.B	Offering courses on days and times based on student demand- Effective
COLL_EMO20_IMP_DISSM_DATA	B.20.A	Disseminating data on student performance to relevant departments- Importance
COLL_EMO20_EFF_DISS_DATA	B.20.B	Disseminating data on student performance to relevant departments- Effective
COLL_EMRCP1_IMP_TUT_SRVC	C.1.A	Tutoring services- Importance
COLL_EMRCP1_EFF_TUT_SRVC	C.1.B	Tutoring services- Effective
COLL_EMRPC2_IMP_ACAD_SUPP	C.2.A	Academic support and progress services- Importance
COLL_EMRPC2_EFF_ACAD_SUPP	C.2.B	Academic support and progress services- Effective
COLL_EMRPC3_IMP_PROF_ADVS	C.3.A	One-on-one professional advising- Importance
COLL_EMRPC3_EFF_PROF_ADVS	C.3.B	One-on-one professional advising- Effective
COLL_EMRPC4_IMP_WRK_EXP	C.4.A	Providing practical work experiences- Importance
COLL_EMRPC4_EFF_WRK_EXP	C.4.B	Providing practical work experiences- Effective
COLL_EMRPC5_IMP_STUD_COL	C.5.A	Programs designed specifically for students of color- Importance
COLL_EMRPC5_EFF_STUD_COL	C.5.B	Programs designed specifically for students of color- Effective
COLL_EMRPC6_IMP_FRST_YR	C.6.A	Programs designed for first-year students- Importance
COLL_EMRPC6_EFF_FRST_YR	C.6.B	Programs designed for first-year students- Effective
COLL_EMRPC7_IMP_VETS	C.7.A	Programs designed for Veterans- Importance
COLL_EMRPC7_EFF_VETS	C.7.B	Programs designed for Veterans- Effective

COLL_EMRPC8_IMP_ONEONONE_ADVS	C.8.A	One-on-one faculty advising- Importance
COLL_EMRPC8_EFF_ONEONONE_ADVS	C.8.B	One-on-one faculty advising- Effective
COLL_EMRPC9_IMP_THEORET_KNOWL	C.9.A	Helping students gain theoretical and pragmatic knowledge about the psychology underlying success and failure- Importance
COLL_EMRPC9_EFF_THEORET_KNOWL	C.9.B	Helping students gain theoretical and pragmatic knowledge about the psychology underlying success and failure- Effective
COLL_EMRPC10_IMP_STUDY_SESS	C.10.A	Require students to attend study-session- Importance
COLL_EMRPC10_EFF_STUDY_SESS	C.10.B	Require students to attend study-session- Effective
COLL_EMRPC11_IMP_PRI_REG	C.11.A	Offer students priority registration- Importance
COLL_EMRPC11_EFF_PRI_REG	C.11.B	Offer students priority registration- Effective
COLL_EMRPC12_IMP_FAFSA_WRKSHP	C.12.A	Offer workshops to assist students with filling out FAFSA- Importance
COLL_EMRPC12_EFF_FAFSA_WRKSHP	C.12.B	Offer workshops to assist students with filling out FAFSA- Effective
COLL_EMRA1_IMP_ONLINE_APP	D.1.A	Online admissions application- Importance
COLL_EMRA1_EFF_ONLINE_APP	D.1.B	Online admissions application- Effective
COLL_EMRA2_IMP_HIGH_SCHOOL	D.2.A	Academic programs within high schools for students to earn college credits to your institution- Importance
COLL_EMRA2_EFF_HIGH_SCHOOL	D.2.B	Academic programs within high schools for students to earn college credits to your institution- Effective
COLL_EMRA3_IMP_CAMP_VISIT	D.3.A	Campus visit days for high school students- Importance
COLL_EMRA3_EFF_CAMP_VISIT	D.3.B	Campus visit days for high school students- Effective
COLL_EMRA4_IMP_HS_VISIT_BY_ADMS	D.4.A	High school visits by admissions representative to the primary market- Importance
COLL_EMRA4_EFF_HS_VISIT_BY_ADMS	D.4.B	High school visits by admissions representative to the primary market- Effective
COLL_EMRA5_IMP_CAMP_EVNT_HS_CNLSR	D.5.A	Campus visit events designed for high school counselors- Importance
COLL_EMRA5_EFF_CAMP_EVNT_HS_CNLSR	D.5.B	Campus visit events designed for high school counselors- Effective
COLL_EMRA6_IMP_CAMP_OPN_HSE	D.6.A	Campus open house- Importance
COLL_EMRA6_EFF_CAMP_OPN_HSE	D.6.B	Campus open house- Effective
COLL_EMRA7_IMP_ONSPT_ADMS_DESC	D.7.A	Admissions decisions on the spot- Importance
COLL_EMRA7_EFF_ONSPT_ADMS_DESC	D.7.B	Admissions decisions on the spot- Effective
COLL_EMRA8_IMP_OFFCAM_HS_CNLSR	D.8.A	Off campus meetings or events for high school counselors- Importance
COLL_EMRA8_EFF_OFFCAM_HS_CNLSR	D.8.B	Off campus meetings or events for high school counselors- Effective
COLL_EMRA9_IMP_TV_ADS	D.9.A	Television ads- Importance

