ENTREPRENEURSHIP-EDUCATED BLACK ENTREPRENEURS AND THEIR IMPACTS PROVIDED TO BLACK COMMUNITIES

A Dissertation

Submitted to the Faculty of

the Business School of Worchester Polytechnic Institute

In Partial Fulfillment of the Requirements for the Degree of

Doctor of Philosophy

by

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April 2023

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ACKNOWLEDGEMENTS

I want to thank Rosanna Garcia, Ph.D., my Committee Chair, for her insight, guidance, patience, and time. I appreciate her focusing me in directions to aid in my achieving the most benefit possible through this educational process. I also want to thank my committee members, Frank Hoy, Ph.D. and Doan Winkle, Ph.D., for their advice and aid along this journey. Additionally, I'd like to thank Dean Reverend Dr. Debora Jackson for her warm welcome and positive influence, and also the nurturing WPI faculty & staff.

I want to thank my friends, fraternity, & family. Thank you to my friends for encouraging me from the application process through dissertation completion. While too numerous to name entirely, I'd want to thank Bert, Camilla, Camille, Cecil, DaMia, Danielle, Dave, Delia, Ed, Gina, Jose, Michelle, Myrla, Nam, Orane, Paul, Paul, Ron, Skyller, Tim and especially Gideon Leaks (RIP) without whom this journey would not have been possible. Thanks to my WPI cohort Basma, Luis & Roger, my DU friends & supporters, especially in Cohort 1, and the numerous entrepreneurship academic scholars and friends who assisted with data collection. Additionally, thanks to Pat, the Black Scholar, for listening, offering expert opinions, and continued support.

Thanks to all my Brothers of Alpha Phi Alpha Fraternity, Inc., especially Brothers of Theta Zeta, Dartmouth College and Alpha Gamma Lambda, Harlem, NY. And, special thanks to Brother Ed O'Garro. Finally, thank you to my entire extended family and my educational inspiration, my sister, Debbie. I especially want to thank the Loves of my Life, my wife, Michelle, and children, Xavier, Michaela, and Ari, for their continued support, motivation, tolerance of my time apart, and unconditional love.

ABSTRACT

Entrepreneurship has emerged as an essential topic in education. Entrepreneurship education has become a highly researched topic, yet the results of that education have not been fully explored. Much of the research focuses on undergraduate students, but the intrinsic value of the learning can ideally only be ascertained post-learning and academic careers.

Few studies look explicitly at Black students, nor Black graduates and Black communities, yet entrepreneurship is touted as an integral component of economic development for Black people and Black communities. There is an insufficiency of research codifying entrepreneurial impact in Black communities in general and a scarcity of literature that specifically reviews Black alums who studied entrepreneurship or their entrepreneurial impact on Black communities. This research will assist in addressing this gap by exploring the entrepreneurial impact Black entrepreneurship-educated entrepreneurs provide Black communities in comparison to the entrepreneurial impact provided by Black entrepreneurs without a formal entrepreneurship or business education, who will be referred to as natural entrepreneurs.

Education provides individuals with enhanced knowledge and skill. Human capital theory informs that people with greater skill levels, knowledge, and other competencies can achieve higher performance outcomes than those without the same. Based on the tenets of human capital theory, individuals with education specifically focused on entrepreneurship should realize superior entrepreneurial success than those without similar subject matter knowledge if they choose to pursue new venture creation.

Entrepreneurial orientation (EO) is a firm-level construct associated with entrepreneurial action and high company performance. Individual entrepreneurial orientation (IEO) is a person-

level construct appropriate for measuring and assessing participants' performance. This research examined individuals with entrepreneurship education and those without, and IEO functioned as a covariate to explore the performance of individuals across each group.

Business performance and social impact are examined, as measured through gross profits, employee and entrepreneur wages, employment, employment length and mentorship. The analysis illuminates the efficacy of entrepreneurship education for Black people. The analysis informs that there are some areas that entrepreneurship education provides benefits; specifically, it enhances community social impact. However, currently, it is not a transcendent factor in creating entrepreneurs with superior performance.

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CHAPTER I: INTRODUCTION

The American Dream is a concept that individuals are free to make choices about how they live their lives, and no matter where they start, through education, hard work, and dedication, anyone can have economically better lives for themselves and their families (Choi, 2015; Kuratko, 2003). However, that dream is not realized equally among American citizens. In 2021, Black Americans accounted for 13.4 percent of the United States population, but 19.5 percent of Blacks lived in poverty. In contrast, non-Hispanic White Americans accounted for 59.2 percent of the population, with only 8.1 percent living in poverty (U.S. Census Bureau, 2021). Furthermore, in 2021, Blacks had the lowest real median income of all races, $48,297, which was 32 percent less than the average for all races, $70,784, and 38 percent less than non-Hispanic White Americans at $77,999 (U.S. Census Bureau, 2021). Additionally, since 1975, the Black unemployment rate has consistently been roughly doubled that of the White unemployment rate (U.S. Bureau of Labor Statistics, 2020). This long-term unemployment difference fosters the ongoing poverty levels and is one of the biggest contributors to the significant disparity in household income and wealth between Black and White Americans.

Black entrepreneurs can help mitigate the wealth gap between Black and White people (Bradford, 2014; Singh & Crump, 2007), eliminating more Blacks from unemployment, living in poverty and helping decrease other societal ills such as increased crime and incarceration (Mehmood et al., 2019). Fostering economic growth in a community starts with developing

entrepreneurs (Lyons et al., 2012), and in Black communities, the need for increased entrepreneurial activity is evident (Singh & Gibbs, 2013). After the civil war, black communities began to form and grow, and black entrepreneurs became more prevalent. Yet, while entrepreneurship has been viewed as a pathway to help Black Americans gain more economic parity (Moore, 1983), it has not achieved that goal in over a century and a half since the civil war.

Since entrepreneurship alone has proven not to be the complete solution to equalizing the economic status of Blacks with White Americans, entrepreneurship should be paired with another factor to aid in reducing the economic disparity. Higher Education, like entrepreneurship, is touted as the means to promote Blacks into higher economic strata. Equipping entrepreneurs with additional educational knowledge should assist in creating more talented entrepreneurs. Entrepreneurship education, in particular, leads to improved entrepreneurial performance (Charney & Libecap, 2000; Moutray, 2007). Perhaps providing entrepreneurship education to Black, would-be entrepreneurs will produce more skilled entrepreneurs who can create greater economic prosperity within Black-American communities.

Entrepreneurship education has emerged as an essential topic in education and has become a highly researched topic, yet the results of that education have not been fully explored. Much of the research focuses on undergraduate students (Urbano et al., 2008), but the intrinsic value of the learning can ideally only be ascertained post-learning and academic careers. Few studies look explicitly at Black graduates and Black communities, yet, entrepreneurship is an integral component of economic development for Black people and Black communities (Bates, 2006).

Over the past half-century, entrepreneurship education has grown to become a mainstream topic in education. In 1967, only six schools offered entrepreneurship courses (Solomon & Fernald, 1991), but by 2008 over 5,000 entrepreneurship courses were being taught at two and

four-year colleges throughout the U.S. (Canziani & Welsh, 2019). Much of the research assessing the impact of entrepreneurship education examines college students (Urbano et al., 2008); however, few studies actually track students post their collegiate entrepreneurship education to ascertain if the education was the antecedent to the creation of entrepreneurial ventures (Pittaway & Cope, 2007).

