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CORRELATIONAL STUDY OF THE RELATIONSHIPS BETWEEN INDIVIDUAL
ENTREPRENEURIAL ORIENTATIONS OF COMMUNITY COLLEGE LEADERS AND
COLLEGE STUDENTS' SUCCESS

By

MICHAEL CLAY MCPHERSON

A doctoral dissertation submitted to the
College of Education
in partial fulfillment of the requirements
for the degree Doctor of Education
in Organizational Leadership

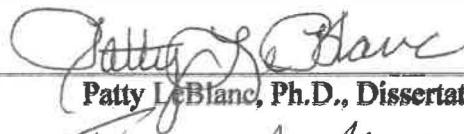
Southeastern University
July, 2020

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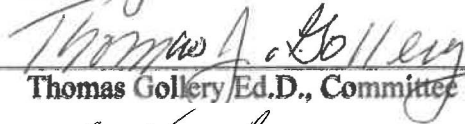
by

MICHAEL CLAY MCPHERSON

Dissertation Approved: 7-9-2020



Patty LeBlanc, Ph.D., Dissertation Chair



Thomas Gollery Ed.D., Committee Member



Leroy VanWhy, Ph.D., Committee Member



James Anderson, Dean, Doctor of Education

DEDICATION

I would like to recognize the Lord Jesus Christ for helping me complete this journey. Without His help, I would have never been able to complete this task. I also want to recognize my wife, Wendy, who has supported me at every step. I would also like to thank Frank, Antoinette, Coni, and Ryan for all of the support and help they have given me over the last three years.

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ABSTRACT

The purpose of this study was to examine the mathematical relationships between the individual entrepreneurial orientation (IEO) of academic leaders in the Florida College System and their institutions' student success rates. Some leaders in academia have suggested that academic leaders of postsecondary institutions adopt entrepreneurial behaviors and traits in an effort to adapt to rapidly changing environments. In this descriptive study, academic leaders in the Florida College system were surveyed to determine their IEO. The researcher obtained student success rates for each institution in the Florida College System. Data were analyzed using Pearson r correlations between IEO scores of academic leaders who responded to the survey (president, vice-president, academic dean, or other) and institutional student success rates to determine whether significant correlations existed between IEO and student success rates. Linear regression was also conducted to determine whether IEO was a predictor of student success. The results indicated that the average IEO scores of the Florida College System leaders was high; however, no significant relationships between IEO and student success were evident in this sample. In addition, IEO scores were not significant predictors of student success rates.

Keywords: individual entrepreneurial orientation, student success, higher education, academic entrepreneurship, Florida College System

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I. INTRODUCTION

Most institutions of higher education face challenges in enrollment and finances due to increased competition, shifting student demographics, the growth of online learning, and decreases in high school graduation rates (Cleverley-Thompson, 2016). Many higher education leaders have been encouraged to adopt entrepreneurial attitudes and strategies to address these and other pressing issues (American Association of Community Colleges [AACC], 2013; Bowyer & Vitale, 2018; Cleverley-Thompson, 2016). However, the ultimate goal of all academic leaders is to ensure student success (AACC, 2013). This study explored the relationships between individual entrepreneurial orientations (IEOs) of academic leaders in the Florida College System and college student success rates.

Background of the Study

One of the key requirements of higher education leaders is a deep commitment to student success (Aspen Institute, 2013). To this end, the American Association of Community Colleges (2013) recommended that emerging, new, and experienced academic leaders strive to develop competencies that lead to student success. However, helping students achieve their educational goals is increasingly difficult due to pressures to adapt to a rapidly changing society and marketplace (Cleverley-Thompson, 2016). The 28 colleges that make up the Florida College System (FCS) are no exception to this trend. Formerly known as community colleges, the institutions that comprise the FCS must adapt to remain competitive. Changes in law and policies, society, and the economy create new pressures that force these institutions to adjust

many of their systems and strategies for ensuring student success and maintaining a viable, thriving institution.

Organizations such as the American Association of Community Colleges (2013) have recommended that higher education leaders develop new competencies to lead higher education organizations through the changes required to adapt to the needs of the 21st century community college. Entrepreneurial mindset, skills, and strategies are among the newer competencies that higher education leaders must develop to ensure the continued success of their institutions (AACC, 2013; Bowyer & Vitale, 2018; Cleverley-Thompson, 2016). If academic leaders want to ensure the ability of their institutions to remain successful, effective, and competitive amid rapid change, academic leaders need to cultivate entrepreneurial skills (Cleverley-Thompson, 2016).

The definition of entrepreneurship has evolved over time. The word *entrepreneur* originated from the French word that meant “undertaker” (Bosman & Fernhaber, 2018). The word was used to identify individuals who had undertaken a major project. By the 1940s, the word had evolved to describe an individual who was known as a change agent (Bosman & Fernhaber, 2018). In the 1980s, the term entrepreneur was used to refer to a person who identified resources and who exploited opportunities (Bosman & Fernhaber, 2018). The concept of entrepreneurship was refined at the turn of the 21st century and has been defined as “the discovery, evaluation, and exploitation of opportunities” (Bosman & Fernhaber, 2018, p. 9). The present study focused on this latest definition of entrepreneurship.

Theoretical Underpinnings of the Study

Mindset Theory

Mindset theory has gained a great deal of attention in recent organizational research because of its potential to influence both individuals' and organizations' outcomes (French, 2016). The scholarly theory of mindset emerged in the early twentieth century from the field of cognitive psychologists. Initially, mindset theory focused on the cognitive processes activated when individuals completed a task (French, 2016). Mindset theory in cognitive psychology continues to focus on task completion and cognitive processes. However, divergent conceptualizations of mindset theory have evolved in other scientific disciplines (Bosman & Fernhaber, 2018; Dweck, 2016; French, 2016; Naumann, 2017). Currently, three main streams of mindset research have emerged from the disciplines of cognitive psychology, social psychology/organizational leadership, and positive psychology (French, 2016).

Cognitive psychologists conceptualize mindset as cognitive phases in which individuals possess both deliberative and implemental mindsets (French, 2016). Deliberative mindset is defined as the total of the cognitive processes activated before a person makes a decision (French, 2016). During this complex set of processes, the individual goes through three cognitive phases to assess the desirability and feasibility of accomplishing a specific goal. In the deliberative mindset process, individuals analyze information from the past, present, and future. A person who engages in the deliberative mindset process first analyzes current information to determine whether an outcome is possible and beneficial, then attempts to process any previously known information. Finally, a person engaged in a deliberative mindset process openly pursues and processes new information to aid decision-making (French, 2016).

Implemental mindset contrasts substantively from deliberative mindset. Implemental mindset refers to the cognitive processes used by individuals to accomplish a specific goal once a decision has been made to pursue it. People engaged in implemental mindsets tend to selectively process available data and stimuli (French, 2016; Naumann, 2017). Implemental mindsets are beneficial in pursuing goals since they filter information and stimuli that support the pursuit of the goal and tend to disregard information that would discourage the pursuit of the selected goal. People who exercise an implemental mindset consider factors that influence when, where, and how to act and when to filter out extraneous information; once accomplished, people who maintain implemental mindsets optimistically analyze information connected to the pursuit of the goal (French, 2016).

Whereas cognitive psychologists identify mindset as a specific set of cognitive processes, social psychologists and organizational leadership scholars define mindset differently. As organizational leadership scholars adapted the concept of mindset to their field, the construct was redefined by some scholars as the process by which people and organizations make sense of the world around them (Bosman & Fernhaber, 2018; French, 2016). Central to this description of mindset theory is the premise that human beings are limited in their ability to absorb and process the vast and complex volumes of information that surround people. Therefore, humans selectively filter and absorb information based on cognitive filters (Bosman & Fernhaber, 2018). Mindsets are powerful because they are “used throughout the totality of an individual or organization's cognition” (French, 2016, p. 678). In other words, mindset is a cognitive process used to filter and analyze all the information and knowledge individuals encounter. Because mindset is always at work in the background, mindset influences the ways that people receive,

process, and react to information; as a result, mindsets predispose individuals to respond to a task in a particular way. In addition, mindsets also guide behavior (French, 2016).

The emerging positive psychology stream of mindset research is less theoretical than the other streams of mindset research (French, 2016). This particular stream of research includes a broad conceptualization of mindset and generally defines it as a person's beliefs and attributions of self (French, 2016). Researchers who ascribe to the positive psychology stream believe that individuals' views of themselves can influence their abilities and achievement. Dweck and Yeager (2019) asserted that individuals' beliefs about their ability to grow and change ultimately influence what they can achieve. These researchers stated that individuals who believe they can achieve an outcome are far more likely to succeed.

Mindset theory from the positive psychology perspective is based on attribution theory. Researchers who ascribe to attribution theory believe that "people try to find explanations for what happens to them and that these explanations then shape their reactions" (Dweck & Yeager, 2019, pp. 482-483). Some beliefs of individuals form meaning systems (Dweck & Yeager, 2019). Individuals use meaning systems to build an understanding of ways that goals, beliefs, and behaviors interrelate. In other words, individuals use meaning systems to make sense of the world around them. For example, Dweck and Yeager (2019) proposed *effort belief* as one meaning system. Individuals with effort beliefs are confident they can change with enough hard work. Individuals with effort beliefs also perceive one's need to work hard at a task as an opportunity to grow; on the other hand, individuals who do not ascribe to effort beliefs view the need to work hard as a sign that they possess a deficiency. Individuals with effort beliefs develop personal and professional resilience and are more likely to achieve their goals (Dweck & Yeager, 2019).

As viewed through the lens of the positive psychology stream, individuals' mindsets range on a theoretical continuum from fixed mindsets to growth mindsets (Dweck, 2016). Individuals with fixed mindsets believe that their personal attributes, such as intelligence or personality, cannot be easily changed. On the other hand, individuals with growth mindsets believe that, with appropriate levels of effort and perseverance, personal attributes are malleable and that they are capable of success (Dweck & Yeager, 2019).

Each of the theories of mindset covered in this conceptual framework, although not definitive separately, inform a powerful and robust theoretical foundation for this study of entrepreneurial orientations of academic leaders in the Florida College System.

Entrepreneurial Mindset

Organizational leadership scholars have hypothesized the existence of an entrepreneurial mindset (EM). These scholars have defined EM as “adaptable thinking and decision-making in complex, uncertain, and dynamic environments” (Naumann, 2017, p. 159). Entrepreneurial mindsets direct individuals' behavior and ultimately influence entrepreneurial activities and outcomes (Putta, 2014). Entrepreneurial mindset can increase competitiveness in a country, municipality, or organization (Zupan, Cankar, & Setnikar Cankar, 2018).

Individuals with entrepreneurial mindsets tend to take calculated risks, are change-oriented, and react well to uncertainty (Putta, 2014). These individuals create or exploit opportunities, look for innovation, and seek to create value in their organizations (Putta, 2014; Zupan et al., 2018). Individuals with high EM typically scan the environment for new opportunities, but they do not pursue every opportunity they discover (Naumann, 2017). Instead, they tend to weigh the options, consider the scarcity of resources, and focus on opportunities that align with their goals and that promise the highest return on investment (Naumann, 2017). This

way of thinking can powerfully influence individuals to create competitive advantages in uncertain situations.

Over the last two decades, scholars have investigated a number of attributes of EM. However, little research weaves all of the findings together to create a fuller picture of EM and its influence on organizations. Based on a four-step systematic literature review of 33 scholarly articles that focused on EM and mindset theory, Naumann (2017) posited seven attributes and qualities associated with EM; five attributes were observable cognitive processes that influenced an individual's behavior. Naumann (2017) referred to these attributes as the core attributes of EM. The other two attributes were more abstract in nature and harder to observe.

The first EM characteristic identified by Naumann (2017) is *cognitive tuning and goal orientation*. This EM characteristic describes the focusing of cognitive processes on the specific activity at hand to ensure success. Cognitive psychology theory categorizes this aspect of EM as either deliberative or implemental.

Individuals commonly utilize a deliberative entrepreneurial mindset during goal-setting (French, 2016; Naumann, 2017). An individual engaged in a deliberative mindset seeks to determine the desirability and feasibility of a decision or plan. Researchers have measured the goal orientations of individuals who demonstrate deliberative entrepreneurial mindset by assessing the amount of risk they are willing to take (Naumann, 2017). Cautious entrepreneurs who have deliberative mindsets seek to avoid risks, whereas people with eager, deliberative mindsets are willing to take risks to achieve higher returns (Naumann, 2017).

In contrast to the deliberative mindset, individuals use implemental mindsets when they strive to achieve a goal that has already been determined (French, 2016; Naumann, 2017). People engaged in an implemental mindset utilize cognitive processes to analyze information

related to accomplishing the goal. Similar to deliberative mindset, implemental mindset can also be either cautious or eager. Individuals who practice cautious implemental mindsets seek to minimize risk during implementation through contingency planning and cost-benefit analyses. In contrast, people who possess an eager implemental mindset focus on opportunities (Naumann, 2017). However, an implemental mindset that is too eager can lock individuals into following a bad decision by being too optimistic or too confident in their ability to control situations (Naumann, 2017).

The second EM characteristic identified by Naumann (2017) is *heuristic-based decision-logic*. This form of problem-solving enables entrepreneurs to address situations that are uncertain and complex. Leaders and entrepreneurs often need to make decisions quickly in order to exploit critical windows of opportunity.

Entrepreneurs often use a heuristic of *representativeness* (Naumann, 2017). This type of heuristic thinking entails the willingness to generalize based on small samples (Naumann, 2017). Representativeness enables the entrepreneur to make inferences about reality based on limited experiences (Naumann, 2017). The cognitive overload limits of individuals tend to prevent them from making rational decisions based on all available information (Naumann, 2017). Therefore, entrepreneurs use heuristic-based logic, such as representativeness, to make decisions in the face of uncertainty. This way of thinking is hard to duplicate and gives entrepreneurs a competitive advantage in uncertain times (Naumann, 2017).

Another example of a heuristic-based decision-model includes personal biases (Naumann, 2017). Entrepreneurs frequently possess biases that influence their decisions in complex and uncertain situations. One common bias is *confirmation bias*, which is the tendency to pay greater attention to information that confirms the entrepreneurs' decisions, coupled with a

tendency to ignore information that is contrary to the entrepreneurs' goals. Other biases include *self-serving bias* and *optimistic bias* (Naumann, 2017). Self-serving bias is the belief that success is the result of one's own talent and skills, while failure is due to external conditions. Optimistic bias is the tendency to believe that the results of an action will be better than that which one could rationally predict.

The third cognitive element of EM identified by Naumann (2017) is *alertness*. Naumann asserted that possession of knowledge is not the only characteristic that enables an entrepreneur to succeed. Instead, a person's alertness to new information encourages entrepreneurs to identify opportunities and envision possible results. Alertness is labeled the "sudden insights or recognition of value of a product or service" (Naumann, 2017, p. 162). Alertness is a cognitive ability; a person's creativity, intelligence, and experience influence that ability.

Naumann's analysis of the literature pointed to a fourth cognitive element of EM as *prior knowledge*. Prior knowledge is a crucial product of knowledge, experience, and education combined with individuals' personal and professional experiences (Naumann, 2017). Entrepreneurs gain prior knowledge through information derived from their education and experiences and the entrepreneurs' social networks (Naumann, 2017). The combination of these influences makes each person's prior knowledge unique. Explicit and procedural knowledge form the basis of prior knowledge (Naumann, 2017). *Explicit knowledge* tends to focus on the knowledge and comprehension of facts, ideas, rules or laws, and known phenomena. *Procedural knowledge* is intuitive or tacit knowledge outside of an individual's conscious awareness. Entrepreneurs can combine the use of explicit and procedural knowledge to enable them to use diverse ideas and resources to accomplish their goals (Naumann, 2017).

The fifth cognitive element found in Naumann's (2017) EM analysis is *social interaction*, also known as *social capital*. Entrepreneurs create social capital by investing time and energy to create trusting and cooperative relationships with others. Social capital allows entrepreneurs to "access disparate information, make connections and see patterns evolve" (Naumann, 2017, p. 163). Developing social capital gives entrepreneurs a distinct advantage in complex and uncertain environments.

According to Naumann (2017), the two remaining metacognitive attributes of EM are *metacognition* and *cognitive adaptability*. Metacognition is "thinking about thinking" (Naumann, 2017, p. 163). Unlike young children, adult humans have the ability to examine their own thought processes and to weigh their thinking in order to connect their prior knowledge to new information, new events, and new environments. *Cognitive adaptability* is the ability of entrepreneurs to reflect on and make changes to their thinking. Individuals with cognitive adaptability are better able to change their way of thinking as situations evolve (Bosman & Fernhaber, 2018; Dweck, 2006; Naumann, 2017). Entrepreneurs with a high degree of cognitive adaptability can change and modify their ways of thinking quickly in dynamic and ambiguous environments. Individuals operationalize cognitive adaptability in processes such as brainstorming and scenario planning in the face of uncertainty and ambiguity. Entrepreneurs with high cognitive adaptability tend to process more information from their environment more quickly than others and are able to adapt their decision-making based on their own cognitive feedback, along with others in their social circles (Naumann, 2017).