COLL_EMRA9_EFF_TV_ADS	D.9.B	Television ads- Effective
COLL_EMRA10_IMP_PRSP_CMP_VST	D.10.A	Encourage prospective students to schedule campus visits on the admissions web site- Importance
COLL_EMRA10_EFF_PRSP_CMP_VST	D.10.B	Encourage prospective students to schedule campus visits on the admissions web site- Effective
COLL_EMRA11_IMP_RCRT_SPC_DEMO	D.11.A	Recruitment strategies targeting specific demographics- Importance
COLL_EMRA11_EFF_RCRT_SPC_DEMO	D.11.B	Recruitment strategies targeting specific demographics- Effective
COLL_EMRA12_IMP_SOC_MEDAIA	D.12.A	Leveraging social media- Importance
COLL_EMRA12_EFF_SOC_MEDAIA	D.12.B	Leveraging social media- Effective
COLL_EMRA13_IMP_ACAD_PRG_RCRT	D.13.A	Academic program specific recruitment- Importance
COLL_EMRA13_EFF_ACAD_PRG_RCRT	D.13.B	Academic program specific recruitment- Effective
COLL_EMRA14_IMP_EXTRN_ORG	D.14.A	Partner with external organizations to increase enrollment- Importance
COLL_EMRA14_EFF_EXTRN_ORG	D.14.B	Partner with external organizations to increase enrollment- Effective
COLL_EMU1_GEOGR_LOC	E1.1	Significantly less/more concerned with state regulatory matters
COLL_EMU2_GRWTH_OPP	E1.2	Significantly /less concerned with growth opportunities
COLL_EMU3_COMPETIT	E1.3	Significantly less/more concerned with competition from other colleges
COLL_EMU4_POPU_GRWTH	E1.4	Significantly less/more concerned with population growth in the area of my college
COLL_EMU5_FED_REG	E1.5	Significantly less/more concerned with federal regulatory matters
COLL_EMU6_STATE_REG	E2.1	Significantly less/more concerned with state regulatory matters
COLL_EMU7_LOCAL_REG	E2.2	Significantly less/more concerned with local/county regulatory matters
COLL_EMU8_ACCRED	E2.3	Significantly less/more concerned with accreditation matters
COLL_EMU9_FUNDING	E2.4	Significantly more/less concerned with funding
COLL_EMI1_CENTRALIZED	F.1	Significantly more centralized/decentralized
COLL_EMI2_DEPT_PERF	F.2	Significantly more concerned with the performance of my (department/division)/college
COLL_EMI3_INST_PERF	F.3	Significantly more concerned with the college's internal/external needs
COLL_PERF_RANK_1	N/A	Highest rank
COLL_PERF_RANK_2	N/A	Second rank
COLL_PERF_RANK_3	N/A	Third rank
COLL_PERF_RANK_4	N/A	Fourth rank

COLL_PERF_RANK_5	N/A	Fifth rank
COLL_PERF_RANK_6	N/A	Sixth rank
COLL_PERF_RANK_7	N/A	Seventh rank
COLL_PERF_RANK_8	N/A	Eighth rank
COLL_PERF_RANK_9	N/A	Ninth rank
COLL_PERF_RANK_10	N/A	Lowest rank
COLL_SEX	H.1	Participant's sex
COLL_YRS_AT_COLL	H.2	Number of years the participant employed at the college
COLL_YRS_IN_POS	H.3	Number of years the participant in the current role
DIST_RESPNDT		Survey respondent; college= chief executive