As research into the results of entrepreneurship education has increased, there is a dearth of research specifically examining the outcomes of Black students that study entrepreneurship. Entrepreneurship is positioned as a means for economic improvement for Black people and Black communities (Bradford, 2014); however, research is presently insufficient to codify entrepreneurial impact in Black communities. Furthermore, there is a scarcity of literature that reviews Black entrepreneurship-educated students or their entrepreneurial impact on Black communities (Singh & Crump, 2007). This research aids in filling that gap by examining the entrepreneurial impact Black entrepreneurs who graduated with an entrepreneurship degree provide Black communities. Specifically, Black entrepreneurship-educated entrepreneurs will be contrasted with entrepreneurs without a formal entrepreneurship or business education. These individuals will be referred to as natural entrepreneurs. In this research, natural entrepreneurs are people who start a business without any formal college entrepreneurship or business education background. They may have a different collegiate educational experience, such as being a math or English major, or they may not have a college education. The purpose of this study is to examine if Black entrepreneurs who have earned a college degree in entrepreneurship education perform at superior levels and provide more impact to Black communities than Black natural entrepreneurs.

If Blacks with entrepreneurship education can provide a more significant business or social impact to Black communities, then initiatives to create Black entrepreneurship-educated

entrepreneurs should be undertaken by colleges within and surrounded by Black communities, as well as schools that have a substantial Black population. When people think about the education of Black people, many first think about Historically Black Colleges and Universities (HBCUs). In 2022, approximately one-third of the still existing HBCUs had undergraduate degree-granting majors or minors in entrepreneurship. Additional HBCUs should invest in providing entrepreneurship degree programs to facilitate the creation of more significant numbers of Black entrepreneurs. The axiom many Black parents use of telling their children to 'go to college to get a good job' should perhaps change to instruct their kids to 'go to college to learn to create their own jobs.'

This dissertation is comprised of five chapters. Chapter two begins with a review of the macro topic, entrepreneurship, and then discusses the core foundational topic of entrepreneurship education. It provides a thorough history of entrepreneurship education, detailing its literature progressions starting from the initial question of if entrepreneurship could be taught. It introduces constructs relevant to this research, specifically entrepreneurial orientation (EO) and individual entrepreneurial orientation (IEO). It continues by underscoring the stream of entrepreneurship education literature dedicated to Black Americans. As the underlying concept of this research is entrepreneurship education, the macro topic of education in the United States is reviewed. It continues by delving into entrepreneurship as it relates to Black Americans. Next, an overview of the state of Black-American communities is shared, and finally, the benefits that Black Entrepreneurs provide to Black communities are explored. This information provides the basis for the research questions and the hypotheses and will be presented with a theoretical framework supporting the rationale for this research.

Three seminal theories are discussed to explain the underpinnings of this research. The first theory is the entrepreneurship theory, which economist Joseph Schumpeter created. Additionally, the human capital theory, as well as the theory of entrepreneurial orientation, are discussed. The entrepreneurship and human capital theories are explored as foundational concepts of this research. The theory of entrepreneurial orientation and individual entrepreneurial orientation are introduced as essential concepts in the performance of entrepreneurial firms.

Chapter two will conclude with hypothesis development, where the research questions will be posed. The model overview will be presented and illustrate how all dependent, covariate and independent variables interact. The specific hypotheses associated with each research question will be detailed.

Chapter three details the methodology that will be used in this research. It will explain who the two target sample groups are, the procedures for data collection, and the methodological techniques for analysis, MANCOVA. This is a quantitative study analyzing the entrepreneurial results of Black students who studied entrepreneurship as undergraduates and graduated with a degree in entrepreneurship. This population will be contrasted with natural entrepreneurs to measure both groups' impact on black communities. Natural entrepreneurs are how this study refers to entrepreneurs that did not study entrepreneurship or business collegiately. As cited by Solomon (2007), Brockhaus states that very few researchers "have compared a group that is receiving the entrepreneurship education to another similarly matched group that is not receiving the education." A survey instrument is used to collect the data. A multivariate analysis of covariance (MANCOVA) was performed using IBM SPSS Statistics 26 to determine if there are statistically significant differences between the adjusted population means of the two independent groups. Demographic data variables will be reviewed.

Chapter four will discuss the details of the analysis process, the data evaluation and the results highlights. Additional incite will be provided by the review of demographic data. The results will inform how Black entrepreneurs with an undergraduate degree in entrepreneurship education perform compared to Black natural entrepreneurs in business performance and social impact metrics.

Finally, chapter five concludes this dissertation by summarizing the analysis results. The theoretical and practical implications of the research will then be presented. The limitations associated with this investigation will be declared. Recommendations based on the analysis results will be suggested, and direction for future research will be offered. Ultimately, the efficacy of entrepreneurship education for Blacks and Black communities will be assessed.

CHAPTER II: LITERATURE REVIEW

This literature review chapter begins by first discussing the overarching topic of entrepreneurship. It then introduces the core foundational topic of entrepreneurship education. Entrepreneurship education is a newer topic, starting in 1947 (Brush et al. 2003). The history of the growth and progression of the literature is shared. The critical concepts of entrepreneurial intention, entrepreneurial orientation (EO) and individual entrepreneurial orientation (IEO) will be introduced. The chapter progresses by discussing entrepreneurship education and the literature focused on Black Americans, and then it examines the literature on Black Americans and entrepreneurship. Then Black comminutes and the benefits entrepreneurs can provide Black communities are discussed. Additionally, the theoretical framework will be presented, highlighting the human capital theory. To conclude, the chapter will present the research questions and the hypotheses.

Entrepreneurship

Entrepreneurship is a societal-building concept that existed in pre-historic times. Archaeologists worldwide have uncovered evidence of venture creation and commerce that antedates written records (Hoy & Verser, 1994). The term entrepreneur is derived from the French word ‘entreprende’, which means to undertake. It was first seen in literature in 1755 by Richard Cantillon, an Irish economist, who discussed an entrepreneur as someone who advanced money to employ others to manufacture goods to receive returns that covered costs and provided profitable returns (Cantillon, 1755; Hagan, 2004).

Entrepreneurship is a fundamental pillar of job creation, innovation, and economic growth (Doe, 2017). Entrepreneurship and the creation of new start-up ventures increase employment, foster new technology advancements, and provide new knowledge and opportunities (Gonul et al., 2018). Entrepreneurship is also the foundation for economic development and a pathway to alleviating poverty (Mehmood et al., 2019). Increasing the number of entrepreneurial businesses should boost economic growth and, ultimately, wealth creation. (Luke et al., 2007).

Unlike most other academic concepts, there is no definitive, universally agreed-upon definition of entrepreneurship or entrepreneur in academic literature. Gartner (1988), in his review, listed twenty-two different definitions from multiple articles. Kao and Stevenson (1984) present a comprehensive definition stating, "*Entrepreneurship is the attempt to create value through recognition of business opportunity, the management of risk-taking appropriate to the communication, and through the communication and management skills to mobilize human, financial and material resources necessary to bring a project to fruition*." More recently, Schermerhorn & Bachrach (2017) offer a streamlined definition that entrepreneurship is "*dynamic risk-taking creative, growth-oriented behavior*." Not having a uniform definition can cause complexities in reviewing the literature to ensure the same phenomena are being explored. It also presents a challenge in developing a comprehensive conceptual and theoretical framework (Oyefusi, 2009). This research will use the commonly referenced definition from Shane and Venkataraman (2000), which states that entrepreneurship is identifying, exploring, and maximizing a business opportunity by an individual or group of people.