According to Bosman and Fernhaber (2018), entrepreneurial mindsets are a product of individuals' experiences, and mindsets evolve over time. Experiences that are consistent with one's current mindset tend to strengthen and reinforce that mindset (Dweck, 2006). New

information that differs from one's current mindset is either rejected (fixed mindset) or used to modify the existing mindset (growth mindset). The likelihood of modifying one's mindset depends on whether or not individuals are conscious of their current mindset. Mindsets are less likely to change if one has cognitive filters that are subconscious and hidden. One's mindset is more likely to change if one is aware of his or her current mindset and takes purposeful steps to think and react in new ways (Bosman & Fernhaber, 2018).

Organizational vs. Individual Entrepreneurship

Beginning in the 1980s, researchers studied entrepreneurship at the organizational level. Covin and Slevin (1986) proposed three key attributes of an organization's entrepreneurial orientation (EO): risk-taking, innovation, and proactivity. Dess and Lumpkin (2005) later expanded EO characteristics to include autonomy, innovativeness, risk-taking, proactiveness, and competitive aggression. Entrepreneurial orientation was subsequently described as "a strategy-making process that provides organizations with a basis for entrepreneurial decision-making and behaviors" (DeGennaro, Wright, & Panza, 2016, p. 2). An organization's EO is a predictor of both financial and non-financial performance; organizations with high levels of EO typically have high levels of organizational performance (Hussain, Abbas, & Khan, 2017; Mason, Gos, & Raggiotto, 2016).

Although previous research focused on EO at the organizational level, Bolton and Lane (2012) created a survey instrument (see Appendix A) to study individual entrepreneurial orientation (IEO). The individual entrepreneur is a central figure in any entrepreneurial organization (Obschonka & Stuetzer, 2017); as a result, understanding the characteristics that influence and contribute to individuals' entrepreneurial skills and mindset is vital. The IEO instrument created by Bolton and Lane (2012) was based on the EO measures of risk-taking,

innovativeness, and proactiveness that correlated to high performing organizations (Hussain et al., 2017; Mason et al., 2016). These measures “may give an indication of how successful these individuals might be as entrepreneurs” (Bolton & Lane, 2012, p. 223). Bolton and Lane (2012) developed and validated the survey instrument that the current researcher subsequently modified to measure the IEOs of academic leaders in the Florida College System (see Appendix B).

Academic Entrepreneurship

Glassman et al. (2003) defined *academic entrepreneurship* as “the creation or seizing of opportunities within a university setting, regardless of the resources available” (p. 354). Bowyer and Vitale (2018) identified three processes related to academic entrepreneurship: “opportunity seeking (corporate venturing), novelty seeking (innovation), and advantage-seeking (strategic renewal)” (p. 12). Bowyer and Vitale (2018) contended that academic entrepreneurs must develop the ability to exploit opportunities they have either created or discovered in order to ensure their organization’s success.

Alfirević, Vican, Pavičić, and Petković (2018) surveyed primary and secondary school principals ($n = 369$) to determine both the organizational EOs of the schools and the IEOs of the principals. Principals completed a survey to assess the EO of their schools and another survey to assess their personal IEOs. Alfirević et al. (2018) compared the results from the two surveys and found a significant correlation ($p < .01$) between the IEOs of principals and the EOs of their schools. These findings were important catalysts to more research on academic entrepreneurship.

Hussain et al. (2017) and Mason et al. (2016) asserted that a statistically significant correlation existed between high levels of EO and high levels of organizational performance. However, the research related to academic entrepreneurship and its outcomes is woefully sparse.

After an exhaustive review of the literature, the current researcher uncovered no studies related to the relationships between the IEOs of higher education leaders and college or university students' academic success. This study was designed to add to the body of knowledge related to academic entrepreneurship by specifically examining the relationships between the IEOs of academic leaders in the FCS and the student success rates of their institutions.

Problem/Purpose Statement

The purpose of this study was to examine the relationships between the individual entrepreneurship orientations of academic leaders in the Florida College System and their students' success rates.

Research Questions

1. What are the relationships between the individual entrepreneurial orientations of Florida College System leaders and students' success rates?
2. What are the relationships between the individual entrepreneurial orientations of presidents, vice-presidents, and deans in the Florida College System and college students' success rates?
3. Which of the college leaders' individual entrepreneurial orientations scores (presidents, vice-presidents, or deans) are the most robust predictors of college students' success rates?

Research Hypotheses

H₀¹: There are no significant relationships between mean composite IEO scores of academic leaders and students' success rates.

H₀²: There is no significant relationship between the mean composite IEO scores of each leadership group (presidents, vice-presidents, and deans) and their students' success rates as measured by the FCS' accountability system.

H₀³: The IEO composite scores of FCS leaders are not significant predictors of student success rates as measured by the FCS' accountability system.

Research Design and Methods

The research design for this study was a non-experimental, correlational study of the individual entrepreneurial orientations of 74 FCS academic leaders as measured by a modified IEO instrument (Appendix B) and their students' success rates as measured by the FCS' 2018 Accountability Report (Florida Department of Education, 2018). The researcher obtained permission to adapt the IEO survey developed by Bolton and Lane (2012), and the dissertation committee validated the modified instrument. After approval by the SEU Institutional Review Board, the current researcher procured a list of academic leaders in the FCS and invited all FCS deans, vice-presidents, and presidents who oversaw their respective college's Associate of Arts program to participate in the online survey. Seventy-four academic leaders from the FCS responded to the survey. A member of the dissertation committee cross-referenced the IEO scores and the success rate scores for each participating institution with numeric labels prior to data analysis in order to preserve the institutional anonymity. The researcher then computed the mean composite score on the IEO for each leader and each institution. Using the 2018 FCS accountability report from the Florida Department of Education, the researcher obtained the success rate of the institutions that responded to the online IEO survey. The success rate of FCS institutions involves a complex algorithm and was calculated as the percentage of a cohort of First Time in College (FTIC) students who (a) enrolled at the institution in the cohort's fall semester and (b) either graduated, or were in good standing or (c) successfully transferred to a four-year college or university within four years. Students must have completed at least 18 college credits to be included in the cohort. The FCS algorithm provided a numeric score that is

a ratio-level variable. By matching the numeric labels for the dataset, the researcher was able to correlate each academic institution's IEO score to each institution's 2018 success rate. If only one person responded to the survey, only that individual's IEO was used in the analysis. If more than one leader at a college responded to the survey, the mean IEO of all respondents for the college was used in the analyses.

Analyses

To address research question 1 and hypothesis 1, the Pearson product-moment correlation statistic (r) was used to first correlate each FCS institution's mean composite IEO score to their institution's student success rate. Correlation analyses using the Pearson product-moment correlation statistic (r) were conducted between each leadership group's composite IEO and student success rates to address research question 2 and hypothesis 2. To address research question 3 and hypothesis 3, multiple linear regression was used to determine whether a specific group (presidents, vice-presidents, or deans) was a robust predictor of student success rates in the Florida College System.

Limitations

This study was limited only to academic administrators and colleges in the Florida College System. The results of the study may not be generalizable to all higher education institutions (HEIs).

Delimitations

This research study was a non-experimental, correlational study of the relationships between the IEO scores of three types of academic leaders in the Florida College System and their institutions' student success rates. The population for this exploratory study consisted of all Presidents, Vice Presidents of Academic Affairs (or equivalent title), and Academic Deans who

supervise the Associate of Arts program within their respective colleges and who were serving in the FCS ($n = 28$ colleges) in the spring of 2019. The researcher examined only the cohort success rates of students in the Associate of Arts program who enrolled in the FSC in the fall of 2014.

Definitions

Academic Entrepreneurship

Academic entrepreneurship is “the creation or seizing of opportunities within a university setting, regardless of the resources available.” (Glassman et al., 2003, p. 354).

Attribution Theory

Attribution theory is a psychological theory that seeks to explain ways that “people try to find explanations for what happens to them and that these explanations then shape their reactions” (Dweck & Yeager, 2019, pp. 482-483).

Deliberative mindset

Deliberative mindset is the total of the cognitive processes activated before a person makes a decision (French, 2016).

Entrepreneurial mindset

An entrepreneurial mindset is “a specific state of mind which orientates human conduct towards entrepreneurial activities and outcomes” (Putta, 2014, p. 71).

Entrepreneurial Orientation

Entrepreneurial orientation is “a strategy-making process that provides organizations with a basis for entrepreneurial decision-making and behaviors” (DeGennaro et al., 2016, p. 2).

Entrepreneurship

Entrepreneurship is “the discovery, evaluation, and exploitation of opportunities” (Bosman & Fernhaber, 2018, p. 9).

Fixed Mindset

A fixed mindset, from the positive psychological lens, is a personal belief that attributes such as intelligence or personality cannot be changed (Dweck & Yeager, 2019).

Growth Mindset

A growth mindset, from the positive psychological lens, is a personal belief that with appropriate levels of effort and perseverance, personal attributes are malleable (Dweck & Yeager, 2019).

Implemental Mindset

Implemental mindset describes the cognitive processes used by individuals to accomplish a specific goal once a decision is made (French, 2016).

Individual Entrepreneurial Orientation (IEO)

In this study, IEO is a measure of individuals’ self-perceptions of risk-taking, innovation, and proactiveness using a modified version of an instrument developed and validated by Bolton and Lane (2012).

Innovation

Innovation was described in this study as the “attitudes to promote the development of new products, services, processes and the development of new firms” (Schmidt et al., 2018, p. 4).

Intrapreneurs

This term refers to individuals employed by an organization who possess entrepreneurial characteristics (DeGennaro et al., 2016).

Mindset

Mindset is considered to be the cognitive processes used to filter and analyze all of the information and knowledge individuals encounter in their environments (French, 2016).

Non-traditional Learner

Non-traditional students are “students who enter higher education after periods of labor market participation or inactivity” (Tieben, 2019, p. 4).

Proactiveness

Proactiveness is defined in this study as active engagement in forward-looking behaviors that enable a firm or individual to create or exploit opportunities (DeGennaro et al., 2016).

Risk-taking

Risk-taking, as used in this study, is defined as an individual’s or organization’s willingness to dedicate significant resources to a project even when the outcomes of the project are uncertain (Schmidt et al., 2018)

Student Success Rate

The Florida Department of Education calculates student success as the percent of an annual cohort of First Time in College students who enrolled at the institution in the fall and who either graduated, were in good standing at the college, or successfully transferred to another college or university within four years. Students must have completed at least 18 college credits to be included in the cohort. (Florida Department of Education, n.d.a).

Significance of the Study

Higher education institutions (HEIs) must often change rapidly in response to decreased funding, increased competition, and shifting student demographics (Cleverley-Thompson, 2016). Community colleges are not immune to these mounting pressures. Institutions such as the

American Association of Community Colleges have asserted that community college academic administrators must adopt entrepreneurial mindsets and behaviors to enable them to lead effectively (AACC, 2013). However, the ultimate goal of educational leaders is to ensure student success (AACC, 2013). This study explored the relationships between the individual entrepreneurial orientations (IEOs) of academic leaders and student success. Studying the relationships between IEO and student success is a step forward in determining IEO scores of academic leaders. In addition, this study can promote further empirical research to address the question of whether leaders with high IEO scores can influence student success rates. This type of information could conceivably shape the hiring practices of colleges as they fill academic leadership positions. Uncovering the relationships between IEOs of academic leaders and student success may also add to the development of higher education programs designed to prepare students for careers in higher education leadership.

II. REVIEW OF LITERATURE

The purpose of this study was to examine the relationships between the individual entrepreneurship orientations of academic leaders and student success rates in the Florida College System. In this literature review, the researcher outlined the key topics pertinent to the current study, including the challenges faced by many higher education institutions in the Florida College System and the key concepts of entrepreneurship. The researcher then discussed entrepreneurial orientation (EO), the EO-performance relationship, individual entrepreneurial orientation (IEO) and entrepreneurship in higher education.

Higher Education

Like many for-profit and non-profit industries, rapidly changing markets and changes in society have dramatically influenced higher education over the last two decades. In previous decades, higher education institutions (HEIs) were somewhat immune to market pressures (Pucciarelli & Kaplan, 2016). However, the so-called immunity to market pressures is no longer the case in higher education. Enrollment and financial concerns are among the greatest challenges that force many HEIs to change marketing and recruiting methods, resource allocations, and sustainability strategies (Cleverley-Thompson, 2016). These difficulties are exacerbated by factors such as increased competition, shifting student demographics, the rapid growth of online learning, the decrease in high school graduation rates (Cleverley-Thompson, 2016), and the demand for greater accountability and globalization (Savior, 2017). A variety of external forces, such as those previously mentioned, have driven many HEIs to change their strategies in order to adapt to shifting markets; to explore different venues for communication

and market placement; to achieve lean faculty, staff, and administration ratios; and to respond to a plethora of other influences in today's 21st century marketplace. In the past, many individuals considered not-for-profit HEIs as primarily a public good that had clear societal missions; in the new marketplace, many HEIs must change their mission and their ways of conducting business (Pucciarelli & Kaplan, 2016). HEI leaders must now balance competing pressures of revenue creation, serving the public good, completing the institution's mission, and serving as providers of knowledge, skills, and dispositions expected in the wider marketplace of commerce and ideas (Pucciarelli & Kaplan, 2016).

Paul LeBlanc (2018), president of the non-profit Southern New Hampshire University, asserted that HEIs must adapt to VUCA environments; initially coined by the US military, this acronym stood for *volatile-uncertain-complex-ambiguous*. The environments of the 21st century have created VUCA settings in which the slowly changing culture of higher education must learn to be agile to thrive. Pucciarelli and Kaplan (2016) asserted that "the future of academia is and will be complicated, challenging and uncertain" (p. 311). The increasingly challenging nature of academia forces higher education leaders to change their strategies and to learn new skills. Academic leaders must prepare their institutions not just to survive but also to thrive in these new environments (LeBlanc, 2018). To this end, organizations such as the American Association of Community Colleges (AACC, 2018) suggest that higher education leaders must develop new competencies to lead their institutions in the 21st century.

Although social, research, and educational missions were the key driving factors in higher education in previous decades, HEI leaders now accept and practice an ethos more commonly associated with for-profit businesses in their institutions (Pucciarelli & Kaplan, 2016). Entrepreneurial mindset, skills, and strategies are among the newer competencies that

higher education leaders must develop to ensure the continued success of their institutions (AACC, 2013; Bowyer & Vitale, 2018; Cleverley-Thompson, 2016, Pucciarelli & Kaplan, 2016).

Although HEI leaders must adopt new mindsets and learn new skills, they must never lose focus on the principal goals for their institutions. Most academic leaders agree that the ultimate goal of all academic leaders is to facilitate and ensure student success. Higher education leaders must have a deep commitment to make student success possible and probable (Aspen Institute, 2013). This commitment is especially true for community college leaders; student success should guide the decisions of all academic leaders within community colleges. In fact, the AACC (2018) asserted, “Student access and success is the North Star for community colleges” (p. 3). In other words, student success is one of the fundamental guiding principles that should drive the decision-making of all academic leaders. To this end, the AACC (2018) recommended that new, emerging, and experienced academic leaders intentionally strive to gain and continuously develop core competencies and skillsets that lead to the success of their students.

Benefits of Student Success

Degree completion is a tool that changes lives, and educational attainment is a crucial determinant of both economic and social success in the United States (Schudde & Godrick-Rab, 2015). Chaplot, Cooper, Johnstone, and Karandjeff (2015) discussed the most apparent connection between educational attainment and quality of life as labor market outcomes:

Economists and labor experts tell us clearly that 21st century jobs require high-level knowledge and skills—the type of learning that can only be acquired in high-quality

postsecondary programs. In fact, the experts say that few Americans can expect to build and maintain a middle-class lifestyle without some sort of college-level credentials. (p. ii)

The influence of a higher education degree on employment outcomes and finances is striking. In comparing the relationship between degree attainment and unemployment in 2018, the Bureau of Labor Statistics' (BLS, 2019) Current Population Survey indicated that the unemployment rate (2.1%) for noninstitutionalized individuals age 25 and older who held at least a bachelor's degree was approximately half of the unemployment rate (4.1%) for the same population in the same year for people who held a high school diploma. The Current Population Survey is a monthly survey conducted by interviewing approximately 60,000 eligible US households from across the country that are purposively selected to be representative of the entire population of the United States (BLS, 2015).