IPEDS fields	IPEDS REPORT YEAR	IPEDS FIELD DESC- Absolute values
TUFEYR1_2010-11	2012	Published tuition and fees for academic year 2010-2011
TUFEYR2_2011-12	2012	Published tuition and fees for academic year 2011-2012
TUFEYR3_2012-13	2012	Published tuition and fees for academic year 2012-2013
TUFEYR0_2009-10	2012	Published tuition and fees for academic year 2009-2010
ENRTOT_2010	2010	Total men and women enrolled for credit in the fall of the academic year
FTE_2010	2010	Full-time equivalent fall enrollment
EFUG_2010	2010	Total undergraduate men and women enrolled for credit in the fall of the academic year
STUFACR_2010	2010	Student-to-faculty ratio
RET_PCF_2010	2010	The full-time retention rate is the percent of the (fall full-time cohort from the prior year minus exclusions from the fall full-time cohort) that re-enrolled at the institution as either full- or part-time in the current year
RET_PCP_2010	2010	The part-time retention rate is the percent of the (fall part-time cohort from the prior year minus exclusions from the fall part-time cohort) that re-enrolled at the institution as either full- or part-time in the current year
ASCDEG_2010	2010	Associate's degree awarded between July 1, 2009 and June 30, 2010
L4GR100_2010	2010	Graduation rate - degree/certificate within 100% of normal time
L4GR150_2010	2010	Graduation rate - degree/certificate within 150% of normal time
L4GR200_2010	2010	Graduation rate - degree/certificate within 200% of normal time

ANYAIDP_2010	2010	Financial Aid Percentage of all full-time, first-time degree/certificate-seeking undergraduate students who received any financial aid. Financial aid - Grants, loans, assistantships, scholarships, fellowships, tuition waivers, tuition discounts, veteran's benefits, employer aid (tuition reimbursement) and other monies (other than from relatives/friends) provided to students to meet expenses. This includes Title IV subsidized and unsubsidized loans made directly to students
F1TUFEFT_2010	2010	Revenues from tuition and fees per FTE
F1STAPFT_2010	2010	Revenues from state appropriations per FTE
F1LCAPFT_2010	2010	Revenues from local appropriations per FTE
F1GVGCFT_2010	2010	Revenues from government grants and contracts per FTE
F1PGGCFT_2010	2010	Revenues from private gifts, grants, and contracts per FTE
F1INVRFT_2010	2010	Revenues from investment return per FTE
F1OTRVFT_2010	2010	Other core revenues per FTE
ENRTOT_2011	2011	Total men and women enrolled for credit in the fall of the academic year
FTE_2011	2011	Full-time equivalent fall enrollment
EFUG_2011	2011	Total undergraduate men and women enrolled for credit in the fall of the academic year
STUFACR_2011	2011	Student-to-faculty ratio
RET_PCF_2011	2011	The full-time retention rate is the percent of the (fall full-time cohort from the prior year minus exclusions from the fall full-time cohort) that re-enrolled at the institution as either full- or part-time in the current year
RET_PCP_2011	2011	The part-time retention rate is the percent of the (fall part-time cohort from the prior year minus exclusions from the fall part-time cohort) that re-enrolled at the institution as either full- or part-time in the current year
ASCDEG_2011	2011	Associate's degree awarded between July 1, 2009 and June 30, 2010
L4GR100_2011	2011	Graduation rate - degree/certificate within 100% of normal time
L4GR150_2011	2011	Graduation rate - degree/certificate within 150% of normal time
L4GR200_2011	2011	Graduation rate - degree/certificate within 200% of normal time
ANYAIDP_2011	2011	Financial Aid Percentage of all full-time, first-time degree/certificate-seeking undergraduate students who received any financial aid. Financial aid - Grants, loans, assistantships, scholarships, fellowships, tuition waivers, tuition discounts, veteran's benefits, employer aid (tuition