Entrepreneurial activity and new venture creation are critically important for any nation's economic growth. Entrepreneurship increases the employment rate by generating new jobs, providing income and consequently raising the overall standard of living. The Global

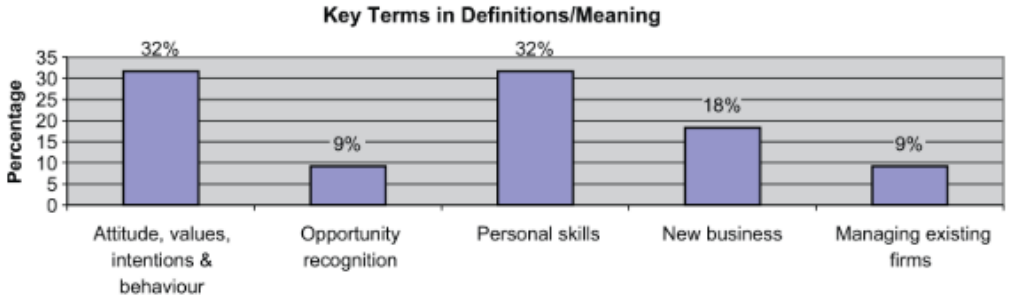
Entrepreneurship Monitor (G.E.M.) 2012 report states that worldwide, 63 million young entrepreneurs starting in 2011 each expect to hire at least five employees (Kelley et al., 2012). That trend should hopefully continue not only globally but specifically in the United States. Skills of how to see opportunity and knowledge of how to create a business can be taught in colleges and universities (Doe, 2017) and ideally should be learned before an entrepreneur attempts to create an entrepreneurial venture. Anecdotally, some believe that people can start businesses without any prior knowledge and become instantly successful, but only about half of the entrepreneurial companies survive past five years, while only about thirty percent continue past ten years (SBA FAQ-Small-Business, 2018). In this research, entrepreneurs who start ventures without any formal entrepreneurial or business education are referred to as natural entrepreneurs. Natural entrepreneurs can be either people that didn't attend college or individuals that attended college but did not study business or entrepreneurship. The impact of Black natural entrepreneurs will be contrasted to that of the impact of Black entrepreneurship-educated entrepreneurs on Black communities. Entrepreneurship education should assist in creating entrepreneurs that attain more successful and impactful ventures and possibly be the reason for lower venture failures.

Entrepreneurship Education

There is no one agreed-upon definition of entrepreneurship education. As part of the process of understanding the alignment of scholars on the main components of entrepreneurship education, Mwasalwiba (2010) reviewed 20 articles to identify the overarching tenets of various entrepreneurship education definitions. He discovered that thirty-two percent of the articles presented entrepreneurship education as an educational process designed to influence individuals' attitudes, values, intentions, and behaviors towards an entrepreneurial career or enhance their

appreciation of its impact on the community. Thirty-two percent spoke about acquiring personal entrepreneurial skills, and the remaining thirty-six percent addressed opportunity recognition (9%), new business creation (18%), and managing existing firms (9%) (Figure 01).

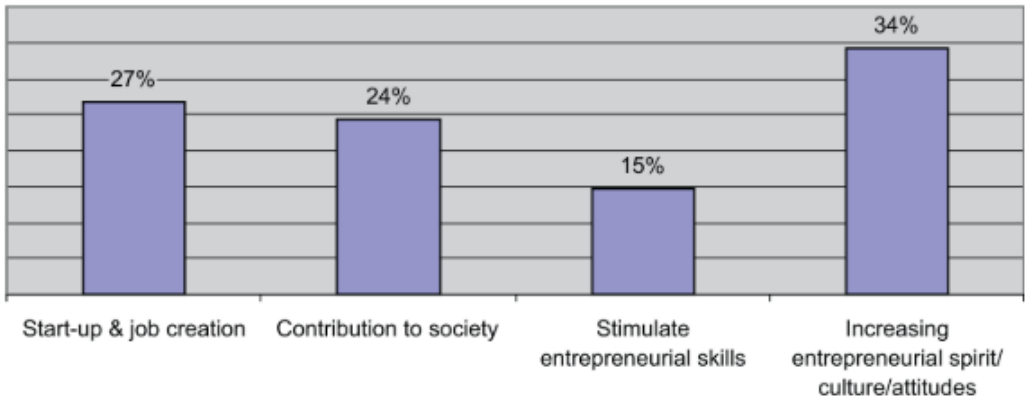
Figure 01 Key Terms in Entrepreneurship Education Definitions



Source: Mwasalwiba (2010)

Additionally, he recognized that there were also general outcome objectives for entrepreneurship education. Thirty-four percent of the scholars contended that entrepreneurship education was intended to create or enhance entrepreneurial spirit, attitudes, and culture amongst individuals and the greater community. Twenty-seven percent associated it with new ventures and job creation, while twenty-four percent related it with contributions to the community by aiding local entrepreneurs to establish and grow. The final fifteen percent associate it with teaching entrepreneurial skills to individuals (Figure 02). This research examines new venture creation, contributions to local communities and learning and executing entrepreneurial skills, which directly correlates to 66% of the objectives Mwasalwiba identified. Individual Entrepreneurial Orientation (IEO), defined later, is an indicator of entrepreneurial attitude and spirit and functions as a covariate to ascertain if performance differences exist between individual Black entrepreneurs with entrepreneurship education and those without.

Figure 02 General Objectives of Entrepreneurship Education



Source: Mwasalwiba (2010)

While there is no definitive definition for entrepreneurship education, this research will use the one provided by Ojasalo (2004). *Entrepreneurship education is the range of activities whose goal is developing skills, talents, knowledge, values, and perception that enables an individual to recognize opportunities and create solutions to address broad assortments of situations and problems* (Ojasalo, 2004). Entrepreneurship education is different from entrepreneurship training in that entrepreneurship training is a methodical endeavor focused on transmitting knowledge and developing skills tasked with achieving enhanced performance in specific areas or activities, for example, marketing or financing (Ojasalo, 2004 citing; Garavan et al., 1995). This research is based on the expectation that entrepreneurship education will increase the number and quality of business ventures created by graduates who study entrepreneurship (Galloway & Brown, 2002). Also, entrepreneurship education can positively influence students to seek entrepreneurship as a viable, respectable career path (Kolvereid & Moen, 1997). In addition to the students, society benefits from education that provides individuals with entrepreneurial knowledge and skills they can utilize throughout their lives (Raposo & Paço, 2011). As noted by Mwasalwiba (2010), many

scholars feel that entrepreneurship education should deliver an impact on the community of the entrepreneur. This research shall review that community impact.

In 1999, even with an understanding of the obstacles they would encounter to inhibit their success, sixty percent of 18 to 29-year-olds in the U.S. desired to own their own business (Miller et al., 2009). In 2001, about two-thirds of college students stated that they had intentions to own their own business at some point during their working careers (Shinnar et al., 2009). As the desire to own one's own business became more prevalent, a demand was created for colleges to provide entrepreneurship education. Instead of just one course or one section of a class, colleges and universities began trying to fully address the educational needs of the rising number of individuals seeking to become entrepreneurs (Miller et al., 2009). In contrast to studying the general topic of business, students began gaining the ability to learn about entrepreneurship as a major at many institutions.

While business education began in 1881 when the University of Pennsylvania Wharton School opened (Katz, 2008), it wasn't until about a decade later that entrepreneurship education began its start as a recognized academic discipline. Although the first small business management course in the U.S. was taught at the University of Michigan in 1927 (Samuel Zell and Robert H. Lurie Institute for Entrepreneurial Studies, 2020), many entrepreneurship scholars reference the birth of entrepreneurship education as the first entrepreneurship course being taught at Harvard in 1947 (Brush et al. 2003; Canziani & Welsh, 2019; Katz, 2003, Vesper & Gartner, 1997). So, while business education began in the late 1800s, it wasn't until the mid-1900s that the progenitor of all business, entrepreneurship, began to be studied. That initial entrepreneurship course in 1947 at Harvard was the seed that grew into the entrepreneurship education discipline.