Degree attainment also influences an individual's earnings. In 2017, the BLS released a report based on the US Census survey of approximately 15,000 households selected as a representative sample. The BLS (2017) reported that the median weekly earnings of high school graduates aged 25 and older and who worked full-time (35 or more hours per week) was \$718. In contrast, the median weekly earnings of full-time workers in the same age group who had earned a bachelor's degree was \$1,189 (BLS, 2017). This difference in earnings implies that the median weekly pay for an individual with a high school diploma is only 60% of the median weekly earnings of an individual with a 4-year college degree. The difference in earning provides strong support for the value of a college degree.

Obtaining a college education also benefits society at large. Degree attainment is associated not only with an increase in financial resources for the individuals but also in higher tax contributions from graduates, which in turn provides more support to state and federal

governments. Based on the 2015 US Census Bureau data, individuals who earned at least an Associate's degree and who worked full-time paid, on average, 33% more in taxes than their counterparts who earned only a high school diploma and worked full-time (Ma, Pender, & Welch, 2016).

Additionally, earning a college degree decreases the likelihood of reliance on public assistance. An individual's need for federal assistance relates closely to completing a two-year college degree. Based on the analysis of Current Population Survey data, Ma et al. (2016) reported that in 2015, 8% of individuals 25 years and older who earned an Associate's degree received assistance from the Supplemental Nutrition Assistance Program. In contrast, 13% of individuals with a high school diploma lived in households that received Supplemental Nutrition Assistance Program benefits (Ma et al., 2016).

A college education is associated with other non-tangible benefits. Based on the report from the BLS (2016) on Volunteering in the United States, postsecondary degree wage earners volunteer more than twice as often as non-degree wage earners. Additionally, data from the US Census Bureau ($n = 115,637$; 2015) indicated that the voting rate of individuals 25 years and older who had a bachelor's degree was 41.2% compared to a rate of 19.7% for those individuals who had a high school diploma.

The statistics enumerated above indicate that earning a postsecondary degree creates benefits for both individuals and for society; therefore, student success in postsecondary institutions is critically important. Student success that leads to degree completion needs to be a guiding principle of all HIEs, especially community colleges that tend to serve non-traditional learners (AACC, 2018).

Florida College System

Twenty-eight institutions of higher learning comprise the Florida College System (FCS). One can trace the roots of the FCS to the founding of St. Petersburg Junior College in 1927. In 1947-48, the Florida legislature officially established the community college system and established two-year colleges across the state (Florida College System, 2018b). The FCS strategically located each college so that no city in Florida was more than 50 miles away from a state (public) college campus (Florida College System, 2018b). FCS institutions now offer a variety of educational opportunities, including Associate in Arts degrees, Associate in Science degrees, Bachelor's degrees, College Credit Certificates, Advanced Technical Diplomas, and other workforce training.

Nationwide, community colleges serve the educational needs of a large number of non-traditional, under-prepared, and low-income students (Stuart, Rios-Aguilar, & Deil-Amen, 2014). The institutions that form the FCS are no exception. FCS institutions served the educational needs of 584,679 students in the 2017-18 reporting year (Florida College System, 2018b). A majority of this cohort (57%) were minority students; 59% percent of the students self-identified as female, and 41% self-identified as male. Sixty-five percent of these same students attended college part-time, although 35% attended college full-time. The average age of students in this cohort was 25. For the cohort who entered the FCS system in the 2014-15 academic year and graduated within three years, 38.1% were limited English proficiency students, and 36.9% were students with disabilities (Florida Department of Education, n.d.b). The academic leaders of the FCS must adopt innovative and proactive strategies to address the varied needs of the highly diverse populations they serve.

Entrepreneurship

Many higher education leaders have been encouraged to adopt entrepreneurial attitudes and strategies to ensure the success of their institutions (AACC, 2013; Bowyer & Vitale, 2018; Cleverley-Thompson, 2016). As discussed in chapter one, the definition of entrepreneurship has evolved over time. The word *entrepreneur* originated from a French word that identified individuals who had undertaken a major project. By the 1940s, the word changed to identify an individual who was known as a change agent (Bosman & Fernhaber, 2018). In the 1980s, business scholars used the term to refer to a person who identified resources and who exploited opportunities (Bosman & Fernhaber, 2018).

Among current scholarly literature, different definitions of entrepreneurship exist. The diversity of definitions is largely due to the examination of the concept of entrepreneurship from different perspectives, such as ideas related to economic growth, innovation, creativity, development, novel ideas, and discovery (Audretsch, Kuratko, & Link, 2015). Scholars who study entrepreneurship have analyzed the concept through lenses such as entrepreneurial traits, entrepreneurial behaviors, entrepreneurial functions, new venture creation, and business ownership. Most literature on entrepreneurship examines the concept through either the lens of organizational status (e.g., self-employment, business ownership, or startup), individual behavior, or organizational performance (Audretsch et al., 2015). Looking at entrepreneurship in relation to these various perspectives has led to diversity in the definition of the term. The most widely cited paper on entrepreneurship defines the concept as the “discovery and exploitation of profitable opportunities” (Audretsch et al., 2015, p. 704). However, Audretsch et al.’s (2015) definition is not applicable to this study; the current study examines entrepreneurship in the context of public higher education. The definition used for entrepreneurship in the current study

is from Bosman and Fernhaber (2018), who defined entrepreneurship as “the discovery, evaluation, and exploitation of opportunities” (p. 9).

Entrepreneurial Traits

A common line of entrepreneurial research examines the traits of successful entrepreneurs. Although organizations can be entrepreneurial, the principal agent of the entrepreneurial process is the individual entrepreneur (Obschonka & Stuetzer, 2017). People who demonstrate entrepreneurial attitudes and behaviors identify or create opportunities, evaluate those opportunities, and then exploit those opportunities (Audretsch et al., 2015; Bosman & Fernhaber, 2018). Consequently, a great deal of research has focused on the personal and professional traits that motivate and influence individuals to engage in entrepreneurial behaviors and to develop the traits that lead to organizational success.

A large body of research indicates that the character traits of individuals strongly influence their actions and entrepreneurial behaviors (Omoredede et al., 2015). Psychologists describe the personality of individuals as the relatively permanent traits and characteristics that consistently dictate an individual’s behavior (Omoredede et al., 2015). Personality research related to entrepreneurs has frequently focused on the Big Five personality attributes of neuroticism/emotional stability, extroversion/extraversion, openness to experience, agreeableness, and conscientiousness (Omoredede et al., 2015). Other research studies have found that entrepreneurship is related to personality traits such as proactivity, innovativeness, and risk-taking (Bolton & Lane, 2012, Omoredede et al., 2015); internal locus of control, autonomy, self-reliance, and need for achievement (Al Mamun et al., 2018); and self-efficacy, opportunity detection, and creativity (Schmidt et al., 2018).

Many research studies have focused on specific traits in order to determine the key interventions that promote entrepreneurial success by helping leaders to create an entrepreneurial mindset (Obschonka & Stuetzer, 2017). Psychological characteristics of entrepreneurs can influence their decision-making, judgment, and ability to recognize and exploit opportunities (Omoredede et al., 2015). Innovativeness, risk-taking, and proactiveness are among the traits that are commonly recognized as key to successful entrepreneurial activity (Blanchard, 2017; Bolton & Lane, 2012; Cleverley-Thompson, 2016; DeGennaro et al., 2016; Miller, 1983; Omoredede et al., 2015, Schmidt et al., 2018).

Innovation is an essential trait of an entrepreneur; systemic innovation allows entrepreneurs to identify new opportunities. Schmidt et al. (2018) asserted that entrepreneurs practice innovation when they see an opportunity or reason to promote change. Innovative entrepreneurs have “an ability to capture, recognize and make effective use of abstract information in dynamic environments” (Schmidt et al., 2018, p. 5). Many people associate innovation with invention; however, entrepreneurial innovation involves more than the creation of new things. Schmidt et al. (2018) stated that innovation drives the development of new processes, services, products, or businesses. Blanchard (2017) asserted that innovation does not necessarily require the creation of a new product or service but rather the ability to identify opportunities and act on them to create positive results.

Risk-taking is another trait commonly associated with entrepreneurs (Bolton & Lane, 2012; Omoredede et al., 2015; Tipu, 2017). Risk-taking is the willingness to dedicate significant resources to a project even when the outcomes of the project are uncertain (Schmidt et al., 2018). Individuals with high risk-taking traits take bold and less calculated risks, even in the face of uncertainty (DeGennaro et al., 2016). Risk-taking behavior tends to increase when individuals

believe that they can realistically achieve their intended outcome. Risk-taking often plays a key role in resource allocation (Gupta et al., 2016), thereby influencing the entire organization.

Proactiveness is described as engaging in forward-looking behaviors that enable a firm or individual to create or exploit an opportunity (DeGennaro et al., 2016). Individuals with low levels of proactiveness tend to be passive and prefer to adapt to the situations around them rather than changing the circumstances (Kollmann et al., 2017). In contrast, individuals with high levels of proactiveness “actively scan their environments for opportunities, show initiative, rely on their own competence, and actively change circumstances around them” (Kollmann et al., 2017, p. 847). Leaders with high proactive traits can better identify and develop opportunities (Omoredede et al., 2015). Gupta et al. (2016) asserted that a leader who has a proactive focus “is prepared to meet the demands of the future, [and is] not simply occupied with the concerns and problems of the past and the present” (p. 55).

Entrepreneurial Orientation

Beginning in the 1980s, researchers shifted their focus from entrepreneurial traits and behaviors at the individual level to entrepreneurial behaviors at the organizational level. These research studies depicted organizations as the entrepreneurs and the individuals within the organization as intrapreneurs (DeGennaro, Wright, & Panza, 2016). A number of these studies looked at organizations to determine their entrepreneurial orientations.

Researchers have widely explored entrepreneurial orientation as an essential organization-level behavior process in entrepreneurship literature (Bolton & Lane, 2012; Covin & Slevin, 1989; DeGennaro et al., 2016). Entrepreneurial orientation is “a strategy-making process that provides organizations with a basis for entrepreneurial decision-making and behaviors” (DeGennaro et al., 2016, p. 2). Entrepreneurial orientation is distinctive from other

theories of entrepreneurship; EO does not focus on entrepreneurial activities such as new venture creation but on the strategy-making processes that drive the ways organizations perform entrepreneurial activities (DeGennaro et al., 2016). The strategies adopted by an organization influence resource allocation, organizational goals, organizational culture, and more. An organization's entrepreneurial orientation can vary between administrative levels, areas of specialization within the organization, and over time (Cristina, Fabrício, Belfort, & Mello Rodrigues, 2016).

Entrepreneurial orientation is widely recognized “as one of the most central and prominent concepts in all of management science” (Gupta & Dutta, 2016, p. 6). Researchers assess entrepreneurial orientation in one of three ways: an organization-level analysis of managerial perception, measurement of organizational behavior, or examination of resource allocation (DeGennaro et al., 2016). Though widely studied, two conceptualizations of entrepreneurial orientation dominate entrepreneurial research (Cristina et al., 2016). Covin and Slevin (1989) developed the first conceptualization, and Lumpkin and Dess (1996) developed the second conceptualization.

Covin and Slevin (1989) originally developed entrepreneurial orientation to measure three core organizational behaviors of firms that were recognized as entrepreneurial. The organizational behaviors included experimenting with new ideas, seizing new opportunities, and undertaking risk (Covin & Slevin, 1989). Covin and Slevin (1989) created a nine-item scale to measure what they termed “strategic posture” (p. 77). This scale measured key managers’ perceptions of their company’s innovation, proactiveness, and risk-taking. The researchers developed the instrument by building on previous business research, then used factor analysis to determine that (a) the instrument measured three categories, and (b) the three categories “are

empirically related and constitute a distinct, unidimensional strategic orientation” (Covin & Slevin, 1989, p. 79). Covin's and Slevin's (1989) instrument is the most frequently used research instrument for determining an organization's entrepreneurial orientation (Cristina et al., 2016; DeGennaro et al., 2016).

Lumpkin and Dess (1996) developed the second conceptualization of entrepreneurial orientation. In addition to innovativeness, risk-taking, and proactiveness, the researchers added the additional factors of autonomy and competitive aggressiveness to their entrepreneurial orientation construct. In contrast to Covin and Slevin (1989), Lumpkin and Dess (1996) conceptualized the factors measured by their instrument as varying “independently, depending on the environmental and organizational context” (p. 137). In other words, these researchers viewed their instrument as a multi-dimensional instrument designed to measure organizations' entrepreneurial orientations within varying contexts

Over the last 30 years, researchers have conducted a substantial number of research studies on entrepreneurial orientation that were often influenced by the ways that researchers conceptualized the entrepreneurial orientation construct. Researchers who believed that entrepreneurial orientation is a multi-dimensional construct sought to determine the aspects of entrepreneurial orientation that have the most influence on organizations. Although some thought leaders conceptualized entrepreneurial orientation as a singular construct, Gupta et al. (2016) agreed with Lumpkin and Dess (1996) that entrepreneurial orientation is a multi-dimensional construct. Gupta et al. (2016) further asserted that the various components of entrepreneurial orientation might be more valuable in specific organizational situations. For example, in some situations, risk-taking may have the most influence on an organization, while in a different situation, innovation might have more influence on organizational performance.

In a review of 405 articles on entrepreneurial orientation, Cristina, et al. (2016) observed four thematic elements that have dominated entrepreneurial orientation research: performance, strategy, entrepreneurial attitude, and management. The examination of entrepreneurial orientation and its relationship to organizational performance comprised the majority of the research (Cristina et al., 2016).

An organization's entrepreneurial orientation is a predictor of both financial and non-financial performance; organizations with higher levels of entrepreneurial orientation tend to have higher levels of organizational performance (Hussain, Abbas, & Khan, 2017; Kantur, 2016; Rauch et al., 2009). The entrepreneurial orientation-performance indicator is the relationship between an organization's entrepreneurial orientation score and organizational outcomes. Researchers have examined a number of performance outcomes including employee satisfaction, customer satisfaction (Hussain et al., 2017), leaders' views of their organization's global success, profit earnings, sales growth (Kantur, 2016), and return on investments (Rauch et al., 2009). Many large corporations, such as Sony and Intel attributed their success to their high organizational entrepreneurial orientations (Gupta et al., 2016).

The research on entrepreneurial orientation and its influence on organizations' performance have led many researchers to examine this linkage (Cristina et al., 2016; DeGennaro et al., Gupta et al, 2016; Kantur, 2016; Rauch et al., 2009). For example, Kantur (2016) surveyed managers and top-level leaders ($n = 324$) of 118 companies; interviewers used a modified version of the survey instrument designed by Covin and Slevin (1989) to determine the entrepreneurial orientation of each organization. The instrument measured the entrepreneurial orientation of the organizations by surveying managers' and top-level leaders' perceptions of their firms' innovativeness, risk-taking, and proactiveness by ranking survey items on a 5-point

Likert scale (1 = *strongly disagree*; 5 = *strongly agree*). The researchers measured organizational performance outcomes by surveying managers' perceptions of ways that their organization ranked compared to their competition based on four measures: growth, profitability, and customers' and employees' satisfaction. Kantur (2016) measured entrepreneurial orientation using a 5-point Likert scale that ranged from 1 (*much worse than the competition*) to 5 (*much better than the competition*). The researcher then computed the average entrepreneurial orientation responses and performance outcome responses for each firm and for the businesses as a whole. Kantur (2016) then calculated Pearson's r to determine the correlations between entrepreneurial orientation and organizational performance. The results of the study revealed a significant positive relationship ($p < 0.01$) between organizations' entrepreneurial orientations and the organizations' performance.

The positive relationship between entrepreneurial orientation and organizational performance is apparent in other studies. Rauch et al. (2009) conducted a meta-analysis of 51 studies that examined the relationships between entrepreneurial orientation of organizations and business performance. The meta-analysis revealed a moderate positive relationship ($r = .242$) between organizations' entrepreneurial orientation and organizations' performance (Rauch et al., 2009).

Since entrepreneurial orientation was associated with organizational performance, researchers examined entrepreneurial orientation from many perspectives. Among the variables were the antecedents, moderators, and mediators that influenced entrepreneurial orientation-performance relationships (Cristina et al., 2016). Some of the more interesting research on entrepreneurial orientation and performance pointed out that a high entrepreneurial orientation may not be beneficial for the organization. Higher entrepreneurial orientation did not always

positively correlate to better organizational outcomes (Rauch et al., 2009; Yoon & Solomon, 2017). Yoon and Solomon (2017) suggested that variations in the entrepreneurial orientation-performance relationship may be related to contextual factors such as the employees' perceptions of personal security. Yoon and Solomon (2017) asserted that managers in organizations with high individual entrepreneurial orientations take risks and deal well with uncertainty. However, the researchers hypothesized that the employees who reported to these leaders might not possess the skills and attitudes needed to thrive in uncertain environments. This difference in the attitudes between leaders and followers can create unintended negative consequences for the organization (Yoon & Solomon, 2017).