		reimbursement) and other monies (other than from relatives/friends) provided to students to meet expenses. This includes Title IV subsidized and unsubsidized loans made directly to students
F1TUFEEFT_2011	2011	Revenues from tuition and fees per FTE
F1STAPFT_2011	2011	Revenues from state appropriations per FTE
F1LCAPFT_2011	2011	Revenues from local appropriations per FTE
F1GVGCFT_2011	2011	Revenues from government grants and contracts per FTE
F1PGGCFT_2011	2011	Revenues from private gifts, grants, and contracts per FTE
F1INVRFT_2011	2011	Revenues from investment return per FTE
F1OTRVFT_2011	2011	Other core revenues per FTE
ENRTOT_2012	2012	Total men and women enrolled for credit in the fall of the academic year
FTE_2012	2012	Full-time equivalent fall enrollment
EFUG_2012	2012	Total undergraduate men and women enrolled for credit in the fall of the academic year
STUFACR_2012	2012	Student-to-faculty ratio
RET_PCF_2012	2012	The full-time retention rate is the percent of the (fall full-time cohort from the prior year minus exclusions from the fall full-time cohort) that re-enrolled at the institution as either full- or part-time in the current year
RET_PCP_2012	2012	The part-time retention rate is the percent of the (fall part-time cohort from the prior year minus exclusions from the fall part-time cohort) that re-enrolled at the institution as either full- or part-time in the current year
ASCDEG_2012	2012	Associate's degree awarded between July 1, 2009 and June 30, 2010
L4GR100_2012	2012	Graduation rate - degree/certificate within 100% of normal time
L4GR150_2012	2012	Graduation rate - degree/certificate within 150% of normal time
L4GR200_2012	2012	Graduation rate - degree/certificate within 200% of normal time
ANYAIDP_2012	2012	Financial Aid Percentage of all full-time, first-time degree/certificate-seeking undergraduate students who received any financial aid. Financial aid - Grants, loans, assistantships, scholarships, fellowships, tuition waivers, tuition discounts, veteran's benefits, employer aid (tuition reimbursement) and other monies (other than from relatives/friends) provided to students to meet expenses. This includes Title IV subsidized and unsubsidized loans made directly to students
F1TUFEEFT_2012	2012	Revenues from tuition and fees per FTE

F1STAPFT_2012	2012	Revenues from state appropriations per FTE
F1LCAPFT_2012	2012	Revenues from local appropriations per FTE
F1GVGCFT_2012	2012	Revenues from government grants and contracts per FTE
F1PGGCFT_2012	2012	Revenues from private gifts, grants, and contracts per FTE
F1INVRFT_2012	2012	Revenues from investment return per FTE
F1OTRVFT_2012	2012	Other core revenues per FTE
INSTSIZE	--	Institution size category based on total students enrolled for credit. 1: Under 1,000; 2: 1,000 - 4,999; 3 :5,000 - 9,999; 4: 10,000 - 19,999; 5: 20,000 or more

IPEDS fields	Absolute values
STATE	Community college state
SETTING	College size and setting based on Carnegie Classification
HEADCONT	Total headcount reported
GR_RATE	Graduation rate reported
XFER_RATE	Transfer rate reported
COHORT_YEAR	Cohort year for graduation and transfer rate
NET_PRICE	Net tuition

Item Composite Fields	
INNOV	Innovativeness composite score. Survey items A.1 + A.2 + A.3
PROAC	Proactiveness composite score. Survey items A.4 + A.5 + A.6
RISK	Risk-taking composite score. Survey items A.7 + A.8 + A.9
COMPET	Competitiveness composite score. Survey items A.10 + A.11 + A.12
AUTON	Autonomy composite score. Survey items A.13 + A.14 + A.15; Item A.13 is reverse coded.
EO5	Entrepreneurial Orientation composite score: INNOV + PROAC + RISK + COMPET + AUTON
EO3	Entrepreneurial Orientation composite score: INNOV + PROAC + RISK
EMO	Enrollment Management Orientation effectiveness: Composite score of items: B.1.A to B.20.A
EMPRC	Retention and Completion practice effectiveness. Composite score of items: C.1.A to C.12.A
EMRA	Recruitment and Admissions practice effectiveness. Composite score of items: D.1.A to D.14.A
INSTEFF	Institutional effectiveness composite score: EMPRC +EMRA

EMO_I	Enrollment Management Orientation importance: Composite score of items: B.1.B to B.20.B
EMPRC_I	Retention and Completion practice importance. Composite score of items: C.1.B to C.12.B
EMRA_I	Recruitment and Admissions practice effectiveness. Composite score of items: D.1.B to D.14.B
INSTEFF_I	Institutional effectiveness importance composite score: EMPRC_I + EMRA_I
EXENV	External environmental munificence. Composite score of items: E.1.1 to E.2.4
INENV	Internal environmental munificence. Composite score of items: F.1 to F.3
Chg_FTE	FTE percentage change from 2010 to 2012
Chg_EFUG	Full-time undergraduate percentage change from 2010 to 2012
Chg_STUFAC	Student to faculty ratio percentage change from 2010 to 2012
Chg_RETF	Full-time retention rate percentage change from 2010 to 2012
Chg_RETP	Part-time retention rate percentage change from 2010 to 2012
Chg_ASDEG	Associate degrees awarded percentage change from 2010 to 2012
Chg_GR100	100% graduation rate percentage change from 2010 to 2012
Chg_GR150	150% graduation rate percentage change from 2010 to 2012
Chg_GR200	200% graduation rate percentage change from 2010 to 2012
Chg_ANYAID	Any financial aid awarded percentage change from 2010 to 2012
Chg_REV	Total revenue percentage change from 2010 to 2012

Appendix B

IRB Approval Letter



March 21, 2014

Bhavesh Bambhrolia
11 Stoneybrook Court
Columbus, NJ 08022

Dear Bhavesh Bambhrolia:

In accordance with the University's IRB policies and 45 CFR 46, the Federal Policy for the Protection of Human Subjects, I am pleased to inform you that the Rowan University Institutional Review Board (IRB) has approved your project, category 7, through its expedited review process.