Charting the growth of entrepreneurship education, in 1967, there were six schools offering entrepreneurship courses (Solomon & Fernald, 1991). In 1968 Babson College offered the first undergraduate concentration in entrepreneurship (Katz, 2003), and in 1971, the University of Southern California started the first Master of Business Administration (MBA) concentration in entrepreneurship (Kuratko, 2005). In the early 1980s, there were over 300 schools providing courses in entrepreneurship and small business, and by the 1990s, there were over 1050 schools (Solomon et al., 1994). By 2000 practically all of the American Assembly of Collegiate Schools of Business (AACSB) accredited MBA programs and nationally ranked schools were teaching entrepreneurship courses (Katz, 2003). By 2003 more than 1,600 colleges and universities were teaching over 2200 entrepreneurship courses (Katz, 2003). By 2008 over 5,000 entrepreneurship courses were being taught at two and four-year colleges throughout the U.S. (Canziani & Welsh, 2019). Besides stand-alone classes, colleges were creating entrepreneurship minors, majors, departments, and centers, and schools began striving to meet the educational needs of those intending to become entrepreneurs (Galloway & Brown, 2002; Miller et al., 2009). With the growth of entrepreneurship education began the desire to study and learn about and institute best practices through entrepreneurial academia.

In addition to courses, concentrations, and degrees, entrepreneurial education continued to grow into legitimacy through various academic occurrences. In 1946, the first research center with entrepreneurship as its primary focus, the Research Center for Entrepreneurial History, began at Harvard by noted Management academic Joseph A. Schumpeter (Katz, 2003). In 1963 the first entrepreneurship-focused refereed scholarly journal, the Journal of Small Business Management (JSBM), published its first issue. Also, in 1963, Georgia State University created the first endowed chair position, the Bernard B. and Eugenia A. Ramsey Chair of Private Enterprise (Katz, 2003).

In 1971, the first major article on minority entrepreneurship, "Black is beautiful, is it bountiful," was published in the Harvard Business Review (Timmons, 1971). In 1996, the first International Award for Entrepreneurship and Small Business Management was presented to David Birch (Aronsson, 2004), and in 2009 the award name changed to the Global Award for Entrepreneurship Research. It was created to annually present to the scholar who produced scientific work of exceptional quality and significance, making an important contribution to theory development regarding entrepreneurship and small business development, the role and significance of new firm formation, and the role of SMEs in economic development.

Additionally, in 1955 the National Council for Small Business Management Development (NCSBMD) was created. NCSBMD became the International Council for Small Business (ICSB) in 1978, and its first U.S. affiliate was founded in 1981. This affiliate was soon after named the United States Association for Small Business and Entrepreneurship (USASBE). USASBE has transformed into the preeminent independent academic organization devoted to advancing entrepreneurship education comprised of the community of entrepreneurship educators (USASBE, n.d.). In 1975 the Students in Free Enterprise (SIFE) started, which in 2012 changed its name to Enactus. SIFE/Enactus is a program that assists university students in creating entrepreneurial, innovative projects and businesses that empower social progress and improve the world (Enactus, n.d.). Soon after, in 1984, the Collegiate Entrepreneurs of Illinois Conference was held, which became the Collegiate Entrepreneurs Organization (CEO) in 1997 (Collegiate Entrepreneurs Organization, n.d.). CEO is a premier college-level entrepreneurship organization whose mission is devoted to informing, supporting, and inspiring college students to be entrepreneurial and to seek opportunities through business creation (Collegiate Entrepreneurs Organization, n.d.). In 1997 the Global Consortium of Entrepreneurship Centers (GCEC), originally named the National

Consortium of Entrepreneurship Centers, was founded to foster ongoing collaboration, communication, and excellence amongst existing and newly emerging academic and business entrepreneurship centers (Global Consortium of Entrepreneurship Centers, n.d.). The creation of entrepreneurial-focused journals, chairs, centers, and academic and student-centric organizations devoted to entrepreneurship and entrepreneurial articles appearing in mainstream academic journals, assisted in verifying the legitimacy of entrepreneurship as a rising, necessary academic discipline.

Entrepreneurial Intention

In entrepreneurship education literature, one initial debate was 'Can entrepreneurship be taught?' In an interview, David Birch, one of the first recognized entrepreneurship researchers, stated, "*If you want to teach people to be entrepreneurs, you can't.*" (Aronsson, 2004) Other academic scholars agreed that entrepreneurship could not be taught and felt that entrepreneurs were born and could not be developed through education. That belief impacted how entrepreneurship education evolved as initial pedagogy focused on teaching skills to those with an entrepreneurship predisposition. In opposition, famed management scholar Peter Drucker stated, "*The entrepreneurial mystique? It's not magic, it's not mysterious, and it has nothing to do with the genes. It's a discipline. And, like any discipline, it can be learned*" (Drucker, 1985). Many other scholars agreed that entrepreneurship could be taught (Kolvereid & Moen, 1997; Gorman et al., 1997; Kuratko, 2003; Doe, 2017). Ultimately scholars, for the most part, agreed that entrepreneurship could be taught, and once that was acknowledged, pedagogy shifted to educating the entrepreneurially uninformed and enticing them to consider entrepreneurship as a career. Mwasalwiba (2010) referenced this dichotomy of thought in his review of entrepreneurship

literature. He noted that one-third of the articles reviewed looked at entrepreneurship education as the acquisition of a person's entrepreneurial skills. One-third was influencing behaviors, attitudes, and intentions toward entrepreneurial behavior, and the last third was a mix of opportunity recognition, business formation, and managing existing small firms.

As scholars moved past the debate of whether entrepreneurship is teachable, a prevailing theme in the literature is the concept that entrepreneurial education should foster entrepreneurial intentions (EI) within students (Krueger et al., 2000). Intentions accurately forecast planned behavior (Bagozzi, 2006); as a result, entrepreneurial intentions have the potential to be the most significant predictor of entrepreneurial actions. (Krueger et al., 2000). If students possess entrepreneurial intentions, it has been viewed as being an indication of future entrepreneurial activity. The entrepreneurial intention would become entrepreneurial action which would lead to the creation of a new venture. Intention signifies the level of commitment toward a specific future behavior (Ajzen, 1991) and is the foremost predictor of planned behaviors (Krueger, 1993; Krueger et al., 2000). Three different models explain intentions and their basis for entrepreneurial action, the theory of Planned Behavior (Ajzen, 1985), the Entrepreneurial Event Model (Shapiro, 1988), and the Model of Intentionality (Bird, 1988).

Entrepreneurial intention derives its basis from the Theory of Planned Behavior (TPB) (Ajzen, 1985), which states that the intention to perform an action is the precursor to that action being attempted. The TPB is comprised of three components, behavioral beliefs, normative beliefs, and perceived control. Behavioral beliefs are thoughts that trigger action based on the likelihood that performing the action will lead to a favorable outcome. Normative beliefs, which influence a person's subjective norms, are the thoughts of social pressure to perform a behavior. Finally, perceived control is the thought of the feasibility of success doing the proposed behavior.

TPB is a foundational concept within entrepreneurship education (Miller et al., 2009; Zhang et al., 2014) that is based on the theory of reasoned action (TRA) (Ajzen & Fishbein, 1980). The TRA had two components, behavioral and normative beliefs, but was transformed into the TPB with the additional consideration of the possibility of failure and the understanding that control of situations is limited. For that reason, Ajzen added the factor of perceived behavior control to the TRA, which enhanced it and created the theory of planned behavior (Ajzen, 1985; Krueger, 1993).