For example, Yoon and Solomon (2017) surveyed small- and medium-sized South Korean for-profit enterprises ($n = 157$) in a multiphase process. The authors selected a sample of convenience of small- and medium-sized enterprise (SME) organizations with 30 or fewer employees that operated regionally in South Korea. To ensure validity, Yoon and Solomon (2017) derived all their survey items from previously validated instruments. Using the entrepreneurial orientation instrument developed by Covin and Slevin (1989), the researchers first surveyed 250 managers who had a high degree of decision-making authority in the organizations. One hundred and fifty-seven managers completed and returned the entrepreneurial orientation survey (a response rate of 62.8%). The researchers then conducted a psychological safety survey of all employees at the companies of the managers who responded to the entrepreneurial orientation survey. A total of 1,633 employees responded to the safety survey (a response rate of 58.8%). The psychological safety measure was a seven-item survey designed by Edmondson (1999) to measure self-reports of the perceived psychological safety of

individuals. The researchers also gathered and compiled three years' worth of financial data from each institution in the study.

Yoon and Solomon (2017) analyzed the survey and financial records data using partial least squares (PLS) path structural equation modeling. The researchers analyzed the structural model based on the sign, magnitude, and significance of the structural path coefficients; the independent variables were entrepreneurial orientation and entrepreneurial orientation squared, and the dependent variable was firm performance as measured by financial data. Yoon and Solomon (2017) predicted a curvilinear relationship between entrepreneurial orientation and organizational performance. The researchers tested their hypothesis by examining the sign and significance of the linear and squared results of the paired coefficients. The results revealed a significant positive relationship ($\beta = .352, p < 0.01$) between managerial entrepreneurial orientation and firm performance as well as a significant negative relationship ($\beta = -.214, p < 0.01$) between entrepreneurial orientation squared and firm performance. Yoon and Solomon (2017) argued that these results supported their hypothesis of a curvilinear (i.e., inverted U-shape) relationship between entrepreneurial orientation and firm performance. In this study, the firms with very low entrepreneurial orientation or very high entrepreneurial orientation were associated with poor organizational performance as measured by financial records.

The researchers also hypothesized that the perceived psychological safety of employees moderated the curvilinear relationship. In the structural equation modeling, analyses revealed a significant relationship ($\beta = 0.543, p < 0.01$) between high psychological safety scores and entrepreneurial orientation squared. This result indicated that employees' psychological safety acted as a moderator of the relationship between managers' entrepreneurial orientations and organizational performance. Yoon and Solomon (2017) asserted that the negative influence of

high entrepreneurial orientation on firm performance decreases when employees feel safe. The researchers argued that mediating variables such as employees' psychological safety may explain the results from studies that did not detect a significant positive relationship between entrepreneurial orientation and firm performance.

Although the current researcher could not find any studies supporting Yoon and Solomon's findings related to psychological safety as a moderator of the entrepreneurial orientation-performance relationship, researchers have examined other moderators of entrepreneurial orientation and performance. Inconsistent findings in the literature led researchers to examine moderators in the entrepreneurial orientation-performance relationship such as network ties (Asad et al., 2016), marketing orientation (Hussain et al., 2017), and the ability to recognize and act on new information (Hughes et al., 2018). Inconsistent results in studies that have examined the entrepreneurial orientation-performance relationship suggest that this relationship is complex and may be influenced by many factors.

Individual Entrepreneurial Orientation

Although a large body of literature exists on entrepreneurial orientations of organizations, few studies have examined entrepreneurial orientation at the individual level (Bolton, 2012; Bolton & Lane, 2012; Fellnhofner, 2019; Goktan & Gupta, 2015; Joardar & Wu, 2011). Obschonka and Stuetzer (2017) asserted that the key agent of the entrepreneurial process is the individual entrepreneur. Therefore, researchers have sought not just to understand entrepreneurship at the organizational level, but also to understand the characteristics that contribute to becoming a successful entrepreneur at the individual level.

Gotkan and Gupta (2015) investigated the relationship between sex and gender and individual entrepreneurial orientation (IEO). These researchers wrote that the lack of research on

IEO is surprising since the influence of founders and top-level managers in determining an organization's strategic direction is well established. Researchers who ascribe to upper echelon theory believe that the values and mindsets of influential individuals within the organization drive the organization's strategic choices and their outcomes (Gotkan & Gupta, 2015).

Furthermore, the IEOs of organizational leaders are not the only influences on the entrepreneurial orientation of an organization. Individual employees play key roles in creating and sustaining an organization's entrepreneurial orientation. Fellnhofer (2019), in his investigation of the relationship between entrepreneurially oriented employees and firm performance, asserted that the “entrepreneurial behavior of individuals is considered as an antecedent of EO [entrepreneurial orientation]” (p. 27). Employees can dramatically influence the entrepreneurial orientation of an organization. An individual's unique behavior can influence the organization’s abilities to detect, create, and exploit opportunities. For example, Fellnhofer (2019) asserted that individuals with high levels of risk-taking, innovativeness, and proactiveness increase the likelihood that the organization will use resources to exploit opportunities effectively. Fellnhofer (2019) also maintained that high IEO influences a firm's entrepreneurial orientation through the increased “efficiency in strategic decision-making by the individual” (p. 30).

Stone and Good (2004) created one of the first survey instruments to measure entrepreneurial orientation at the individual level, largely based on the entrepreneurial orientation instrument developed by Lumpkin and Dess (1996). Stone and Good sought to measure the Individual Entrepreneurial Orientation (IEO) of small business executives who embraced technology. The researchers’ survey instrument measured innovation, proactiveness, autonomy, assertiveness, and risk-taking. These researchers suggested that “users of technology who tend

to possess an entrepreneurial outlook provide an ideal context in which to test the entrepreneurial orientation model on an individual level” (p. 3). Their IEO survey contained 19 questions, most of which related directly to the use of technology. For example, to measure innovation, the authors asked questions such as “I often know about new computer technologies before others” (Stone & Good, 2004, p. 9). The researchers mailed a total of 4,000 surveys to randomly selected, valid business addresses from a business mailing list. Respondents returned 562 usable surveys (14% return rate). The researchers reduced the sample by selecting only those surveys in which the respondent indicated that they were owners or senior managers, worked at a firm that had 300 or fewer employees, and whose survey arrived by a specific cut-off date. The researchers further narrowed the sample to include only the respondents who had used a computer daily for more than a year. The winnowing resulted in a sample size of 178. Results from the final sample were analyzed using structural equation modeling. The researchers found a significant ($p < 0.01$) positive relationship between IEO and measures of innovation, proactive management style, autonomy, and assertiveness of the business executives in the sample. Stone and Good (2004) stated that their research supported the assertion that these four aspects of entrepreneurial orientation can be effectively measured at an individual level.

Bolton and Lane (2012) created the most widely-used survey instrument to measure IEO (Bolton, 2012; Fellnhofer, 2019; Fellnhofer et al., 2016; Fellnhofer et al., 2017; Jelenc et al., 2015; Koe, 2016; Qureshi et al., 2017). Initially, Bolton and Lane (2012) created their IEO instrument based on the five categories of entrepreneurial orientation identified by Lumpkin and Dess (1996): innovativeness, willingness to take risks, autonomy, proactiveness, and competitive aggression. Bolton and Lane (2012) emailed their individual entrepreneurship orientation survey to all graduate and undergraduate students at a regional US university. Elimination of duplicated

and incomplete surveys resulted in a sample size of 1,102 usable surveys. The researchers analyzed the students' responses using principal component factor analysis. In this sample, three factors accounted for 60% of the total variance of the responses: innovativeness, risk-taking, and proactiveness (Bolton & Lane, 2012). As a result, Bolton and Lane (2012) adjusted their instrument to omit the measurement of competitive aggression and autonomy. The revised IEO instrument included the entrepreneurial orientation measures of risk-taking, innovativeness, and proactiveness that correlated to high performing organizations in previous research. Bolton and Lane's (2012) study revealed a significant positive relationship ($p < 0.01$) between the IEO and the entrepreneurial intent of college and university students. These measures "may give an indication of how successful these individuals might be as entrepreneurs" (Bolton & Lane, 2012, p. 223).

In a later study to further validate the IEO, Bolton (2012) administered the IEO to small business owners in Kentucky and Tennessee ($N = 340$). This study compared IEO survey scores to self-reported measures of the owners' perceptions of their overall business success as measured on a 5-point scale. The researchers grouped participants' scores into categories of high, moderate, and low IEOs by grouping responses in quartiles. Bolton (2012) categorized responses in the top quartile as high, and responses in the lowest quartile as low; the researcher categorized all other responses as moderate. Bolton (2012) performed *t*-tests between the mean IEO scores of the high and low groups and the mean scores on the self-reported success of the business owners. The participants who were categorized as high IEO scorers had significantly higher mean scores ($p = .03$) of self-reported success than participants who categorized themselves as low IEO scorers. Bolton (2012) concluded that this second research study

“demonstrates that it [the IEO] is a reliable and valid measure of entrepreneurial orientation at the individual level” (p. 97).

Entrepreneurial Academic Leadership

Effective leadership in an HEI setting is a daunting task. The nature of shared governance in HEIs creates a culture in which opinions abound, individuals often resist change, and top-down leadership style is not always effective or appreciated (Savior, 2017). Savior (2017) asserted that to be effective, HEI leaders

must analyze and be fully aware of a broad and diverse set of contexts and environments in which their institutions function; balance many tasks to get things done; build relationships that ensure collaboration in achieving their objectives; understand their organizations, problems and people; and build effective teams by distributing leadership that empowers others across their institutions. (p. 33)

Senior leaders in HEI play key roles in establishing and sustaining the institution’s mission and values. These leaders influence both internal and external stakeholders. Even in HEIs, “the success of the organization in a constantly changing environment largely depends on [the] leader’s orientation, competency and [the] leader’s self-efficacy” (Ibrahim et al., 2016, p. 1184). HIE leaders influence the success of their organizations by exerting authority, power, and influence over financial, human, and physical resources (Bakar & Mahmood, 2014).

Cleverly-Thomson (2016) asserted that “entrepreneurial behavior is context free, in that it can occur and is identified across all different types of organizations, ranging from small businesses to large corporations, and even to governments” (p. 706). Many academics promote the need for institutions of higher education to adopt many of the strategies and processes used in

corporate America. These strategies include adopting strategic management and implementation techniques that have been developed by successful entrepreneurs (Aleong, 2018). Effective leadership can cultivate innovation and an entrepreneurial spirit within an HEI (Savior, 2017). Cleverly-Thompson (2016) asserted that academic leaders must ensure that their institutions remain successful and competitive; to do so, leaders need to acquire, develop, and utilize entrepreneurial skills. Higher education leaders with high IEOs may help institutions of higher learning address key issues such as enrollment and financial challenges.

Entrepreneurship in higher education is described as engagement in any activity that combines risk-taking, innovation, and opportunity; in addition, entrepreneurship can involve everyone in the institution: the president, deans, faculty, staff, and students (Cleverly-Thomson, 2016). According to Cleverly-Thompson (2016), academic entrepreneurship is demonstrated in an academic setting when individuals or groups act as innovators, risk-takers, creators, change-agents, team-builders, visionaries, and proactive leaders. Entrepreneurship activities occur in higher education when members of the institution create new structures, processes, and orientations that predispose the institution to adapt and remain flexible.

Bowyer and Vitale (2018) identified three practices related to academic entrepreneurship: “opportunity seeking (corporate venturing), novelty seeking (innovation), and advantage-seeking (strategic renewal)” (p. 12). The authors contended that to ensure an organization's success, academic entrepreneurs must engage in these three practices and develop the ability to exploit opportunities that they have either created or discovered.

Peck (1984) was one of the first researchers to examine academic entrepreneurship. He identified 54 small colleges with less than 2,500 full-time students (full-time teaching equivalency or FTE); these colleges were identified as successful by individuals who had served

on accrediting teams, were consultants to small colleges, and who had conducted research related to small colleges. Peck further stratified the sample by including only those colleges whose endowment did not exceed 12% of the universities' operating budgets, who met specific financial ratios, who served a limited geographical region, and whose president had served at least five years or at least seven years in an administrative capacity at the university under study. In total, only 20 institutions met all of the relevant criteria. Peck (1984) analyzed planning, financial, and other institutional documents from each of the 20 institutions and then conducted qualitative interviews. The qualitative interviews sought to identify and confirm administrative processes, style, and support found in the institutional documents. Peck (1984) followed an interview protocol designed to "avoid leading the interviews into conventional planning and management discussion, in order to document as clearly as possible what actually took place and to avoid the possibility of premature closure by trying to fit activities into standard categories" (p. 271). From these qualitative data, Peck identified a list of seven characteristics of a successful small college. According to Peck, successful colleges: (a) were strongly committed to their mission and purpose, (b) constantly anticipated change and identified opportunities, (c) were highly innovative and creative, (d) made decisions by intuition, (e) relied heavily on administrative leadership as opposed to organizational structures, (f) sought to be effective and not just efficient, and (g) were well-run at the operational level. Peck further asserted that academic leaders needed to be entrepreneurial to create and manage a small college.

Clark (1998) conducted a seminal piece of qualitative research funded by the Mellon and Spencer Foundations on academic entrepreneurship. The researcher designed and conducted a case study of five universities in Europe to determine ways in which the institutions adapted to change. The research sample was selected from Clark's review of research and publications of

HEIs in Europe that had been actively engaged in transformation and restructuring for at least 10 years, as well as nominations from academics in universities world-wide. Clark conducted two rounds of one- to two-week immersive visits at each of the five universities to gather information related to each institution's transformation efforts and activities. Data collection included reviews of institutional accreditation and policy documents; classroom visits; walk-arounds of the universities' common areas such as student centers, hallways, and laboratories; participation in meetings; and approximately 25 hours of audiotaped interviews of administrators, faculty, and students at each participating university. Clark subsequently reduced the vast amount of data in order to identify not only unique patterns of transformation and adaptation at each university, but also common pathways of transformation that might inform other universities in their efforts to restructure and transform their institutional practices.

From the case study's analyses and evidence, Clark (1998) developed a theoretical framework of five key elements that described the ways that universities transformed themselves in response to changes in their environments. Clark (1998) argued that transformation does not come from a few departments or divisions that practice innovation nor through simple top-down leadership. Rather, the researcher argued that "transformation occurs when a number of individuals come together in university basic units and across a university over a number of years to change, by means of organized initiative, how the institution is structured and oriented" (Clark, 1998, p. 4).

The first of the five key elements Clark (1998) discussed was a strong leadership core to steer the organization. Historically, the bureaucratic nature of many HEIs slowed change. Therefore, entrepreneurial HEI leaders must provide strong group leadership to navigate through the bureaucracy of the organization to facilitate change. Secondly, universities must develop

connections that extend beyond the institution's traditional boundaries. This connection-oriented strategy could include the development of “professionalized outreach offices that work on knowledge transfer, industrial contact, intellectual property development, continuing education, fundraising, and even alumni affairs” (Clark, 1998, p. 6). Because governmental support for higher education fluctuates and often declines, Clark wrote that HEIs must diversify their funding bases as the third element of success. This diversification could include grants, fundraising from philanthropic organizations, and revenue streams from the sale and use of intellectual property. The fourth element of Clark's framework was “the stimulated academic heartland” (Clark, 1998, p. 7); in other words, the various academic units of an HEI must “buy into” the entrepreneurial vision of its leaders. If the academic units do not support the elements of Clark's framework, they can become obstacles to the transformation process. The fifth and final element of Clark’s theoretical framework of entrepreneurship in the academy proposed that leaders must embed the first four elements into the culture of the entire institution. According to Clark (1998), integrating the first four elements of the framework into the academic culture would facilitate not only organizational transformation but also the institution’s reputation.

The evidence from this case study and its proposed framework resulted in Clark’s classic book (1998) on creating entrepreneurial universities in an effort to inform other HEIs regarding methods and approaches to become more innovative and agile. Clark (1998) also emphasized the need for implementation of new managerial perspectives and actions if universities were to succeed in their efforts to change and adapt to rapidly changing environments.