IRB application number: 2014-171

Project Title: Entrepreneurial Orientation and Community College Performance

In accordance with federal law, this approval is effective for **one calendar year** from the date of this letter. If your research project extends beyond that date or if you need to make significant modifications to your study, you must notify the IRB immediately. Please reference the above-cited IRB application number in any future communications with our office regarding this research.

Please retain copies of consent forms for this research for three years after completion of the research.

If, during your research, you encounter any unanticipated problems involving risks to subjects, you must report this immediately to Dr. Harriet Hartman (hartman@rowan.edu or call 856-256-4500, ext. 3787) or contact Dr. Shreekanth Mandayam, Associate Provost for Research (shreek@rowan.edu or call 856-256-5150).

If you have any administrative questions, please contact Karen Heiser (heiser@rowan.edu or 856-256-5150).

Sincerely,

Harriet Hartman, Ph.D.
Chair, Rowan University IRB

c: Ane Turner Johnson, Educational Services, Administration, Higher Education, James Hall

Office of Research
Bole Hall Annex
201 Mullica Hill Road
Glassboro, NJ 08028-1701

856-256-5150
856-256-4425 fax

Appendix C

Survey Instrument

[A] Entrepreneurial Orientation

Instructions: Please select a single number to indicate which of the two statements is most true for your college. Selecting a one (1) indicates strong agreement with the first statement, while a seven (7) indicated a strong agreement with the second statement, and a four (4) indicates both are equally true. The numbers in between represent differing degrees of agreement with one of the two statements.

[1] In general, the leadership in our college favors...

A strong emphasis on tried and true services and academic programs	1	2	3	4	5	6	7	A strong emphasis on new services and academic programs
--	---	---	---	---	---	---	---	---

[2] How many new services, activities, or academic programs has your college offered in the last 3 years?

Very few	1	2	3	4	5	6	7	Very many
----------	---	---	---	---	---	---	---	-----------

[3] At my college...

Changes in services, activities, or academic programs have been mostly of a minor nature	1	2	3	4	5	6	7	Changes in services, activities, or academic programs have been quite dramatic
--	---	---	---	---	---	---	---	--

[4] My college...

Is very seldom the first college to introduce new products, student service, academic program, administrative techniques, operating technologies, etc.	1	2	3	4	5	6	7	Is very often the first college to introduce new products, student service, academic program, administrative techniques, operating technologies, etc
--	---	---	---	---	---	---	---	--

[5] At my college...

We position ourselves to meet existing demands	1	2	3	4	5	6	7	We position ourselves to meet emerging demands
--	---	---	---	---	---	---	---	--

[6] At my college...

We rarely make changes due to perceived changes occurring in the community	1	2	3	4	5	6	7	We continually make changes due to perceived changes occurring in the community
--	---	---	---	---	---	---	---	---

[7] In general, the leadership of my college has...

A strong tendency to adopt low-risk projects, student services, administrative techniques, operating technologies, or academic programs with normal and certain results	1	2	3	4	5	6	7	A strong tendency to adopt low-risk projects, student services, administrative techniques, operating technologies, or academic programs with chances of dramatic results
---	---	---	---	---	---	---	---	--

[8] In general, the leadership of my college believes that...

Owing to the nature of the environment it is best to explore changes gradually via cautious incremental behavior	1	2	3	4	5	6	7	Owing to the nature of the environment bold wide ranging acts are necessary to achieve the college's objectives
--	---	---	---	---	---	---	---	---

[9] When confronted with the decision-making situations involving uncertainty, our college...

Typically adopts a cautious, wait and see posture in order to minimize the probability of making costly decisions	1	2	3	4	5	6	7	Typically adopts a bold aggressive posture in order to maximize the probability of exploiting potential opportunities
---	---	---	---	---	---	---	---	---

[10] In dealing with other colleges, my college...

Rarely responds to changes and actions that other colleges initiate	1	2	3	4	5	6	7	Always responds to change and actions that other colleges initiate
---	---	---	---	---	---	---	---	--

[11] When dealing with other colleges, my college...