An alternate theoretical model of intentionality, the Shapero entrepreneurial event model (EEM) (Shapero,1982; Krueger,1993), also postulated that an individual's behavioral intentions provide the proclivity for future actions (Erikson, 2001). Shapiro's entrepreneurial events model states that an individual's behavioral intentions are based on two primary factors, perceived credibility and the propensity to act. The perceived credibility of the act is principally determined by its perceived desirability and perceived feasibility (Erikson 2001). Perceived desirability is one's personal attractiveness to starting a new business venture, and perceived feasibility is a discernable gauge of an individual's overall capability to launch a new venture (Shapero & Sokol, 1982, as referenced by Erikson, 2001). The entrepreneurial event model and the theory of planned behavior have been compared and successfully, empirically tested, and validated (Krueger et al., 2000; Fayolle et al., 2006) and support the concept that entrepreneurial intentions are the immediate predictor of entrepreneurial behavior (Brannback et al., 2007).

Through the model of intentionality, Bird (1988) extrapolates that entrepreneurial intentions are the state of mind that guides a person's attention to a specific goal or down a path to achieve something. When viewing entrepreneurs, the model of intentionality indicates that entrepreneurial intentions dictate the actions that foster the creation and implementation of a new business venture or the enhancement of value in existing businesses, products, or services (Bird,

1988). Furthermore, it indicates the intentions of the owner are the primary determinant of the structure and direction of a newly formed venture and thus impact the firm's growth, survival, and success (Bird, 1988).

Testing existing students' entrepreneurial intentions is used as a research proxy to indicate that students will become entrepreneurs instead of researching if they actually start new ventures after their entrepreneurship education. In much of the entrepreneurship education literature, the entrepreneurial intentions of college students are the dependent variable (Fayolle et al., 2006; Sancho et al., 2020; Von Graevenitz et al., 2010; Zhang et al., 2014); however, the research does not track those students to ascertain if their intentionality becomes an antecedent to action (Pittaway & Cope, 2007). Some researchers believe that measuring EI is not applicable to students who are not near the career decision point to become an entrepreneur. Therefore, more research needs to be done to discover if the intention ultimately manifests into the formation of actual entrepreneurial businesses. This dissertation research presumes that students who majored or minored in entrepreneurship have high entrepreneurial intentions. It adds to the literature by examining students after they have graduated and reviews if their intentions to become entrepreneurs manifested into new business creations.

Entrepreneurial Orientation and Individual Entrepreneurial Orientation

While entrepreneurship intention is well-researched, it has mostly been tested on college students (Fayolle & Gailly, 2015; Fernandes et al., 2018; Karimi et al., 2012) and used as a proxy and predictor of actual entrepreneurial activity. Entrepreneurial orientation (EO), however, is a concept that has been researched as a firm-level construct associated with entrepreneurial action and high company performance (Covin & Slevin, 1989; Lumpkin & Dess, 1996). Since its introduction, EO has garnered over 100 studies, advancing its acceptance and status as a significant

and relevant entrepreneurship concept (Rauch et al., 2009). Entrepreneurial orientation facilitated a new direction of entrepreneurship study as it transitioned from the practice of studying individual-level constructs like entrepreneurial intentions to firm-level constructs. Additionally, EO advanced the discipline by growing past the research of the core concept of entrepreneurship, which is fundamentally looking at new entries. It illuminated not just the conception of new entry but, more specifically, how that new entry is undertaken (Lumpkin & Dess, 1996).

Entrepreneurial orientation is the practices, processes, and decision-making activities leading to new entry (Lumpkin & Dess, 1996). Entrepreneurial orientation is distinctive in that it has two recognized sets of components and several research streams that validate both iterations. Miller (1983) originally framed entrepreneurial orientation around innovativeness, risk-taking, and proactiveness. Innovativeness is a propensity to engage in creativity and experimentation and introduce new products and services utilizing technological leadership (Rauch et al., 2009). Risk-taking is implementing bold actions to enter into the unknown through significant borrowing and/or applying substantial resources to venture into uncertain environments (Rauch et al., 2009). Proactiveness is a forward-looking, opportunity-seeking perception embodied by anticipating future demand and introducing new products and services prior to any competitor (Rauch et al., 2009).

In addition to innovativeness, risk-taking, and proactiveness, Lumpkin and Dess (1996) subsequently added to the EO construct the dimensions of competitive aggressiveness and autonomy. Competitive aggressiveness is the intensity with which a firm's efforts to outperform competitors are realized through intense offensive actions and forceful reactions to competitive threats (Rauch et al., 2009). Autonomy is the independent actions an entrepreneur takes to bring about the creation of a new venture (Rauch et al., 2009).

Upper echelons theory (Hambrick & Mason, 1984) informs that an organization is a reflection of its top leadership team. The outcomes of organizations, specifically ones formed entrepreneurially, might be characterized by the behaviors of their individual leader, so when looking at the EO of entrepreneurial firms, an individual-level construct should be used (Bolton & Lane, 2012). Since most entrepreneurial ventures are a reflection of the founding entrepreneur, the firm's performance can be directly attributed to the chief executive entrepreneur. While EO is responsible for firm performance in larger established firms, upper echelons theory indicates that a construct at an individual level for entrepreneurial firms should yield uniquely valid results. A measure of individual entrepreneurial orientation is appropriate when assessing the performance of an entrepreneurial firm.

While multiple empirical studies have found EO to be a significant causal factor in the success of organizations (Covin & Slevin, 1989; Lumpkin & Dess, 1996), it became beneficial to establish a reliable and valid measure to determine the EO of individuals as opposed to organizations. Thus, Bolton and Lane (2012) developed and validated a scale to measure individual entrepreneurial orientation (IEO). Initially, they tried to develop the IEO scale using the five EO variables from Lumpkin and Dess' (1996) EO; however, only three elements provided the requisite internal consistency. Risk-taking, innovativeness, and proactiveness attained Cronbach αs greater than 0.7, meeting the standard for scale development (Nunnally & Bernstein, 1994). Additionally, Bolton and Lane performed factor analysis to validate the reliability of the individual entrepreneurial orientation scale measures. It verified the internal validity of the risk-taking, innovativeness, and proactiveness components and confirmed the elimination of autonomy and competitiveness as components of the measure. Thus, the dimensions of the IEO scale matched the original three dimensions, risk-taking, innovativeness, and proactiveness, of the EO

construct as conceived by Miller (1983) and did not comprise the additional two dimensions of autonomy and competitiveness that were added to the EO stream by Lumpkin and Dess (1996).

In academia, all accounting students learn debits and credit the same way, and marketing students are taught the same 4 P's (product, place, price, promotion). However, unlike other business disciplines, entrepreneurship education is not taught the same way throughout academia. While actual entrepreneurship occurs before business management, entrepreneurship education continuously evolves based on the instructors' myriad knowledge, skills, and talents, creating unique pedagogies that simultaneously impart knowledge and stimulate learners (Solomon, 2007). Because of the paucity of knowledge on how to teach entrepreneurship effectively and the lack of expertise detailing successful instructional techniques, entrepreneurial educators recognize that more research is needed on how to continually and successfully teach entrepreneurship (Holmgren et al., 2004).

Successful entrepreneurship education delivery should assist in the creation of entrepreneurs. By giving entrepreneurship knowledge to potential entrepreneurs and developing their skills, the entrepreneur's effectiveness in the actions they take should be improved. Research shows that graduates with an entrepreneurship degree are up to three times more likely to start their own business and have annual incomes 27 percent higher than non-entrepreneurship majors (Jang, 2013). Individuals with entrepreneurship education can form companies that achieve lower failure rates for start-up businesses, and these firms can lower the unemployment rate (Urbano, Aponte and Toledano, 2008). However, research indicates that there may be a considerable latency between educational experience and eventual activity (Raposo & Paço, 2011); therefore, entrepreneurship education shouldn't be benchmarked by how many businesses are created in the

short term (Fayolle et al., 2006). The better determiner of its value is the development of long-term ventures by graduates with entrepreneurship-focused education (Galloway & Brown, 2002).