In one of the most extensive studies of its kind, Fisher and Koch (2004) analyzed surveys from 713 HEI presidents. The sample included leaders from a wide variety of HEIs in the United States, including public, private, for-profit, not-for-profit, religious, and secular

institutions from all nine of the Carnegie Commission institutional categories. The researcher conducted the survey in a two-stage process. First, the researchers sent a letter of introduction to more than 1,500 individuals who occupied or recently occupied a strategic position in higher education. Among those contacted were college presidents, accrediting body leaders, and chief executive officers of state-level higher education agencies. The letter asked the respondents to nominate HEI presidents they perceived as successful. A total of 701 college and university presidents were nominated. Fisher and Koch (2004) then sent nominated presidents an 82-item survey instrument. The survey collected demographic data and asked respondents to answer a 5-point Likert scale to collect information on personal attitudes and leadership styles. A total of 371 nominated presidents returned usable surveys (a response rate of 53%). In the second phase of the study, Fisher and Koch (2004) sent an identical survey to 1,289 college or university presidents whom their peers did not nominate as successful presidents. In total, 342 (27%) non-nominated presidents responded and provided usable surveys.

Fisher and Koch (2004) defined effective presidents as those who were nominated as successful by their peers (p. 44). Fisher and Koch (2004) defined representative presidents as those presidents who did not receive a nomination (p. 40). Using those definitions, 371 presidents were categorized as effective and 342 as representative. The researchers analyzed the mean differences between the two groups on the survey items. The results revealed significant differences ($p < 0.01$) between the attitudes of representative and effective presidents in the areas of (a) violating the status quo, (b) generating innovative ideas, (c) forging partnerships outside of the HEI, and (d) belief in an organizational structure. Fisher and Koch (2004) concluded that their findings supported the idea that effective presidents were more entrepreneurial in nature than representative presidents. The researchers stated that their results supported Peck's (1984)

theory regarding entrepreneurial colleges since “the difference between the means of the variables for effective and representative presidents is always in the direction that entrepreneurial theory forecasts” (Fisher & Koch, 2004, p. 103).

Research on the influence of academic leaders’ IEOs and their organizations’ performance is practically non-existent. However, Alfrević et al. (2018) examined the relationships between the IEOs of primary and secondary principals and the entrepreneurial orientations of their schools. These authors surveyed primary and secondary school principals ($N = 369$) to determine both the organizational entrepreneurial orientations of the schools and the IEOs of the principals. The researchers obtained a list of all primary and secondary schools in Bosnia & Herzegovina and Croatia from the internet and randomly selected 20% of the schools from the list. The researchers then developed surveys to measure the IEOs of the principals and the entrepreneurial orientation of their schools based on themes identified by Yemini, Addi-Raccah, and Katarivas (2015) related to entrepreneurial schools. The Cronbach alpha for the IEO items was 0.876, and 0.731 for the schools’ entrepreneurial orientation items, indicating internal consistency of the instruments for this sample. All survey items were measured using a 5-point Likert scale. The principals completed one survey to assess the entrepreneurial orientations of their schools and a different survey to assess their personal IEOs. Alfrević et al. (2018) compared the results from the two different surveys (school entrepreneurial orientation and personal IEO). The survey results of both the principals’ personal IEO and the schools’ EO were both high and did not conform to the presumption of a normal distribution. Therefore, the researchers used Spearman’s correlation coefficient to analyze the data. The results uncovered a significant positive relationship ($p < .01$) between the IEOs of school principals and the entrepreneurial orientations of their schools. Alfrević et al. stated that this relationship was “not

surprising, due to the presumed central role of a principal in creating an innovative entrepreneurially centered educational institution” (p. 92).

Summary

This review of literature identified a number of studies demonstrating significant positive relationships between entrepreneurial orientation and organizational performance (Hussain et al., 2017; Kantur, 2016; Mason et al., 2016; Rauch et al., 2009). These relationships may explain ways that the IEO of an educational leader can positively or negatively influence an organization. Studying entrepreneurial orientation at the individual level is also important to organizations that attempt to teach entrepreneurship to its employees and other stakeholders.

Because entrepreneurship is a key component of a country's economic growth, an understanding of the entrepreneurial mindset, actions, and behaviors is vital. As a result, entrepreneurial education is growing in prominence in many countries (Ozaralli & Rivenburgh, 2016). In the 1940s, Harvard's business school was among one of the first institutions of higher education to teach courses specifically focused on entrepreneurship; today, institutions of higher education across the world teach entrepreneurship (Ozaralli & Rivenburgh, 2016). This global emphasis on entrepreneurial education is related to the belief that entrepreneurial education can be taught and developed over time to enhance leadership skills and to increase motivation among potential entrepreneurs (Ozaralli & Rivenburgh, 2016). Research on IEO is critically important to entrepreneurial education in order to identify key entrepreneurial traits at the individual level and to determine the interventions that best promote entrepreneurial mindsets (Obschonka & Stuetzer, 2017).

Many studies examined entrepreneurial orientation in higher education. However, most of these studies focused on entrepreneurial orientation in the context of teaching and measuring

entrepreneurship of students (e.g., Al Mamun et al., 2018; Gorostiaga et al., 2019; Obschonka & Stuetzer, 2017). Little research exists on the relationships between the IEOs of academic leaders and student success. The current study helps to fill this gap in the existing literature. The methods used to conduct the study and to address the research questions are presented in chapter three.

III. METHODOLOGY

The purpose of this study was to examine the relationships between the individual entrepreneurship orientations (IEOs) of academic leaders in the Florida College System (FCS) and college students' success rates. This research study was a non-experimental, correlational study of the relationships between the IEO scores of three types of academic leaders in the FCS and each institution's student success rates; in addition, the relationships between the overall IEO scores and the overall student success rates in the FCS were explored

Sample

The population for this exploratory study consisted of all FCS presidents, vice presidents (or equivalent title), and academic deans (or equivalent title) who served in the FCS ($N = 28$ colleges) in the spring of 2019, who supervised the Associate in Arts degree, and whose name and position were published on the college's website. Respondents who indicated that they served in dual roles (faculty and administration) were categorized as administrators by the researcher.

Instrumentation

The independent variables in this correlation study were the mean IEO scores of Florida College System's leaders (presidents, vice-presidents, academic deans, or equivalent title). The dependent variable was student success rates for the 2017-18 year as reported in the FCS Accountability Report (Florida Department of Education, 2018). The student success rate is calculated as the percentage of a cohort of First Time in College (FTIC) students who (a) enrolled at the institution in the cohort's fall semester and (b) either graduated or were in good

standing (maintaining a GPA of 2.0 or higher) or (c) successfully transferred to a four-year college or university within four years. Students must have completed at least 18 college credits to be included in the cohort. The study examined the cohort success rate of students in the Associate of Arts program who enrolled in the fall of 2014 and graduated and/or transferred to a four-year college or university.

Bolton and Lane (2012) developed the IEO instrument as a univariate measure of an individual's entrepreneurial orientation. The IEO measures respondents' self-perceptions of risk-taking, innovation, and proactiveness. The 10-item survey included three statements that measure risk, four statements that measure innovation, and three statements that measure proactiveness. See Table 1 for a depiction of the items and subscales.

Table 1

Items and Subscales of the Individual Entrepreneurship Orientation Scale

IEO Factor	Item
Risk	I like to take bold action by venturing into the unknown.
Risk	I am willing to invest a lot of time and/or money on something that might yield a high return.
Risk	I tend to act “boldly” in situations where risk is involved.
Innovation	I often like to try new and unusual activities that are not typical but not necessarily risky.
Innovation	In general, I prefer a strong emphasis in projects on unique, one-of-a-kind approaches rather than revisiting tried and true approaches used before.
Innovation	I prefer to try my own unique way when learning new things rather than doing it like everyone else does.
Innovation	I favor experimentation and original approaches to problem-solving rather than using methods others generally use for solving their problems.
Proactiveness	I usually act in anticipation of future problems, needs, or changes.
Proactiveness	I tend to plan ahead on projects.
Proactiveness	I prefer to “step-up” and get things going on projects rather than sit and wait for someone else to do it.

Note. Adopted from “Individual entrepreneurial orientation: Development of a measurement instrument,” by D.L. Bolton & M. D. Lane, 2012. *Education + Training*, 54(2/3) p. 229. Copyright 2012 by Emerald Group Publishing Limited. Adapted with permission.

The IEO instrument (Bolton and Lane, 2012) had a 5-point Likert scale that consisted of the choices strongly disagree, disagree, neither agree or disagree, agree, and strongly agree. The researchers assigned scores on the original instrument based on the following scale: strongly disagree = 1, disagree = 2, neither agree or disagree = 3, agree = 4, strongly agree = 5. Bolton and Lane (2012) calculated the IEO by summing the scores of each participant’s responses to each of the items in the 10-item survey.

Initially, Bolton and Lane (2012) generated a survey based on the five categories of EO identified by Lumpkin and Dess (1996): innovativeness, willingness to take risks, autonomy, proactiveness, and competitive aggression. The researchers administered the individual entrepreneurship orientation survey to 1,102 students from a regional mid-south university. The researchers then assessed the internal consistency of the initial items in the instrument. The Cronbach α scores for the college student sample were low on the factors of autonomy (0.208) and competitiveness (0.585). The researchers then analyzed the responses using principal component analysis. The results of the principal component analysis indicated that two categories should be removed from the survey. The researchers used the promax rotation method of factor analysis with Kaiser normalization to confirm the results of the principal component analysis (See Table 2). The rotation converged in five iterations. After this factor analysis, the researchers removed the two categories of autonomy and competitiveness from the survey. The removal by Bolton and Lane (2012) of those two items from the factor analysis resulted in the final 10-item IEO survey. In the college student sample, innovativeness, risk-taking, and proactiveness accounted for 60% of the total variance of the instrument (Bolton & Lane, 2012). The Cronbach alphas of all three subscales used in the final version exceeded 0.70 (Bolton & Lane, 2012).

Table 2

Factor Loadings of Three Factors of IEO Items (N = 1,202)

Item	Innovativeness	Proactiveness	Risk-Taking
INNOV1 I often like to try new and unusual activities that are not typical but not necessarily risky.	0.51	0.13	0.12
INNOV3 In general, I prefer a strong emphasis in projects on unique, one-of-a-kind approaches rather than revisiting tried and true approaches used before.	0.78	-0.05	-0.03
INNOV5 I favor experimentation and original approaches to problem-solving rather than using methods others generally use for solving their problems	0.73	-0.02	-0.10
PROACT1 I usually act in anticipation of future problems, needs or changes.	0.10	0.70	-0.04
PROACT4 I tend to plan ahead on projects.	-0.12	0.86	-0.02
PROACT5 I prefer to “step-up” and get things going on projects rather than sit and wait for someone else to do it.	0.07	0.78	0.06
RISK2 I like to take bold action by venturing into the unknown.	0.18	-0.06	0.73
RISK3 I am willing to invest a lot of time and/or money on something that might yield a high return.	-0.12	0.17	0.74
RISK5 I tend to act “boldly” in situations where risk is involved.	-0.03	-0.10	0.87
Eigenvalues	3.43	1.51	1.05

Notes. Extraction method: principal component analysis; rotation method: promax with Kaiser normalization. Rotation converged in five iteration. Adapted from “Individual entrepreneurial orientation: Development of a measurement instrument,” by D.L. Bolton & M. D. Lane, 2012. *Education + Training*, 54(2/3) p. 227. Copyright 2012 by Emerald Group Publishing Limited. Adapted with permission.

Bolton and Lane (2012) established criterion-related validity of the survey by comparing the students’ composite IEO score and the three IEO subscales (innovativeness, risk-taking, and proactiveness) to the same students’ ($N = 1,102$) responses to items related to their

entrepreneurial intention. The researchers measured entrepreneurial intention by students' responses on a 5-point Likert scale to two questions about their desires to start a business and work for themselves. Bolton and Lane (2012) uncovered significant correlations (Table 3) in the comparisons of the participants' IEO scores and entrepreneurial intent ($p < .01$).

Table 3

Pearson r Correlation Matrix of IEO Subscales and a Separate Measure of Entrepreneurial Intent (N = 1,102)

Measure	1	2	3	4	5
1. IEO Risk-taking subscale	1.00				
2. IEO Innovative subscale	0.47*	1.00			
3. IEO Proactiveness subscale	0.25	0.34*	1.00		
4. I would like to work for myself.	0.27*	0.33*	0.21*	1.00	
5. I would like to start my own venture.	0.36*	0.36*	0.19*	0.78*	1.00

Note. From “Individual entrepreneurial orientation: Development of a measurement instrument,” by D.L. Bolton & M. D. Lane, 2012. *Education + Training*, 54(2/3) p. 228. Copyright 2012 by Emerald Group Publishing Limited. Adapted with permission.

*Correlation coefficients are significant at the 0.01 level (two-tailed).

In a later study to further validate the IEO survey, Bolton (2012) administered the IEO survey to small business owners in Kentucky and Tennessee ($N = 340$). This study compared IEO scores to the small business owners' self-reported perceptions of their overall business success as measured on a 5-point scale. The researchers grouped participants' IEO scores into categories of high, moderate, and low IEOs by grouping responses in quartiles. The researchers categorized the responses in the top quartile as high, and responses in the lowest quartile as low. Bolton (2012) categorized all other responses as moderate. The researcher conducted *t*-tests using the high and low categories to compare the mean IEO of the high and low groups with the mean scores of the business owners' self-reported success score in the corresponding group. The

participants with high IEO scores had significantly higher mean scores of self-reported success than participants with low IEO scores ($p = .03$). Bolton (2012) concluded that this second research study “demonstrates that it [the IEO] is a reliable and valid measure of entrepreneurial orientation at the individual level” (Bolton, 2012, p. 97).

The researcher of the current study obtained written permission (see Appendix C) to use and modify the IEO instrument developed by Bolton and Lane (2012) to measure the IEOs of academic leaders in the FCS. The researcher modified the IEO instrument by changing the 5-point Likert scale to a 4-point Likert scale: strongly disagree, disagree, agree, and strongly agree. In addition to the IEO, the researcher collected demographic and descriptive survey items to obtain information about the respondents and added three additional 4-point Likert scale questions to assess the participants’ perceived abilities to initiate entrepreneurial activity at their colleges (see Appendix A). The IEO composite scores of the FCS presidents, vice-presidents (or equivalent title), and academic deans served as the independent variables in the proposed study. In cases in which multiple individuals from the same institution responded ($n = 12$), the composite scores for the institution were averaged and compared to the student success rate of the college. The researcher included college personnel who taught as well as served as administrators in the academic administrator category.

The dependent variable in this study was the student success rate of the Associate of Arts program of each institution in the FCS. The researcher collected and compiled the success rates for each college’s Associate of Arts program as reported in the 2018 Accountability Report. Both the independent and dependent variables consisted of interval level data, thus meeting the parameters of the inferential data analyses.

Data Collection and Analyses

Research Questions

1. What are the relationships between the individual entrepreneurial orientation scores of FCS leaders and students' success rates?
2. What are the relationships between the individual entrepreneurial orientation scores of presidents, vice-presidents, and deans in the FCS and college students' success rates?
3. Which of the college leaders' individual entrepreneurial orientation scores (i.e., presidents, vice-presidents, or deans) are the most robust predictors of college students' success rates?

Data Collection

The population for this exploratory study consisted of all FCS presidents, vice presidents (or equivalent title), and academic deans (or equivalent title) who were serving in the FCS ($N = 28$ colleges) in the spring of 2019, who supervised the Associate of Arts degree, and whose names and positions the colleges were publicly posted on their websites. The researcher used published organizational charts obtained from each college's website to determine which academic deans (or equivalent title) were responsible for the supervision of the Associate of Arts degree. The researcher gathered all the publicly available email addresses for each academic leader position at each of the 28 state colleges via each college's website or a web search. The researcher then emailed the presidents, provosts, vice presidents of academic affairs, and academic deans who supervise the Associate of Arts program, as well as individuals with equivalent positions in the FCS ($N = 228$). The email contained a brief description of the research study, a request for voluntary participation in the study, and a link to an online survey developed by the researcher (see Appendix D). The researcher surveyed academic leaders in the FCS using the modified IEO online instrument originally developed by Bolton and Lane (2012).

See Appendix B for a copy of the modified IEO survey. The sample ($N = 74$) consisted of all respondents to the survey.

Descriptive Data Analysis

Once the researcher transferred the data from the online survey to a spreadsheet, the dissertation committee's chair deleted the names of the individual colleges and assigned codes to each college so the researcher could not identify respondents and their scores individually. As a result, the researcher reported all analyses as aggregated and anonymous results, including the data related to the dependent variables of student success rates.

The researcher computed the survey response rate ($N = 74$; 32.46%) and compiled and reported the demographic data to describe the composition of the sample's respondents. The effects of missing data were computed using Little's MCAR.