Typically seeks to avoid competitive clashes with other colleges	1	2	3	4	5	6	7	Typically adopts a very competitive strategy towards other colleges
--	---	---	---	---	---	---	---	---

[12] At my college...

Our actions towards other colleges can be termed accommodating	1	2	3	4	5	6	7	Our actions towards other colleges can be termed aggressive
--	---	---	---	---	---	---	---	---

[13] At my college...

Very many changes suggested by faculty, board members, or administrators are implemented	1	2	3	4	5	6	7	Very few changes suggested by faculty, board members, or administrators are implemented
--	---	---	---	---	---	---	---	---

[14] At my college...

Identifying new student services, activities and academic programs is the responsibility of a small number of individuals	1	2	3	4	5	6	7	Identifying new student services, activities and academic programs is done by all members including faculty, board, and non-administrative staff
---	---	---	---	---	---	---	---	--

[15] My college...

Discourages independent activity to develop new student services, activities, or academic programs	1	2	3	4	5	6	7	Encourages independent activity to develop new student services, activities, or academic programs
--	---	---	---	---	---	---	---	---

[16A] Relative to peer institutions, how does your college rate on:

	Much more	More	About the same	Less	Much less
1. Proactiveness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Innovativeness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Risk-taking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Competitiveness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Autonomy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

[B] Enrollment Management Orientation

Instructions: For each focal enrollment management activity, please rate the **(A)** importance of the activity and **(B)** effectiveness of the activity. If the focal enrollment management activity is not applicable, please select **N/A**.

Scale (A): 1- Not at all important 7- Highly important Scale (B): 1- Not at all effective 7- Highly effective	(A) Overall, how important is the focal enrollment management activity to your college?	(B) Overall, how effective your college with the execution of the focal enrollment management activity?
1. Establishing clear enrollment goals	1 2 3 4 5 6 7 N/A	1 2 3 4 5 6 7 N/A
2. Promoting student success	1 2 3 4 5 6 7 N/A	1 2 3 4 5 6 7 N/A
3. Determining optimum enrollment	1 2 3 4 5 6 7 N/A	1 2 3 4 5 6 7 N/A
4. Achieving optimum enrollment	1 2 3 4 5 6 7 N/A	1 2 3 4 5 6 7 N/A
5. Maintaining optimum enrollment	1 2 3 4 5 6 7 N/A	1 2 3 4 5 6 7 N/A
6. Enabling the delivery of an effective academic program	1 2 3 4 5 6 7 N/A	1 2 3 4 5 6 7 N/A
7. Generating tuition	1 2 3 4 5 6 7 N/A	1 2 3 4 5 6 7 N/A
8. Enabling financial planning	1 2 3 4 5 6 7 N/A	1 2 3 4 5 6 7 N/A
9. Increasing organizational efficiency	1 2 3 4 5 6 7 N/A	1 2 3 4 5 6 7 N/A
10. Improving service levels	1 2 3 4 5 6 7 N/A	1 2 3 4 5 6 7 N/A
11. Creating a data-rich environment to inform operational decisions	1 2 3 4 5 6 7 N/A	1 2 3 4 5 6 7 N/A
12. Creating a data-rich environment to inform institutional strategy	1 2 3 4 5 6 7 N/A	1 2 3 4 5 6 7 N/A
13. Integration of support services	1 2 3 4 5 6 7 N/A	1 2 3 4 5 6 7 N/A
14. Tuition discounting for revenue management	1 2 3 4 5 6 7 N/A	1 2 3 4 5 6 7 N/A
15. Enhancing admissions operations	1 2 3 4 5 6 7 N/A	1 2 3 4 5 6 7 N/A
16. Creating a marketing image that will reach all types of students	1 2 3 4 5 6 7 N/A	1 2 3 4 5 6 7 N/A
17. Differential tuition based on the academic program of study	1 2 3 4 5 6 7 N/A	1 2 3 4 5 6 7 N/A
18. Creating academic programs based on market needs	1 2 3 4 5 6 7 N/A	1 2 3 4 5 6 7 N/A
19. Offering courses on days and times based on student demand	1 2 3 4 5 6 7 N/A	1 2 3 4 5 6 7 N/A
20. Disseminating data on student performance to relevant departments	1 2 3 4 5 6 7 N/A	1 2 3 4 5 6 7 N/A

[C] Retention and Completion

Instructions: For each focal retention and completion activity, please rate the **(A)** importance of the activity and **(B)** effectiveness of the activity. If the focal enrollment management activity is not applicable, please select **N/A**.