Minimal research has tracked entrepreneurship students after graduation. An exception is the research that was done at the University of Florida Center for Entrepreneurship and Innovation (CEI). They studied alums from 2005 through 2012 with the primary purpose of assessing the performance of the University of Florida's entrepreneurship education (Jang, 2013). Annual surveys were sent to alums who had taken entrepreneurship courses to track their careers. This study looked at students that had enrolled in any entrepreneurship course or program, including the professional masters in entrepreneurship, the traditional master in entrepreneurship, the graduate certificate program, students with graduate and undergraduate entrepreneurship courses, and undergraduates with entrepreneurship courses. That study did control for gender and ethnicity, and 3% (12) of the respondents were African American. This research expands the Jang study as it is not focused on one specific educational institution. It also differs in its population focus as this research specifically examines the outcomes of Black entrepreneurship-educated individuals.

Black Americans and Entrepreneurship Education

Since entrepreneurship is considered an essential driver for economic development, there is a demand for colleges to provide quality entrepreneurship education (Kassean et al., 2014). With the increase in entrepreneurship education, there is the expectation of more successful entrepreneurs (Galloway & Brown, 2002). Entrepreneurship education has significant relevance in Black communities because it does increase the possibilities for entrepreneurial success (Ede, Panigrahi, & Calcich, 1998).

In much of the entrepreneurship education literature, there is an absence of focus on Black people. Some research reviews ethnic minorities and includes Blacks as a sub-segment, but even that literature is limited. When looking at literature focused on Black Americans and entrepreneurship education, a plethora of additional research is needed.

Several researchers examined Black students' attitudes regarding entrepreneurship education (Ede et al., 1998; Gibson et al., 2014). Ede et al. (1998) concluded that there were no differences between black males and females regarding entrepreneurship, and as students progressed through an entrepreneurship curriculum, their attitudes towards entrepreneurship became more favorable. Additionally, they noted that Black students that have families with entrepreneurs have attitudes more favorable toward entrepreneurship than students with families without entrepreneurial backgrounds. They also noted mentorship is important in entrepreneurial interaction and curriculum. Finally, they concluded that entrepreneurship education should create more entrepreneurs and that entrepreneurship-educated entrepreneurs should perform better than entrepreneurs that were not entrepreneurship-educated. That research was on college sophomores, juniors and seniors. This research builds upon that by looking at Black entrepreneurship-educated students' post-graduation and examines if they perform better than entrepreneurs that are not entrepreneurship-educated.

Entrepreneurial intentions have been a significant focus in the entrepreneurship education literature, so one scholar looked specifically at black students' entrepreneurial intentions after taking an entrepreneurship course (Miller et al., 2009). Another study examined how entrepreneurship is presented to determine if learning entrepreneurial competencies would lead to gaining motivation to pursue entrepreneurial endeavors (Farhangmehr & Gonçalves 2017).

One stream of research reviewed the intended outcomes of Black seniors studying entrepreneurship and found that 36% saw their highest career aspirations as being a CEO or high executive in a corporate firm, 29% saw themselves being the CEO of a growing private firm that went public, but only 10% saw themselves as the CEO of an entrepreneurial firm (Harris et al., 2011). While intrapreneurship, being entrepreneurial inside a large corporate firm, is a desired outcome for some entrepreneurial students, for black communities, the creation of entrepreneurial firms by Black entrepreneurship major graduates should be the preferred outcome.

The Higher Education Act of 1965 defines an HBCU as: "*any historically black college or university that was established prior to 1964, whose principal mission was, and is, the education of black Americans, and that is accredited by a nationally recognized accrediting agency or association determined by the Secretary* [of Education] *to be a reliable authority as to the quality of training offered or is, according to such an agency or association, making reasonable progress toward accreditation. . .*" When defined, there were 107 HBCUs. In 2022, because of closings and accreditation revocation, there were 99 active HBCUs. When considering education for Blacks, many think about historically Black colleges or universities, HBCUs. In the 2020 – 2021 academic year, HBCUs conferred 13% of the bachelor's degrees and 5% of the master's degrees awarded to Black students in the U.S. (NCES, 2022). This number has decreased significantly over the past half-decade. In the 1976 – 1977 academic year, HBCUs accounted for 35% of bachelor's degrees and 21% of master's degrees conferred to Black students. Given the reduction in the percentage of degrees conferred to Black students by HBCUs, this research examines alums of schools with entrepreneurship programs throughout the U.S.

More than half of the two and four-year colleges in the United States have an entrepreneurship curriculum; however, only about a third of the Historically Black Colleges and

Universities (HBCUs) provide entrepreneurship education. In 2022, at the 4-year undergraduate level, only 8 HBCUs had 'entrepreneurship' degree programs, while another 8 had degrees with an entrepreneurship concentration, 5 had entrepreneurship minors, and 2 had certificate programs, one of which was in STEM entrepreneurship. Additionally, at HBCUs at the graduate level, there was 1 entrepreneurship MBA, 1 entrepreneurship master's certification, and 1 Ph.D. program in Urban Leadership and Entrepreneurship. At the 2-year community college level, there are 3 schools with entrepreneurship associate degrees and 1 with an entrepreneurship certification (Appendix E).

One prior research was done to ascertain if entrepreneurship education at HBCUs improves economic development in the inner cities (Oyefusi, 2009). A survey of alums that were entrepreneurship majors of HBCUs was conducted; however, the responses came from the schools and not the actual alums. This research reported three results which were: (1) the percentage of alumni that started businesses in inner cities was significant; (2) the percent of students that enrolled in an entrepreneurship program and that started a business is statistically significant; and (3) the type of entrepreneurship program (undergraduate, graduate, certificate, training) did not matter in regard to new businesses being started. This study stated several limitations, including (1) it did not get any responses from former entrepreneurship students. The schools replied, which supplied second-hand data. (2) It had 26 total respondents, of which only 18 had businesses, which didn't provide the appropriate sample size for analysis, and (3) the entrepreneurship education programs were in their infancy with few actual students. Given the number of respondents, further research needs to be done. While not explicitly focused on HBCUs, this current research has similarities that can assist in supporting or refuting the Oyefusi (2009) findings.

Many African-American students' studies are done at HBCUs, but Black Americans live and go to schools throughout the country. Studies done at schools throughout the U.S. should offer more precise insight into Black entrepreneurship-educated entrepreneurs than just research done at HBCUs. The Oyefusi (2009) study has some similarities to this study but also has some significant differences. (1) This study is based on first-hand data from entrepreneurs who graduated with an entrepreneurship major. (2) This study contrasts major entrepreneurship graduates with non-entrepreneurship major graduates. (3) It is looking at multiple schools throughout the U.S., not just HBCUs in the South. And (4) this study has a higher number of respondents across the U.S., so the results may be more generalizable.

Education

While a logical thought is that education would provide the theoretical basis for entrepreneurship education (Béchard & Grégoire, 2002), a review of the literature shows that most entrepreneurship education research is grounded in references from the management sciences instead of education (Gorman et al., 1997). Education utilizes multiple sources to instill in students the knowledge needed to enter and advance in their chosen careers (Miller et al., 2009). It provides benefits to individuals, thus impacting the communities they live in and serve.

In the fall of 2018, 16.6 million undergraduate students enrolled in college to pursue a postsecondary education (Table 01). Black students comprised 2.1 million (13%). To add context, White students made up 8.7 million (52%), Hispanic students were 3.4 million (20%), Asian students were 1.1 million (7%), Two or more races were 647,000 (4%), American Indian/Alaskan Natives and Pacific islanders combined comprised 165,000 (1%).