The researcher coded the FCS's leadership's responses on the IEO in the following manner: strongly agree = 4; agree = 3; disagree = 2; and strongly disagree = 1. The IEO data were compiled and averaged to obtain frequencies, means, and standard deviations for each item, the subscales, and the overall IEO composite scores of the academic leaders. Correlation tables were computed and reported to describe the relationships between mean IEO items, IEO subscales, and IEO composite scores and the dependent variables of each institution's student success rates. When more than one participant responded from each institution, the researcher averaged the IEO scores of all individuals to create a composite IEO score for that institution.

Hypothesis Testing

The researcher conducted the following analyses to address the research questions and hypotheses proposed in this study. Because there is so little research related to the IEOs of academic leaders of HEIs, null hypotheses were considered prudent.

H_0^1 : There are no significant relationships between mean composite IEO scores of academic leaders and students' success rates.

To test hypothesis one, the researcher computed the mean composite IEO score of this sample of FCS presidents, vice presidents, and deans. The researcher then calculated each institution's mean composite IEO score. If only one person from the institution responded, his or her score was used. If more than one leader responded from an institution, the mean for all respondents was calculated and averaged. The researcher then obtained the overall composite IEO mean for the entire sample. Finally, the researcher matched and correlated the total sample's mean IEO composite score to the mean overall FCS success rate score using Pearson r to determine whether the relationships were significant.

H_0^2 : There is no significant relationship between the mean composite IEO scores of each leadership group (presidents, vice-presidents, and deans) and their students' success rates as measured by the FCS' accountability system.

The researcher conducted correlation analyses using the Pearson product-moment correlation statistic (r) to determine the degree of relationship between the mean composite IEO scores of each of the three leadership groups and their institution's student success rate.

H_0^3 : The IEO composite scores of FCS leaders are not significant predictors of student success rates as measured by the FCS' accountability system.

To test hypothesis three, the mean IEO composite scores of this sample's leadership groups (FCS presidents, vice presidents, and deans) were entered into a step-wise multiple regression model to determine whether any of the leadership types were significant predictors of the mean FCS's student success rate. The results of the analyses are presented in chapter four.

IV. RESULTS

Introduction

The purpose of the study was to examine the mathematical relationships between the Individual Entrepreneurial Orientation (IEO) of academic leaders in the FCS and college students' success rates. The research study was a non-experimental, correlational study of the relationships between the IEO scores of three types of academic leaders in the FCS and each institution's success rates as well as the overall FCS's success rates. The researcher used a modified instrument originally developed by Bolton and Lane (2012) to measure IEO. The researcher sent emails to the publicly listed email addresses of academic leaders at all 28 FCS institutions asking them to participate voluntarily in an online survey. The study's sample consisted of all FCS academic leaders who responded to the modified IEO survey (see Appendix B). Quantitative analyses of IEO composite scores and FCS success rates were conducted.

Preliminary Results

Prior to the analyses and reporting of findings relative to the study's three research questions, preliminary analyses were conducted and reported using descriptive and inferential statistical techniques: missing data, internal reliabilities of participant responses to items on the study's survey instrument, and essential demographic data.

Response Rate

The IEO survey's response rate for academic leaders was 32.46% ($n = 74$). However, one participant did not complete the survey, resulting in a sample size of 73 and a response rate of 32%. Nineteen of the 28 FCS colleges (68%) were represented by one or more survey

respondents. The response rates of both academic leaders and colleges were well above the 10% to 15% level of survey response rates commonly associated with survey methodologies (Fryrear, 2015).

Missing Data

Participants' response rates to the 23 demographic items, the IEO, and supplementary survey items reflected an inconsequential level of missing data (0.27%; $n = 2$). Using Little's MCAR, the missing data were considered sufficiently random in nature: $\chi^2(9, N = 73) = 7.26, p = .61$. As a result, expectancy maximization (EM) and multiple imputation (MI) analyses were not conducted.

Internal Consistency

The overall internal consistency of the survey items in this sample was high; Cronbach's α was .82 ($p < .001$). The lowest internal reliability was among responses from college academic deans ($\alpha = .71$). Table 4 contains a summary of the internal reliabilities of participant responses by academic position.

Table 4

Internal Reliability of Composite IEO and Higher Education Position (N=73)

Leadership Position	Cronbach's alpha
President/CEO ($n=6$)	.75*
VP/Provost ($n=26$)	.81***
Academic Dean ($n=31$)	.71***
"Other" ($n=10$)	.91***

* $p = .02$ *** $p \leq .001$

The Pearson product-moment correlation statistic (r) was used to determine the relationships between the composite IEO score and each of the three categories of IEO (risk-taking, innovativeness, and proactivity). All three categories of the IEO reflected a large, statistically significant mathematical relationship with the overall IEO composite score ($p < .001$). This result is consistent with Bolton and Lane's (2012) assertion that the IEO instrument is a univariate measure. In this sample, the mathematical relationship between participant IEO score and the category was greatest for the category of innovativeness ($r = .84$) and was statistically significant ($p < .001$). Table 5 contains a summary of the mathematical relationships between composite IEO scores and IEO categories.

Table 5

Pearson r Correlations between Composite IEO Scores and IEO Categories

Category	r
Risk-Taking	.80***
Innovativeness	.84***
Proactivity	.67***

*** $p < .001$

Demographic Results

The research sample was comprised of 73 respondents to the survey. The researcher conducted an evaluation of four independent demographic variables associated with study participants: gender, administrative position, type of college (urban or rural), and highest academic degree earned. A minority of participants (43.8%) identified as female, and a majority of participants (54.7%) identified as male. One participant (1.4%) preferred not to identify his or her gender.

The sample included participants who served in a variety of academic capacities. Thirty respondents (41.1%) self-identified as serving as an academic dean. Six participants (8.2%) identified as president or chief executive officer, and 19 (26%) identified as serving as a vice-president or provost. Eighteen respondents (24.7%) identified themselves as “Other.” The survey prompted respondents who selected “Other” to indicate their title in the survey. The “other” titles included: associate dean, associate dean of academic affairs, associate dean of faculty, associate provost, associate vice president, associate vice president of academic affairs, dean of faculty and chief academic officer, department chair, district director, executive dean, occupational dean, and vice provost.

A majority of respondents in this sample ($n = 51$; 68.9%) worked at an urban school; in contrast, 22 (29.7%) reported serving at a rural school. One participant (1.4%) did not respond to this survey question.

Participants expressed diverse responses to the question that asked them to identify the highest degree earned. Fifty-two participants (71.2%) held a doctoral degree. Sixteen (21.9%) possessed a master’s degree, one (1.4%) held a Juris Doctorate, one (1.4%) was a doctoral candidate, and one (1.4%) held a doctorate in veterinary medicine. One participant (1.4%) responded to the item as “other”.

Descriptive Results

Participants completed the IEO portion of the survey by responding to a 4-point Likert scale ranging from 1 (*strongly disagree*) to 4 (*strongly agree*). The percentage of respondents who either agreed or strongly agreed (% agreement) and descriptive data analyses are illustrated in Table 5. In general, the respondents scored high on all ten items of the IEO instrument. The sample’s mean for each of the 10 IEO questions exceeded 2.5 (the midpoint of the 4-point scale

or null scale value) and ranged from a mean of 2.73 to 3.47. A one-sample *t*-test between the respondents' mean for each IEO survey item and the scale midpoint (2.5) yielded significant differences on all ten items on the IEO survey. The effect size for five of IEO items was large or very large (see Table 6).

Table 6

Summary of Participant Responses to IEO Survey Items

Item	<i>n</i>	% Agreement	Mean*	<i>SD</i>	<i>t</i>	<i>d</i>
1-Bold action by venturing into unknown	73	76.7%	2.89	0.64	5.25***	0.61
2-Willing to invest time in high yield ventures	73	93.1%	3.22	0.65	9.44***	1.11 ^b
3-Act boldly where risk is involved	73	65.7%	2.77	0.68	3.37***	0.40
4-Try new and unusual activities	73	91.7%	3.21	0.62	9.68***	1.15 ^b
5-Strong emphasis on unique rather than tried and true	73	64.4%	2.73	0.73	2.64**	0.32
6-Prefer own unique way when learning rather than doing it like others	73	76.7%	2.95	0.64	5.92***	0.70
7-Favor experimental and original approaches to problem-solving	71	78.1%	2.96	0.60	6.47***	0.77
8-Act in anticipation of future problems, needs, or changes	73	95.9%	3.33	0.55	12.78***	1.51 ^a
9-Plan ahead on projects	73	97.3%	3.47	0.60	13.69***	1.62 ^a
10-Prefer to “step-up” and get things going instead of waiting for others	73	98.6%	3.45	0.58	14.07***	1.64 ^a

Note. * Likert scale of 1-4

^a Very Large Effect ($d \geq 1.30$) ^b Large Effect ($d \geq .80$)

** $p = .01$ *** $p \leq .001$

The composite IEO scores had a possible range of 10 to 40. The subscales of Risk-Taking and Proactiveness both had a range of 3 to 12. The subscale of Innovation had a range from 4 to 16. Means for the sample's composite score and subscale scores are displayed in Table 7.

Table 7

Respondents' Composite and Subscale Mean IEO Scores

Composite IEO (<i>N</i> = 73)	Risk-Taking (<i>N</i> = 73)	Innovation (<i>N</i> = 73)	Proactiveness (<i>N</i> = 73)
30.85	8.88	11.74	10.23

The composite IEO scores by leadership position are displayed in Table 8.

Table 8

Mean Scores of Higher Education Leaders and IEO Categories and Composite Score

Category	President/CEO (<i>n</i> = 6)	VP/Provost (<i>n</i> = 26)	Academic Dean (<i>n</i> = 31)	"Other" (<i>n</i> = 10)
IEO Composite	29.00	32.42	30.45	29.30
Risk-Taking	8.00	9.31	9.00	7.90
Innovativeness	11.00	12.58	11.39	11.20
Proactivity	10.00	10.54	10.07	10.20

The composite mean IEO score by leadership position ranged from 29.00 for the President/CEO group (*n* = 6) to 32.42 for the vice-president/provost group (*n* = 26). The vice-presidents and provosts had the highest mean scores in all three categories of the IEO (risk-taking, innovativeness, and proactiveness). Those respondents who identified their academic leadership position as "other" (*n* = 10) had the lowest composite score of 29.30 on the IEO. The category of risk-taking revealed the lowest scores for all four of the leadership types.

Table 9 depicts the results of the three survey items added by the researcher to assess the academic leaders' ability to implement entrepreneurial activity at their institutions. Responses to

this section of the survey were measured by a 4-point Likert scale ranging from 1(*strongly disagree*) to 4 (*strongly agree*). Table 9 summarizes the results of all four leadership groups to these three survey items.

Table 9

Mean Scores of Higher Education Leaders and Entrepreneurial Environment

Survey Question	President/CEO (n = 6)	VP/Provost (n = 26)	Academic Dean (n = 31)	“Other” (n = 10)
I have the freedom to implement entrepreneurial strategies at my institution.	2.67	2.77	2.71	2.50
Most of the entrepreneurial activity at my institution is initiated by my superiors or Board of Trustees.	2.50	2.12	2.32	2.50
Faculty members at my institution support entrepreneurial activities.	3.00	2.81	2.77	2.50

Note. All responses were measured on a 4-point Likert scale from 1= *strongly disagree* to 4 = *strongly agree*.

The vice-president and provost group reported the lowest mean score ($M = 2.12$; $n = 26$) on the item related to the initiation of entrepreneurship by superiors or the college Board of Trustees. The president/CEO group reported the highest mean score of the four leadership types with regard to perceptions that faculty supported entrepreneurship ($M = 3.00$; $n = 6$).

Results of Analyses of Research Questions and Hypotheses

Research Question 1

1. What are the relationships between the individual entrepreneurial orientation scores of FCS leaders and students’ success rates?

Hypothesis 1

H_0^1 : There are no significant relationships between mean composite IEO scores of academic leaders and students’ success rates.

Analysis

Correlation analyses using the Pearson product-moment correlation statistic (r) were conducted to determine the relationships between the composite means of higher education leaders at each of the FCS institutions and their student success rates. If only one academic leader responded to the survey, that leader's composite IEO score was used in the correlation analysis. If more than one leader responded to the survey, the composite mean scores of all respondents from that school were averaged and used in the correlation analysis. The mean composite score for all colleges was then computed and compared to the mean success rate score for all the colleges using Pearson r correlation statistics. Student success rates for each college were calculated by the Florida Department of Education and reported in the 2018 Accountability Report. The Florida Department of Education calculates student success rate as the percentage of 2014 cohorts of FTIC students who enrolled at an FCS institution in the fall and who either graduated, were in good standing at the college, or successfully transferred to another college or university within four years. Students must have completed at least 18 college credits to be included in the cohort (Florida Department of Education, n.d.a).

Findings

The results of the correlation analyses indicated that mean IEO composite scores of the FCS' higher education leaders were moderately related to mean student success rates ($r = .37$) with a large degree of associative effect ($r^2 = .14$; $d = .81$). The correlation in research question one approached the conventional threshold for statistical significances ($p < .05$) at $p = .05(7)$. Using *posteriori* power analysis (G*Power), an r value of .55 or greater with a sample size of 19 would have produced a statistically significant finding. In light of the non-statistically significant finding for research hypothesis one, the null hypothesis was retained.

Research Question 2

2. What are the relationships between the individual entrepreneurial orientation scores of presidents, vice-presidents, and deans in the FCS and college students' success rates?

Hypothesis 2

H₀²: There is no significant relationship between the mean composite IEO scores of each leadership group (presidents, vice-presidents, and deans) and their students' success rates as measured by the FCS' accountability system.

Analysis

The Pearson product-moment correlation statistic (*r*) was used to determine the mathematical relationships between the leadership groups of Florida State Colleges and their student success rates. Table 10 contains a summary of the mathematical relationships between IEO composite scores by participant position and student success rates.

Table 10

Pearson r Correlations between Mean IEO Composite Scores and Mean Student Success Rates by Position

Leadership Position	<i>n</i>	<i>R</i>	<i>p</i> [*]
President/CEO	6	-.47	.35
VP/Provost	26	-.12	.55
Academic Deans	31	-.05	.81
“Other”	10	-.25	.50

**p* > .05

Findings

None of the IEO scores of the four leadership positions reflected a statistically significant mathematical relationship with student success rates. The greatest degree of mathematical relationship in the analyses was manifested by the six college presidents or CEOs who responded

to the survey ($r = -.47$). In light of the non-statistically significant finding for research hypothesis two, the null hypothesis was retained.

Research Question 3

3. Which of the college leaders' individual entrepreneurial orientation scores (i.e., presidents, vice-presidents, or deans) are the most robust predictors of college students' success rates?

Hypothesis 3

H_0^3 : The IEO composite scores of FCS leaders are not significant predictors of student success rates as measured by the FCS' accountability system.

Analysis

The simple linear regression test statistic was used to assess the predictive ability of the composite IEO scores of each leadership group to predict the dependent variable of student success rates. Table 11 displays a summary of findings for the predictive model used in research question three.

Table 11

Prediction of IEO Scores of Higher Education Leaders and Student Success Rates (n = 73)

Leadership Position	β	Standard Error	Standardized β	Cohen's <i>d</i>
President/CEO (<i>n</i> =6)	-0.58	0.55	-.47	1.06*
VP/Provost (<i>n</i> =26)	-0.21	0.34	-.12	.24
Academic Dean (<i>n</i> =31)	-0.07	0.27	-.05	.11
"Other" (<i>n</i> =10)	-0.34	0.48	-.24	.50**

* Large Effect ** Medium Effect

Findings

Although the effect size for IEO scores for presidents/CEOs was the most robust in predicting student success ($d = 1.06$), none of the relationships between leadership categories and student success scores was statistically significant. In light of the non-significant findings for research question three, the null hypothesis was retained.

Ancillary Analyses

IEO item analyses were conducted to examine the relationships between mean scores on individual items and student success rates. Specifically, an ancillary analysis was conducted to address the following question: Do any of the IEO items predict students' success rate?

Multiple linear regression was used to determine whether any of the 10 IEO items were significant predictors of college students' success rates. In the analysis, the 10-item IEO composite mean scores represented independent predictor variables in the modeling process. The results of the analysis are presented in Table 12.

Table 12

Significant IEO Item Predictor of Student Success Rate

Model	<i>B</i>	<i>SE</i>	<i>Standardized β</i>
Intercept	85.59	6.55	
I like to take bold action by venturing into the unknown.	-4.47	1.85	-.45*

* $p = .02$ $d = 1.01$ (Large Effect)

The only statistically significant IEO survey item ($p = .02$) was the item related to taking bold action by venturing into the unknown. The predictive association between the IEO item and student success rate was significant, inverse, and considered large ($d = 1.01$). This result

indicated that for every full unit increase in the response to this survey item, a 4.47 unit of decrease in student success rate would be predicted.