Scale (A): 1- Not at all important 7- Highly important Scale (B): 1- Not at all effective 7- Highly effective	(A) Overall, how important is the focal retention and completion activity to your college?	(B) Overall, how effective is your college with the execution of the focal retention and completion activity?
1. Tutoring services	1 2 3 4 5 6 7 N/A	1 2 3 4 5 6 7 N/A
2. Academic support and progress services	1 2 3 4 5 6 7 N/A	1 2 3 4 5 6 7 N/A
3. One-on-one professional advising	1 2 3 4 5 6 7 N/A	1 2 3 4 5 6 7 N/A
4. Providing practical work experiences	1 2 3 4 5 6 7 N/A	1 2 3 4 5 6 7 N/A
5. Programs designed specifically for students of color	1 2 3 4 5 6 7 N/A	1 2 3 4 5 6 7 N/A
6. Programs designed for first-year students	1 2 3 4 5 6 7 N/A	1 2 3 4 5 6 7 N/A
7. Programs designed for Veterans	1 2 3 4 5 6 7 N/A	1 2 3 4 5 6 7 N/A
8. One-on-one faculty advising	1 2 3 4 5 6 7 N/A	1 2 3 4 5 6 7 N/A
9. Helping students gain theoretical and pragmatic knowledge about the psychology underlying success and failure	1 2 3 4 5 6 7 N/A	1 2 3 4 5 6 7 N/A
10. Require students to attend study-session	1 2 3 4 5 6 7 N/A	1 2 3 4 5 6 7 N/A
11. Offer students priority registration	1 2 3 4 5 6 7 N/A	1 2 3 4 5 6 7 N/A
12. Offer workshops to assist students with filling out FAFSA	1 2 3 4 5 6 7 N/A	1 2 3 4 5 6 7 N/A

[D] Admission and Recruitment

Instructions: For each focal admission and recruitment activity, please rate the **(A)** importance of the activity and **(B)** effectiveness of the activity. If the focal enrollment management activity is not applicable, please select **N/A**.

	Scale (A): 1- Not at all important 7- Highly important	(A) Overall, how important is the focal admission and recruitment activity to your college?	(B) Overall, how effective is your college with the execution of the focal admission and recruitment activity?
	Scale (B): 1- Not at all effective 7- Highly effective		
1. Online admissions application		1 2 3 4 5 6 7 N/A	1 2 3 4 5 6 7 N/A
2. Academic programs within high schools for students to earn college credits to your institution		1 2 3 4 5 6 7 N/A	1 2 3 4 5 6 7 N/A
3. Campus visit days for high school students		1 2 3 4 5 6 7 N/A	1 2 3 4 5 6 7 N/A
4. High school visits by admissions representative to the primary market		1 2 3 4 5 6 7 N/A	1 2 3 4 5 6 7 N/A
5. Campus visit events designed for high school counselors		1 2 3 4 5 6 7 N/A	1 2 3 4 5 6 7 N/A
6. Campus open house		1 2 3 4 5 6 7 N/A	1 2 3 4 5 6 7 N/A
7. Admissions decisions "on the spot"		1 2 3 4 5 6 7 N/A	1 2 3 4 5 6 7 N/A
8. Off campus meetings or events for high school counselors		1 2 3 4 5 6 7 N/A	1 2 3 4 5 6 7 N/A
9. Television ads		1 2 3 4 5 6 7 N/A	1 2 3 4 5 6 7 N/A
10. Encourage prospective students to schedule campus visits on the admissions web site		1 2 3 4 5 6 7 N/A	1 2 3 4 5 6 7 N/A
11. Recruitment strategies targeting specific demographics		1 2 3 4 5 6 7 N/A	1 2 3 4 5 6 7 N/A
12. Leveraging social media		1 2 3 4 5 6 7 N/A	1 2 3 4 5 6 7 N/A
13. Academic program specific recruitment		1 2 3 4 5 6 7 N/A	1 2 3 4 5 6 7 N/A
14. Partner with external organizations to increase enrollment		1 2 3 4 5 6 7 N/A	1 2 3 4 5 6 7 N/A

[E1] Environmental Munificence

Instructions: Please select a single number to indicate which of the two statements is most true for your college. Selecting a one (1) indicates strong agreement with the first statement, while a seven (7) indicated a strong agreement with the second statement, and a four (4) indicates both are equally true. The numbers in between, represent differing degrees of agreement with one of the two statements.