Table 01 Postsecondary Students by Race

Table 01 Postsecondary Students by Race

Characteristics of Postsecondary Students	Fall 2017	Fall 2018
Total enrollment	19.77 million	19.65 million
Undergraduate	16.76 million	16.61 million
White	8.88 million	8.66 million
Black	2.18 million	2.13 million
Hispanic	3.27 million	3.35 million
Asian	1.07 million	1.09 million
Pacific Islander	46,100	44,700
American Indian/Alaska Native	124,000	120,200
Two or more races	623,400	646,500
Nonresident alien	575,000	566,600

Source: NCES, The Conditions of Education 2020

Annually in the fall, colleges seek to enroll undergraduates of recent spring high school graduates. In 2018, the immediate College enrollment rate of high school completers was 69% (Table 02), and the overall enrollment rate of eligible 18 to 24-year-olds for undergraduates and graduates was 41%. Black student enrollment was 37%. In contrast, White enrollment was 42%, Hispanic was 36%, and Asian was 59% (Table 03).

Table 02 High School to College Immediate Enrollment Rate

Immediate College Enrollment Rate	2017	2018
Immediate college enrollment rate of high school completers	67%	69%
2-year institutions	23%	26%
4-year institutions	44%	44%

Source: NCES, The Conditions of Education 2020

Table 03 College Enrolment Rates by Race

College Enrollment Rates	2017	2018
College enrollment rates of 18- to 24-year-olds		
Total, all students	40%	41%
Male	37%	38%
Female	44%	44%
White	41%	42%
Black	36%	37%
Hispanic	36%	36%
Asian	65%	59%
Pacific Islander	33%	24%
American Indian/Alaska Native	20%	24%
Two or more races	41%	44%

Source: NCES, The Conditions of Education 2020

Enrollment, however, does not equate to graduation. All U.S. colleges track and report 4-year and 6-year graduation rates, with six years being the expected benchmark for graduation. In 2018, only 62.4% of first-time, full-time undergraduates graduated within six years (Table 04). That means 62% of the students that began in 2012 graduated from the same institution that they started; however, this stat does not account for students that transferred to other institutions and graduated. For black students, the 6-year graduation rate is significantly less than 40% (NCES 2020).

Table 04 Undergraduate Retention and Graduation Rates

Undergraduate Retention and Graduation Rates	2016–17	2017–18
4-year institutions		
Retention rate of first-time undergraduates	81.0%	81.0%
Graduation rate (within 6 years of starting program) of first-time, full-time undergraduates	60.4%	62.4%
2-year institutions		
Retention rate of first-time undergraduates	62.4%	62.3%
Graduation rate (within 150% of normal time for degree completion) of first-time, full-time undergraduates	31.6%	32.6%

Source: NCES, The Conditions of Education 2020

In 2018, colleges conferred 1,981,000 bachelor's degrees (Table 05). Regarding field of study and degree completion in 2018, the highest number of degrees, 386,200 (19%), was conferred in business (Table 06). The next closet number of degrees was in the health professions and related fields at 244,900 (12%). The business discipline, of which entrepreneurship is a segment, had 58% more degrees conferred than the nearest other disciplines. Anecdotally, the business discipline also granted the highest number of graduate degrees, 192,200, which was 31% higher than Education at 146,400 and 54% higher than health professions and related fields at 125,200. Business degrees were the most popular field of study for bachelor's degrees conferred for all racial and ethnic groups and nonresident alien graduates. This illuminates business as the most popular area of study for students. With the desire of many students to own a business, the need for entrepreneurship, the progenitor of all businesses, is evident.

Table 05 Postsecondary Certificates and Degree Conferred

Postsecondary Certificates and Degrees Conferred	2016–17	2017–18
Number of degrees/certificates conferred by postsecondary institutions		
Certificates below associate's degrees	946,000	955,000
Associate's degrees	1,006,000	1,011,000
Bachelor's degrees	1,956,000	1,981,000
Master's degrees	805,000	820,000
Doctor's degrees	181,000	184,000

Source: NCES, The Conditions of Education 2020

Table 06 Undergraduate Highest Fields of Degree Attainment

Undergraduate Degree Fields	2016–17	2017–18
Number of bachelor's degrees conferred (top three bachelor's programs)		
Business	381,100	386,200
Health professions and related programs	238,000	244,900
Social sciences and history	159,100	160,000

Source: NCES, The Conditions of Education 2020

In 2018 there were 3,883 degree-granting postsecondary institutions, but that number declined in 2019 to 3,692 (Table 07). Of the original 107 Historically Black Colleges and Universities (HBCUs), there are 99 operating in 2022. HBCUs are degree-granting colleges and universities founded prior to 1964 with the primary mission of educating Black Americans. While dedicated to the education of Black students, HBCUs admit and serve students of all races. In 2016 HBCUs had 292,100 students enrolled, with 223,500 being black, comprising 77%, so 23% of enrolled students were non-Black (NCES 2020). In the fall of 2018, there were 101 operating 4-year and 2-year HBCUs, of which 51 were public institutions, and the other 50 were private nonprofit institutions. There are no private for-profit HBCUs. Of the 2.6 million students enrolled in all postsecondary institutions in 2016, Black enrollment totaled 223,500 which accounted for 9% (NCES 2020). Female enrollment at HBCUs in 2016 was 62%, which is noteworthy because female students have been less inclined to pursue entrepreneurship.

Table 07 Number of Degree-Granting Postsecondary Institutions

Characteristics of Degree-Granting Postsecondary Institutions	2017–18	2018–19
Total number of degree-granting institutions with first-year undergraduates	3,883	3,652
Number of 4-year institutions with first-year undergraduates	2,407	2,323
Number of 2-year institutions with first-year undergraduates	1,476	1,329

Source: NCES, The Conditions of Education 2020

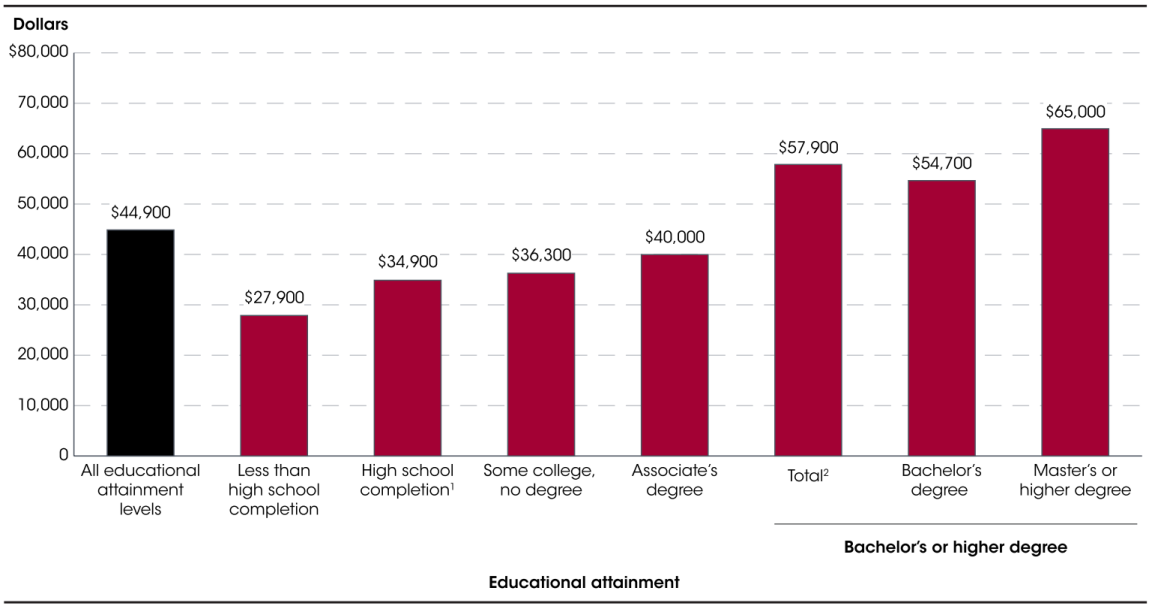
Up through 2019, a higher percentage of adults 25 to 29 years were attaining higher levels of education (Table 08); however, while the overall population earned a bachelor's degree or higher at 39%, Black people were only at 29%. For context, White people were at 45%, Hispanics at 21%, and Asians at 71%. The higher level of education earned was rewarded because the greater a person's education level, the higher their salary (Figure 03). In 2018, approximately 74 percent of people in the labor force worked full-time, year-round. Through 2018 for 25 – 34-year-old full-time workers, the higher the level of education attained correlated to higher median earnings.