Multiple linear regression was also used to determine whether any of the three IEO sub-categories (risk-taking, innovativeness, and proactiveness) were significant predictors of college students' success rates. The results were not significant. The non-significant results were not surprising since the IEO instrument is a univariate instrument (Bolton and Lane, 2012).

The researcher included three additional questions in the survey to measure participants' perceptions of entrepreneurial activities at their institutions (Table 13). The respondents were asked to respond to the items using a 4-point Likert scale ranging from 1 (*strongly disagree*) to 4 (*strongly agree*). In general, the respondents scored high on two of the items on this portion of the survey. The sample's mean for each of these two questions exceeded 2.5 (the null value). Overall, academic leaders reported that they had the freedom to implement entrepreneurial strategies and that faculty would support those strategies (see Table 13). In addition, the academic leaders in this sample did not attribute the initiation of most entrepreneurial activity at their institutions to their superiors or board of trustees.

Table 13

Participants' Responses to Items Related to Their Ability to Initiate Entrepreneurial Activity

Item	Mean	Standard Deviation
I have the freedom to implement entrepreneurial strategies at my institution.	2.70	0.75
Most of the entrepreneurial activity at my institution is initiated by my superiors or Board of Trustees.	2.30	0.79
Faculty members at my institution support entrepreneurial activities.	2.78	0.69

Summary of Results

The composite IEOs of the academic leaders in this sample was high. Out of a possible score of 40, the mean composite score of all respondents in this sample was 30.85. The respondents in this sample scored highest on the IEO subscale of proactiveness. More than 90% of respondents either agreed or strongly agreed to the three items that measured proactiveness. Additionally, most respondents indicated that they had the freedom to implement entrepreneurial strategies at their institutions. However, all three null hypotheses were accepted. No significant relationships between IEO composite or subscale scores and student success rates were evident in this sample of higher education leaders. In addition, none of the results of the study indicated that IEO scores predicted student success rates. A discussion of the results of the study is included in chapter five.

V. DISCUSSION

Many higher education institutions face financial and enrollment challenges due to factors such as the growth of online learning, increased competition, and shifting student demographics (Cleverley-Thompson, 2016). The 28 colleges that comprise the Florida College System are not immune to these pressures. Postsecondary leaders have been encouraged to adopt entrepreneurial attitudes and strategies to address the pressures of the rapidly changing landscapes of higher education (AACC, 2013; Bowyer & Vitale, 2018; Cleverley-Thompson, 2016). However, even as academic leaders strive to respond to the challenges, their ultimate goal must be student success (AACC, 2013). The purpose of this study was to examine the relationships between the individual entrepreneurial orientations of academic leaders in the FCS and their school's student success rates.

Broadly defined, entrepreneurship is “the discovery, evaluation, and exploitation of opportunities” (Bosman & Fernhaber, 2018, p. 9). Entrepreneurship occurs within many different contexts, including institutions of higher education. Academic entrepreneurship as a subset of entrepreneurship centers around creating and seizing opportunities in an academic setting and may include corporate venturing, creating new innovations, and seeking strategic advantages (Bowyer & Vitale, 2018). Academic entrepreneurship involves individuals

throughout the institution engaged in any activity that involves risk-taking, innovation, and opportunity (Cleverly-Thompson, 2016). Individuals can initiate academic entrepreneurship throughout the institution, including the president, deans, faculty, and students (Cleverly-Thomson, 2016; June, 2014); however, academic leaders play a crucial role in the process by exerting influence on both internal and external stakeholders. Even in institutions with complex organizational structures such as shared governance, “the success of the organization in a constantly changing environment largely depends on [the] leader’s orientation, competency and [the] leader’s self-efficacy” (Ibrahim et al., 2016, p. 1184).

In the 1980s, researchers began studying entrepreneurship at an organizational level (Covin & Slevin, 1989). Entrepreneurial researchers defined entrepreneurial orientation (EO) as “a strategy-making process that provides organizations with a basis for entrepreneurial decision-making and behaviors” (DeGennaro et al., 2016, p. 2). Gupta and Dutta (2016) asserted that EO is “one of the most central and prominent concepts in all of management science” (p. 6). One key factor driving research in EO is its relationship to performance. A number of studies on the relationships between EO and performance demonstrated that an organization's EO is a predictor of both financial and non-financial performance; in addition, organizations with higher levels of EO have higher levels of organizational performance (Hussain et al., 2017; Kantur, 2016; Rauch et al., 2009).

At the beginning of the 21st century, studies emerged that examined EO at the individual level (Bolton, 2012; Bolton & Lane, 2012, Fellnhofner, 2019; Goktan & Gupta, 2015; Joardar & Wu, 2011). According to Obschonka and Stuetzer (2017), the essential agent of the entrepreneurial process is the individual entrepreneur. The authors contended that founders and top-level managers play a crucial role in determining any organization's strategic direction.

Gotkan and Gupta (2015) asserted that the values and mindsets of influential individuals within an organization profoundly influence the organization's strategic choices and the outcomes related to those choices. Therefore, researchers have sought not just to understand entrepreneurship at an organizational level, but also to understand the characteristics of successful entrepreneurs at the individual level.

Organizational leadership scholars have proposed the existence of an entrepreneurial mindset. Naumann (2017) defined entrepreneurial mindset as “adaptable thinking and decision-making in complex, uncertain, and dynamic environments” (p. 159). Individuals with entrepreneurial mindsets take calculated risks and are change-oriented (Putta, 2014). These individuals create and exploit opportunities and can increase an organization's competitiveness (Zupan et al., 2018).

The paucity of research on individual entrepreneurial orientation and its influence on academic outcomes served as the catalyst for this study. The current researcher selected an instrument normally used to assess the construct of individual entrepreneurial orientation in a business context; the lack of a similar validated instrument designed for academic administrators precipitated the adoption of this instrument. Bolton and Lane (2012) created a 10-item instrument to measure individual entrepreneurial orientation (IEO); this instrument is a univariate measure of individual entrepreneurial traits of risk-taking, innovation, and proactiveness (see Appendix A). This instrument is the most widely used survey instrument to measure the construct of IEO (Bolton, 2012; Fellnhofer, 2019; Fellnhofer, Puumalainen, & Sjögrén, 2016, 2017; Jelenc, Pisapia, & Ivusic, 2015; Koe, 2016; Qureshi, Mukhtar, & Saeed, 2017). Bolton's (2012) research revealed that individuals with a high IEO score had higher self-reported business success scores ($n = 340$; $p = .03$).

Overview of Methods

The current study was non-experimental, descriptive research using survey methods (Appendix B) to explore the relationships between IEO scores of academic leaders and students' success rates in the Florida College System (FCS). The independent variables in this study were the mean IEO composite and subscale scores on the IEO instrument (Bolton & Lane, 2012) of Florida College System's leaders (i.e., presidents, vice-presidents, academic deans, or equivalent title). The dependent variable was student success rates for Associate of Arts students in the FCS during the 2018-19 reporting year. The FCS defines student success rate as the percentage of First Time in College (FTIC) students in a fall cohort who graduate, are in good standing, or who have transferred to another institution after four years. Students must have completed at least 18 college credits to be included in the cohort (Florida Department of Education, n.d.a).

After approval by the university's Institutional Review Board, the researcher used a modified version of the survey instrument designed by Bolton and Lane (2012) to survey FCS presidents, vice-presidents, academic deans, or persons with an equivalent title. The original instrument was based on a 5-point Likert scale (1 = *strongly disagree*; 5 = *strongly agree*); the current researcher used a modified version of the instrument based on a 4-point Likert scale (1 = *strongly disagree*; 4 = *strongly agree*). The researcher obtained written permission to use and modify the survey instrument from the developers of the IEO instrument. The modified survey included ten items to assess IEO, three items to collect demographic information, and two items to collect information about the institution at which the leaders worked. The survey also included three questions designed to measure leaders' ability to initiate and implement entrepreneurial activities.

The researcher gathered all the publicly available email addresses for each academic leader's position at each of the 28 state colleges. The researcher used published organizational charts to determine academic leaders who were responsible for leadership in the Associate of Arts programs at each of the colleges. Two hundred and twenty-eight academic leaders were invited to respond to the online IEO survey; 73 leaders completed the survey (response rate = 32.46%) from 19 of the 28 state colleges (68%).

After the respondents' responses were transferred from the online survey to a spreadsheet, the dissertation committee's chair deleted the names of the individual colleges and assigned codes to each college so that respondents and their scores could not be individually identified by the researcher. The chair also coded each colleges' success rate from the accountability report to match the appropriate school in order to ensure confidentiality. Descriptive statistics were used to describe responses to the demographic items and the relationships between mean IEO items, IEO subscales, and IEO composite scores, and the dependent variables of each institution's success rates.

Summary of Results

Three research questions were explored in this study. The sample consisted of 73 academic leaders who responded to the researcher's survey. Six presidents/CEOs, 26 vice presidents/provosts, 31 academic deans, and 10 people who identified their academic title as "other" responded to the survey. A majority of respondents in this sample ($n = 51$; 68.9%) worked at an urban school; in contrast, only 22 (29.7%) reported serving at a rural school. One participant (1.4%) did not respond to this survey question. A minority of participants (43.8%) identified as female, and a majority of participants (54.7%) identified as male. One participant (1.4%) preferred not to identify his or her gender. Overall, the composite IEO scores of the

respondents and their institutions' student success rates were high. The results of the analyses to address the research questions are presented below.

Research Question 1. What are the relationships between the individual entrepreneurial orientation scores of FCS leaders and students' success rates?

To address the first research question, the Pearson product-moment correlation statistic (r) was used to correlate the IEO composite (overall) mean score of each of the education leaders and their school's student success rates. If one academic leader from an individual school responded to the survey, that leader's composite IEO score was correlated to his or her student success rate in the correlation analysis. If more than one leader responded to the survey, the composite mean scores of all respondents from that school were averaged and used in the correlation analysis. The mean composite IEO score for all colleges in the entire sample was then computed ($M = 30.88$) and correlated to the mean success rate scores ($M = .854$) for all the colleges in the entire sample using Pearson r to address the research question.

Analysis of the data revealed no statistically significant relationships between the sample's mean composite IEO score of school leaders ($M = 30.88$) and the sample's mean student success rates ($M = .854$); the null hypothesis was retained. However, the results approached significance ($p = .057$). The mean IEO composite scores of the entire sample of FCS' higher education leaders were moderately related to the entire sample's mean student success rate ($r = .37$) with a large degree of predictive effect ($\epsilon^2 = .14$; $d = .81$). A Pearson r of .55 or greater would be required for significance ($p = .05$) with a sample size of 19 colleges.

Research Question 2: What are the relationships between the individual entrepreneurial orientation scores of presidents, vice-presidents, and deans in the FCS and college students' success rates?

Pearson product-moment correlation statistics (r) were computed to determine the relationships between the leadership groups of Florida State Colleges and their student success rates to address the second research question. None of the mean IEO scores of any of the college leadership positions were significantly related to student success rates. Therefore, the null hypothesis was accepted.

Research Question 3: Which of the college leaders' individual entrepreneurial orientation scores (presidents, vice-presidents, or deans) is the most robust predictor of college students' success rates?

The simple linear regression test statistic was used to assess the predictive ability of IEO by leadership group on student success rates. None of the leadership types was significantly related to student success rates. Therefore, the null hypothesis was accepted.

Ancillary Results

The researcher conducted correlation analyses to further examine the relationships between variables. The academic leaders who responded to the survey scored high on all 10 items of the IEO instrument. The sample's mean for each of the ten IEO questions exceeded the null response value of 2.5 and ranged from a mean of 2.73 to 3.47. A one-tailed t test indicated a significant difference ($p \leq .001$) between the respondents' mean for nine of the ten items on the IEO survey and the composite scale mean for the entire sample ($M = 2.5$). The one-tailed t test comparison for the mean item score for item five, "In general, I prefer a strong emphasis in projects on unique, one-of-a-kind approaches rather than revisiting tried and true approaches

used before” and the scale mean revealed a significant difference ($p = .01$) from the scale (null) mean. The evidence revealed that academic leaders in this sample self-reported above average entrepreneurial orientations. However, no statistically significant positive relationship was found between IEO and student success rates in this sample of academic leaders.

The researcher included three additional questions in the survey to measure participants’ perceptions of entrepreneurial activities at their institution. Responses to this section of the survey were made by responding to a 4-point Likert scale ranging from 1 (strongly disagree) to 4 (strongly agree). In general, the respondents scored high on two of the items on this portion of the survey. The sample’s mean for each of these two questions exceeded 2.5 (null value). Overall, academic leaders reported that they had the freedom to implement entrepreneurial strategies ($M = 2.70$). Leaders also indicated that faculty would support those strategies ($M = 2.78$). In addition, the academic leaders in this sample did not attribute the initiation of most entrepreneurial activity at their institutions to their superiors or board of trustees ($M = 2.30$).

Discussion

Previous researchers established moderate, positive relationships between an organization's EO and financial and non-financial performance outcomes including employee satisfaction and customer satisfaction (Hussain et al., 2017); leaders’ views of their organization’s global success, profit earnings, and sales growth (Kantur, 2016); and return on investments (Rauch et al., 2009). Based on upper echelon theory, Gotkan and Gupta (2015) asserted that an organization's strategic choices and the outcomes related to those choices were heavily influenced by the values and mindsets of leaders within the organizations. The current researcher’s review of literature found no studies addressing IEOs of academic leaders and student success rates. This gap in the literature, coupled with recent emphases on hiring

entrepreneurial college and university administrators, encouraged the researcher to design a study to determine whether the individual entrepreneurial orientations of academic researchers had any relationship to college students' success.

The non-significant results found in the current study point to the need for more research to determine whether IEOs of academic leaders are significantly related to student success, which is the ultimate purpose and goal of all colleges and universities. If no relationships exist, then search committees may decide to re-think the characteristics they seek in academic leaders and choose to remain open to a diversity of leadership qualities, including entrepreneurship. The relationship between the IEO of academic leaders and student success rates needs further exploration.

Although all null hypotheses were accepted, this research study adds to the body of knowledge on the individual entrepreneurial orientations of academic leaders. In fact, results from this study indicate that academic leaders' high IEOs may be detrimental to student success. When the current researcher conducted multiple linear regression analyses to assess the ability of the 10 IEO questions (dimensions) to predict mean student success rates, a significant, negative relationship existed between survey item 11 (I like to take bold action by venturing into the unknown) and student success rates (*Standardized* $\beta = -.45$; $p = .02$). The association on student success rate was inverse and considered large ($d = 1.01$). This result indicated that for every full unit increase on the response to this survey item, a 4.47 unit of decrease in student success rate was predicted. This result suggests that high IEO traits may not be related to student success, although more research is needed. Yoon and Solomon (2017) demonstrated that a curvilinear (i.e., inverted U-shape) relationship existed between entrepreneurial orientation and organizations' performance in a sample of small- to medium-sized businesses in South Korea. In

this study, the firms with very low entrepreneurial orientations or very high entrepreneurial orientations were associated with lower organizational performance as measured by financial records. Yoon and Solomon (2017) suggested that variations in organizational EO/performance relationships may be due to contextual factors such as an employees' perceptions of their psychological safety. The authors asserted that leaders in organizations with high EOs take risks and deal well with uncertainty. However, the researchers hypothesized that the employees who reported to these leaders might not possess the mindsets and skills required to thrive in uncertain, continuously changing environments. This difference in the mindsets between leaders and followers can create unintended negative consequences for the organization (Yoon & Solomon, 2017). Following this line of reasoning, the non-significant results in the current study may be related to the differences between IEOs of academic leaders and the individuals who are primarily responsible for student success: the college faculty, staff, and students. Negative influences of IEO discrepancies could include employee stress, employee burnout, and fatigue caused by prolonged periods of change; these factors could negatively influence student success rates.

A possible explanation of the current study's results is that the academic leaders who were surveyed may be too far removed from the activities that most influence student success, teaching and learning, which are the responsibility and lifeblood of faculty and students. For the most part, the academic leaders who responded to this survey did not teach in the classroom or online; as a result, they might not have substantive contact with students. This distance between the academic leaders and the students may have been a mediating factor that influenced the non-significant results in the current study. Academic leaders are normally responsible for leading change, implementing policy and procedures, ensuring resources for key initiatives and

operations, and monitoring progress. Leaders can influence some aspects of student success, such as supporting the creation and implementation of innovative methods of teaching and providing the resources needed by faculty and students; however, leaders would not typically work with either faculty or students to implement new methods, curricula, delivery platforms, and resources.