		To be effective/efficient, my college is...							
1.	Significantly less concerned with the geographic location of the college	1	2	3	4	5	6	7	Significantly more concerned with the geographic location of the college
2.	Significantly more concerned with growth opportunities	1	2	3	4	5	6	7	Significantly less concerned with growth opportunities
3.	Significantly less concerned with competition from other colleges	1	2	3	4	5	6	7	Significantly more concerned with competition from other colleges
4.	Significantly less concerned with population growth in the area of my college	1	2	3	4	5	6	7	Significantly more concerned with population growth in the area of my college
5.	Significantly less concerned with federal regulatory matters	1	2	3	4	5	6	7	Significantly more concerned with federal regulatory matters

[E2] Environmental Munificence

Instructions: Please select a single number to indicate which of the two statements is most true for your college. Selecting a one (1) indicates strong agreement with the first statement, while a seven (7) indicated a strong agreement with the second statement, and a four (4) indicates both are equally true. The numbers in between, represent differing degrees of agreement with one of the two statements.

		To be effective/efficient, my college is...							
1.	Significantly less concerned with state regulatory matters	1	2	3	4	5	6	7	Significantly more concerned with state regulatory matters
2.	Significantly less concerned with local/county regulatory matters	1	2	3	4	5	6	7	Significantly more concerned with local/county regulatory matters
3.	Significantly less concerned with accreditation matters	1	2	3	4	5	6	7	Significantly more concerned with accreditation matters
4.	Significantly more concerned with funding	1	2	3	4	5	6	7	Significantly less concerned with funding

[E3] Internal Environmental

Instructions: Please select a single number to indicate which of the two statements is most true for your college. Selecting a one (1) indicates strong agreement with the first statement, while a seven (7) indicated a strong agreement with the second statement, and a four (4) indicates both are equally true. The numbers in between, represent differing degrees of agreement with one of the two statements.

		[A] The planning process in college is...							
1.	Significantly more centralized	1	2	3	4	5	6	7	Significantly more decentralized
		[B] During the planning process, my college is...							
2.	Significantly more concerned with the performance of my department/division	1	2	3	4	5	6	7	Significantly more concerned with college performance
3.	Significantly more concerned with the college's internal needs	1	2	3	4	5	6	7	Significantly more concerned with the college's external needs

[F] Performance

Instructions: Please rank these performance measures in the order of importance to your college/subunit. Please number each box in order of preference from 1 to 10. 1- Highest preference ... 10- Lowest preference

	Enrollment
	Retention
	Graduation
	Faculty-Student Ratio
	Funding
	Title IV Disbursement
	Reduce Student Debt
	Job Placement
	Competency Based Education
	Improve Developmental Education

[G] Participant Information

[1] Please indicate your sex: Male Female No answer

[2] Please indicate the number of years employed at your college: _____

[3] Please indicate the number of years in your current role at the college: _____

[H] A 360-degree analysis will provide insight into the subunit effect on community college entrepreneurial orientation-performance relationship. Your assistance with identifying executives from student affairs, academic affairs, and finance divisions within your institution who can provide responses to the survey for a 360-degree analysis is greatly appreciated. Please enter their email addresses below, and within the next 48 hours, they will receive a customized survey invitation by email with subject line "Invitation: Survey of Community College Entrepreneurial Orientation". Please encourage your executives to assist with the data collection required to perform the 360-degree organizational level analysis of community college entrepreneurial orientation.

Email of vice-president for academic affairs or equivalent:

Email of vice-president for student services or equivalent:

Email of vice-president for finance or equivalent:

[I] If you would like to obtain a copy of the survey results, please enter your email address below. The survey results will be made available at the conclusion of the research project.

Your email address:

Appendix D

Sample Invitation Email Text

Dear [College President Name],

My name is Bhavesh Bambhrolia, and I am a doctoral candidate at Rowan University in Glassboro, NJ. Short time ago, I wrote to you for your participation in a national survey that I am conducting for my dissertation on the topic of entrepreneurship in community colleges. I am asking community college leaders to reflect on the various aspects of institutional strategy and planning process.

The survey should take you no more than 20 minutes to complete, and you will be responding to the strategy and planning process at [college name]. To access the survey or to review the IRB and research information, please click the link below or copy and paste the survey link into your favorite web browser.

Survey, IRB, and research information link:

[\[survey link\]](#)

I am asking for your help with the data collection efforts in this area. The insight about [college name] will be of great value to the study and in advancing community college management practice, research, and policy.

Should you have any further questions or comments, please feel free to contact me. I appreciate your time and consideration in completing this survey. Thank you for participating in this study!

Many thanks,
Bhavesh Bambhrolia
Doctoral Candidate
Rowan University
College of Education
Email: bambhr22@students.rowan.edu
Phone: [609-738-0395](tel:609-738-0395)