Another mitigating factor in the current study may have come into play: although the academic leaders were entrepreneurial, their subordinates were not. Effective leadership in an HEI setting is a complex task. The nature of shared governance in HEI creates a culture in which change is often resisted, and top-down leadership is not always welcomed or effective (Savior, 2017). Clark (1998) argued that transformation in an HEI does not come from a few departments or divisions that practice innovation nor from top-down leadership. Instead, Clark (1998) argued that “transformation occurs when a number of individuals come together in university basic units and across a university over a number of years to change, by means of organized initiative, how the institution is structured and oriented” (p. 4). The fundamental nature of higher education creates a culture in which strong opinions abound among all the stakeholders (Savior, 2017). A difference between the IEO of the academic leaders and their subordinates may have influenced the results of this study.

The subscales of the IEO instrument include innovation, risk-taking, and proactiveness. Although these traits exist in high levels in this sample of academic leaders, the faculty responsible for teaching students may not hold or operationalize these traits. The non-significant relationships between IEOs of academic leaders and student success rates may also be related to the composition of instructors in higher education. Even if academic leaders’ entrepreneurial orientations are found to relate to full-time instructional personnel, approximately 67% of

community college instructors nationwide were part-time adjunct faculty in 2016 (Hurlburt & McGarrah, 2016). The nationwide percentage closely mirrors the percentage of adjunct instructors in the FCS; 71% of its college-level instructors in the fall of 2017 were part-time instructors (Florida Department of Education, 2017). Although an institution as a whole may adopt innovative ideas and policies, adjunct instructors are typically content area experts who may be tangentially related to the institution's overall mission and vision; as such, they may not implement changes or innovations from academic leaders or even be aware of new initiatives. This possibility is exacerbated when adjuncts are not effectively included in communications regarding new methods and procedures, faculty training sessions, and administrative oversight related to the new initiatives.

The relationships between the IEOs of academic leaders and organizational outcomes is complex. Rauch et al. (2009) conducted a meta-analysis of 51 studies of EO and found a moderate, positive relationship ($r = .242$) between an organization's EO and its performance. However, Yoon and Solomon (2017) suggested that contextual factors such as employees' mindsets and attitudes influenced the EO-performance relationship.

In exploring academic entrepreneurship, Clark (1998) stated that entrepreneurial attitudes must exist beyond high-level leaders. According to the author, in order for academic entrepreneurship to make a positive difference, personnel at all levels of the institution must accommodate and adopt entrepreneurial mindsets. In the current study, the survey item that asked whether academic leaders could initiate entrepreneurial activities, the "Other" category of academic leaders (i.e., leaders who were not the presidents, vice-presidents, and provosts) had the lowest mean composite IEO score (2.5). This category included academic leadership positions such as department chair, district director, dean of faculty and chief academic officer,

associate dean of academic affairs, and associate dean of faculty. The lower composite IEO mean scores of the “other” category of leaders may indicate a fundamental difference between the IEOs of high-level leaders and middle-level leaders in the academy. The question arises as to whether the differences between high- and low-level academic leaders exist due to a communication gap or an operational gap or both. Clearly, more research is needed. Individuals with entrepreneurial mindsets seek to discover and exploit opportunities (Bosman & Fernhaber, 2018). In a rapidly changing world, this mindset is highly useful and valued. However, for leaders to effectively influence an organization, the IEO mindset must be effectively communicated and adopted by multiple, broad levels of the institution.

Recommendations for Future Research

Although the null hypothesis of the first research question was accepted, analysis of the data revealed that the total sample’s mean IEO score of academic leaders’ and the overall FCS’ student success rate approached significance ($p < .057$). If more leaders of more colleges had responded to the survey, the results might have been significant. Future studies could explore the relationship between IEO and student success on a larger scale, perhaps in community colleges nationwide. However, measuring student success on a large scale could prove difficult due to different methods of measuring student success. The Florida Department of Education developed the accountability metric of student success rates in this study; the metric is a complex algorithm used to calculate the percentage of a cohort of FTIC students who (a) enrolled at the institution in the cohort's fall semester, and (b) either graduated, or were in good standing (grade point average of C or higher), or successfully transferred to a four-year college or university (c) within four years. Future researchers could examine percentages of graduation rates by cohort, which the National Center for Educational Statistics (NCES) calculates based on the Integrated

Postsecondary Education Data System (IPEDS) for all primary providers of postsecondary education, including community colleges. IPEDS calculates graduation rate percentages based on full-time, first-time degree- or certificate-seeking students who complete their programs within a percentage (100%, 150%, and 200%) of the time typically required for a full-time student to earn the academic credential (NCES, 2016). The use of percentages of graduation rates would allow researchers to examine the relationships of IEO and educational outcomes in a larger sample.

The exploration of the relationships between IEO and student success at the classroom level would be extremely interesting and informative. The classroom is typically the place where students have the most experience with innovative and creative ideas that can influence student learning and success. Future research could examine the relationships between the IEOs of faculty members and the student success outcomes of their institutions or of individual courses or faculty members. Determining the IEO scores of faculty members could lead to a number of studies related not only to student success, but also to faculty evaluations, student retention, curricular design and evaluation, critical thinking initiatives, program evaluation, and other vital areas in which faculty are involved. Such research might be qualitative or quantitative in nature. A quantitative study could examine the relationships between instructors' IEOs and student outcomes; for example, one might look at the influence of IEOs of faculty or students on differences or improvement between pre- and post-tests. A qualitative study could examine the ways that IEO is applied in the classroom; the faculty's traits of risk-taking, innovativeness, and proactiveness can be described to reveal ways these entrepreneurial traits are translated into educational practice.

Additional research is needed to explore the relationships between academic leaders with high IEOs who innovate often over both short and long periods of time. Rapid, continuous changes in organizational policy and practices may place additional stress on employees (Burke, 2018). The additional stresses of rapid and frequent changes in any of the primary operations of a college may lead to employee burnout or turnover. Additional stress over time may be a mediator in the EO/performance relationship and could negatively influence the organization.

An investigation of the relationships between academic leaders with high IEO scores and faculty and staff members with low IEO scores or vice-versa might produce interesting results and provide insights into better communication between leaders and the individuals responsible for operationalizing entrepreneurial initiatives. Yoon and Solomon (2017) suggested that a large difference in IEOs between leaders and employees may have negative consequences for an organization. Future researchers could measure the IEO of academic leaders, staff, and faculty at multiple institutions and examine the relationships between the groups and their influence on organizational performance and morale.

In the current study, the researcher looked at the relationships between the IEOs of academic leaders and student success at publicly funded higher education institutions in Florida. A future study could examine the relationships between IEOs of academic leaders and organizational outcomes at private colleges and universities. Future research could also compare the relationships between academic leaders of public, private non-profit, and private for-profit institutions of higher education and their performance outcomes.

Conclusions

The landscape of higher education is continuously changing in response to a volatile and uncertain world (Cleverley-Thompson, 2016). A number of leaders in higher education have

suggested adopting entrepreneurial attitudes and mindsets as a strategy to address the ever-evolving concerns facing higher education (AACC, 2013; Bowyer & Vitale, 2018; Cleverley-Thompson, 2016). On the surface, this strategy makes sense. After all, in its broadest conceptualization, entrepreneurship is merely discovering, creating, and exploiting opportunities (Bosman & Fernhaber, 2018). However, entrepreneurship is complicated and multi-faceted; in context, mediating factors influence the relationships between the IEOs of academic leaders and institutional outcomes. Additional research on this topic is warranted.

The current research study was one of the first to explore the relationships between IEO and student success outcomes. Although no statistically significant relationships were found in this sample, the relationship between the IEOs of academic leaders and student success rates in the Florida College System did approach significance. The study contributes to the body of knowledge related to IEO and organizational performance, especially in institutions of higher education, and fills a gap in the literature on entrepreneurship among academic leaders.

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APPENDICES

Appendix A

Bolton and Lane (2012) Survey Items (original)

Items and Subscales of the Individual Entrepreneurship Orientation Scale

EO Factor	Item
Risk	I like to take bold action by venturing into the unknown.
Risk	I am willing to invest a lot of time and/or money on something that might yield a high return.
Risk	I tend to act “boldly” in situations where risk is involved.
Innovation	I often like to try new and unusual activities that are not typical but not necessarily risky.
Innovation	In general, I prefer a strong emphasis in projects on unique, one-of-a-kind approaches rather than revisiting tried and true approaches used before.
Innovation	I prefer to try my own unique way when learning new things rather than doing it like everyone else does.
Innovation	I favor experimentation and original approaches to problem-solving rather than using methods others generally use for solving their problems.
Proactiveness	I usually act in anticipation of future problems, needs or changes.
Proactiveness	I tend to plan ahead on projects.
Proactiveness	I prefer to “step-up” and get things going on projects rather than sit and wait for someone else to do it.
Entrepreneurial Intent	I would like to work for myself
Entrepreneurial Intent	I would like to start my own venture

Note. Adopted from “Individual entrepreneurial orientation: Development of a measurement instrument,” by D.L. Bolton & M. D. Lane, 2012. *Education + Training*, 54(2/3) pp. 228-229. Copyright 2012 by Emerald Group Publishing Limited. Adapted with permission.

Appendix B

Researcher-modified Online IEO Survey

Informed Consent

SOUTHEASTERN UNIVERSITY

Title: A Study of Individual Entrepreneurial Orientations of Higher Education Leaders

Investigator(s):

Patty LeBlanc, Ph.D, Professor of Education, Southeastern University

Thomas Gollery, Ed.D., Professor of Education, Southeastern University

Mr. Michael McPherson, Doctoral Candidate, Southeastern University

Note: This study has been approved by the Institutional Review Board at Southeastern University. You must be 18 years or older to participate.

Purpose: The purpose of this study is to examine the individual entrepreneurial orientations of academic leaders in higher education.

What to Expect: This survey is administered online. Participation in this research involves the completion of one survey with two parts. The first part of the survey asks for demographic information. The second part of the survey asks you to indicate the response that best reflects your agreement or disagreement with 10 statements and one open-ended item related to entrepreneurial orientation. We ask that you answer all questions to ensure complete data collection. You will complete the survey once, and completion should take no more than 10 minutes to complete.

Risks: There are no risks associated with this project greater than those ordinarily encountered in daily life.

Benefits: There is no direct benefit to you for completing the survey. However, your answers will help add to the body of knowledge related to entrepreneurial orientations of academic leaders.

Compensation: You will receive no compensation for completing the survey.

Your Rights and Confidentiality: Your participation in this research is voluntary. There is no penalty for refusal to participate, and you are free to withdraw your consent and participation in this project at any time.

Confidentiality: The results of this survey are confidential. All results will be aggregated and reported as group findings; therefore, no results, written reports, or articles will identify you personally or professionally or your institution individually. Research records will be stored on a password-protected computer in a locked office, and only researchers and individuals responsible for research oversight will have access to the records. Data will be destroyed five years after the study has been completed.

Should you desire to discuss your participation in the study and/or request information about the results of the study, contact: Michael McPherson at [REDACTED]. If you have questions about your rights as a research volunteer, you may contact the Principle Investigator at [REDACTED] or the IRB Office at irb@seu.edu.

If you choose to participate, click on the “Yes” button below.

By clicking YES, you are indicating that you freely and voluntarily agree to participate in this study and that you are at least 18 years of age. Feel free to print a copy of this consent page for your records before you begin the study by clicking below.

* 1. By taking this survey, I certify that I am 18 years of age or older and that I voluntarily consent to participate. (Select one option)

Yes

No

Demographic Information

2. Please select the college at which you are employed. (Select one option.)

Broward College

College of Central Florida

Chipola College

Daytona State College

Eastern Florida State College

Florida Gateway College

Florida Keys Community College

Florida State College at Jacksonville

Florida SouthWestern State College

Gulf Coast State College

Hillsborough Community College

Indian River State College

Lake-Sumter State College

Miami Dade College

North Florida Community College
Northwest Florida College
Palm Beach State College
Pasco-Hernando State College
Pensacola State College
Polk State College
St. Johns River State College
St. Petersburg College
Santa Fe College
Seminole State College of Florida
South Florida State College
State College of Florida, Manatee-Sarasota
Tallahassee Community College
Valencia College
Prefer not to answer

3. Describe your college or university's location. (Select one option)

Rural
Urban

4. Please select your title. (Select one option.)

President or CEO
Vice President or Provost
Academic Dean
Other
Other (Please specify) _____

5. If you are an academic dean, in what department do you work?

6. Years of service in your current position. (Select one option.)

1 2 3 4 5 6 7 8 9 10 10+

7. Age

8. Gender (Select one option.)

Female

Male

Other

Prefer not to answer

9. What is the highest degree you have earned? (Select one option.)

Doctorate

Juris Doctorate

Masters

Baccalaureate

Other

Other (Please specify) _____

10. Estimated FTE for the current reporting year of the college at which you are employed?

Individual Entrepreneurship Orientation Survey*

Instructions: Please indicate the response that best reflects your agreement or disagreement with each of the following statements. Please do not skip any item, as each item is important.

*Survey adapted from Bolton and Lane (2012) Individual Entrepreneurial Survey with author's permission.

11. I like to take bold action by venturing into the unknown. (Select one option.)

Strongly Disagree Disagree Agree Strongly Agree

12. I am willing to invest a lot of time and/or money on something that might yield a high return. (Select one option.)

Strongly Disagree Disagree Agree Strongly Agree

13. I tend to act "boldly" in situations where risk is involved. (Select one option.)

Strongly Disagree Disagree Agree Strongly Agree

14. I often like to try new and unusual activities that are not typical but not necessarily risky. (Select one option.)

Strongly Disagree Disagree Agree Strongly Agree

15. In general, I prefer a strong emphasis in projects on unique, one-of-a-kind approaches rather than revisiting tried and true approaches used before. (Select one option.)

Strongly Disagree Disagree Agree Strongly Agree

16. I prefer to try my own unique way when learning new things rather than doing it like everyone else does. (Select one option.)

Strongly Disagree Disagree Agree Strongly Agree

17. I favor experimentation and original approaches to problem-solving rather than using methods others generally use for solving their problems. (Select one option.)

Strongly Disagree Disagree Agree Strongly Agree

18. I usually act in anticipation of future problems, needs, or changes. (Select one option)

Strongly Disagree Disagree Agree Strongly Agree

19. I tend to plan ahead on projects. (Select one option.)

Strongly Disagree Disagree Agree Strongly Agree

20. I prefer to “step-up” and get things going on projects rather than sit and wait for someone else to do it. (Select one option.)

Strongly Disagree Disagree Agree Strongly Agree

Adapted from: Bolton, D.L., & Lane, M. D. (2012). Individual Entrepreneurial Orientation: Development of a measurement instrument. *Education + Training*, Vol. 54 No. 2/3, pp. 219-233. Used with permission.

Entrepreneurial Implementation

22. I have the freedom to implement entrepreneurial strategies at my institution. (Select one option.)

Strongly Disagree Disagree Agree Strongly Agree

23. Most of the entrepreneurial activity at my institution is initiated by my superiors or Board of Trustees. (Select one option.)

Strongly Disagree Disagree Agree Strongly Agree

24. Faculty members at my institution support entrepreneurial activities. (Select one option.)

Strongly Disagree Disagree Agree Strongly Agree

Please add any additional comments that you would like to make the in space provided below:

Thank you for your participation. If you have additional questions about this survey, please email the researcher at email.

Appendix C

Written Permission to Modify IEO Instrument

From: Bolton, Dawn
Date: Fri, Sep 28, 2018 at 9:04 AM
Subject: RE: IEO
To: McPherson, Michael

Good Morning, Michael,

You are not bothering me, and I apologize for being late in replying (I have been away from my computer since Wednesday afternoon). Thank you for asking me, and you have my permission to alter the IEO 5-point scale to a 4-point scale. I appreciate your documenting and citing that your scale is a modified version.

I wish you well in your research and look forward to reading about your results!

Take care,

Dawn Bolton

Appendix D

Email Sent to Florida Academic Leaders

Dear XXX,

My name is Michael McPherson, and I currently serve as Dean of Arts and Hospitality at Florida Keys Community College. I am also a doctoral candidate in organizational leadership at Southeastern University. My dissertation research is focused on the Individual Entrepreneurial Orientations of academic leaders in the Florida College System. I am writing to ask you to complete a brief electronic survey that should take approximately 10-15 minutes. This survey has been approved by the Institutional Review Board at Southeastern for dissemination and is completely voluntary. Thank you for your consideration of this request. Your participation is greatly appreciated. If you have any questions or concerns, please feel free to contact me or the Principal Investigator.

To take the survey, click on the link:

[Click Here](#)

Michael McPherson
Doctoral Candidate
Southeastern University

Patty LeBlanc, Ph.D.
Professor of Education
Southeastern University

Note: If you do not wish to receive further correspondence related to this research study, reply to this email and type 'unsubscribe' in the subject line. Your email will be promptly removed from the mail list by the researcher.

We thank you for your time and participation.

Sincerely,
Michael McPherson
Southeastern University