Table 08 Educational Attainment by Young Adults

Educational Attainment of Young Adults	2018	2019
Percentage of 25- to 29-year-olds with selected levels of educational attainment		
High school completion or higher	93%	94%
Associate's or higher degree	47%	49%
Bachelor's or higher degree	37%	39%
Master's or higher degree	9%	9%

Source: NCES, The Conditions of Education 2020

Figure 03 Salary by Educational Attainment



Source: NCES, The Conditions of Education 2020

Individuals with at least some college education are associated with the highest levels of entrepreneurship (Raposo & Paço, 2011). The investment in education provides a more significant payoff for people in general and entrepreneurs more specifically than for wage-earning employees (Bosma et al., 2012). Jang's (2013) research indicated that graduates with an entrepreneurship degree, through entrepreneurial activities, might have annual incomes 27 percent higher than non-entrepreneurship majors. This research will compare Black entrepreneurship-educated entrepreneurs to Black entrepreneurs who did not study entrepreneurship or business, termed natural entrepreneurs. It will elucidate if education leads to higher wages and additional value for the entrepreneurs and their communities.

Black Entrepreneurship Status

Based on the U.S. Small Business Administration 2020 Survey of Business Owners, Black Americans create 1 million jobs with annual revenue of $187.6 billion. That can employ 4% of the working-age African American population and give them $7,000 annually. Conversely, white-owned businesses create 55.9 million jobs with annual revenue of $12.9 trillion. That can employ every working-age non-Hispanic white American and provide them with $102,000 annually. The disparity in these numbers is astounding, and the implications are even direr. Non-Hispanic White-owned businesses are able to deliver about fifteen times more per person for non-Hispanic White Americans than Black-owned companies can provide for Black Americans. With a poverty threshold of approximately $35,000, no one could live on $7,000 annually, while $105,000 per person could offer a reasonable lifestyle. Additionally, Black-owned businesses totaled 2.6 million firms in 2012. More than 95% of these businesses were primarily sole proprietorships or partnerships with no paid employees. Since 2012, black businesses have grown in the U.S.; however, revenues remain a small fraction of total U.S. business revenue. Black companies employ a fraction of workers. These numbers indicate that Black entrepreneurs mostly own smaller businesses that generate lower revenues.

In 2020 the American real median household income was $67,532; however, for Black Americans, the real median income was $45,870, 32 percent less than the average (U.S. Census Bureau, 2020). In contrast, for non-Hispanic White Americans, it was $74,912, eleven percent above the mean and sixty-three percent higher than Black Americans. The poverty statistics detail that Black Americans' poverty rate was 18.8 percent, representing 8.1 million people. In contrast, the poverty level for Non-Hispanic Whites was 7.3 percent representing 14.2 million people (U.S. Census Bureau, 2020). Reflecting on these numbers, Black Americans comprise about thirteen

percent of the population but contain about twenty-four percent of the people living in poverty. Contrastingly non-Hispanic White Americans account for sixty percent of the population but only forty-two percent of the people living in poverty. Black people are overrepresented in the percentage of the population living in poverty, and efforts need to continue to eliminate this situation. This research examines if entrepreneurship education can be a factor in the solution to this problem.

The United States is one of the world's most dynamic, flexible, and entrepreneurial economies (Decker et al., 2014). For Black people, entrepreneurship can be a pathway to escape poverty and unemployment (Moore, 1983). Policymakers and academics see entrepreneurship as a road out of poverty, an alternative to unemployment, and a way to counter employment discrimination (Fairlie, 2002). Businesses with less than 500 employees employ over 50% of the U.S. workforce and are the inventors of a high number of innovations in technology (Bruton & Bamford, 2015). Efforts to foster more significant entrepreneurial activity through Black communities, such as entrepreneurship education, must be explored, refined and maximized to help transform Black populations into an equitable status.

Black Entrepreneurship Benefit to Community

Adding entrepreneurs and entrepreneurial firms to a community provides myriad values. New entrepreneurial firms can bring products or services that may not have previously been available to a community (Siemens, 2019). They can also bring competition that can cause prices to decrease and facilitate the creation of new products (Acs & Storey, 2004). Conversely, new firms potentially also bring new customers into the community, which can benefit other businesses (Siemens, 2019). Monti Jr et al., 2007 found that new ventures aid communities by collaborating with and making referrals to other local firms, mentoring youth, sponsoring neighborhood activities and providing meeting space. Additionally, entrepreneurial businesses are a primary enabler for economic development and can also help revitalize neighborhoods that have become rundown (Liu et al., 2014).

The invisible hand theory by Adam Smith (Smith, 2023). informs that when entrepreneurs start businesses for their own purposes, there is a cascading effect where they also benefit their communities. They hire some of their employees locally, which helps decrease unemployment. They also bring employees and customers into the community, where they spend money at other businesses aiding in those businesses' growth (Siemens, 2019). The company can also patronize other local firms and partner with them to pursue additional, more considerable opportunities.

Hypotheses Development

Economic development transfers the human condition from low to high consumption, thus shifting people from poverty into sufficiency (Mehmood et al., 2019). By 1942, Schumpeter developed his Entrepreneurship theory by defining the entrepreneur as the reformer and revolutionizer of production patterns, who accomplishes this by exploiting an invention or new technology to produce new goods or previous goods in a new way or to deliver existing goods to a new market. Through innovation, entrepreneurship propels society economically forward, so promulgating entrepreneurship through black communities should result in more equitable outcomes. As the primer for economic development, entrepreneurship theory tells the who, the entrepreneur, the how, through innovation, and the why, movement into economic sufficiency (Croitoru, 2012; Schumpeter, 1934), which is currently critically needed for Black communities.

Human Capital Theory

The human capital theory states that people who possess a greater level of skill, knowledge, and other competencies will achieve a higher performance outcome (Martin et al., 2013). It also infers that society, as well as individuals, will benefit economically from the investment in people (Sweetland, 1996). This nuance of human capital theory is an underlying concept for this research, mainly because education is a form of human capital, so adding entrepreneurship education should increase a person's proficiency in entrepreneurship. While the first modern use of the term 'human capital' in economic literature was by Schultz (1961), the foundation of human capital theory date back to Adam Smith (2023) when he discussed human effort as the basis of all wealth. The two foundational components of human capital are "acquired and useful abilities of all inhabitants." Where ability can be attained through "education, study or apprenticeship." (Smith,2023)

Human capital can be measured in levels of education, work experience, and other life experiences (Martin et al., 2013). One form of human capital development is nurturing entrepreneurship (Lyons et al., 2012), and higher education levels increase the possibility of entering into entrepreneurship (Gurley-Calvez et al., 2010; Moutray, 2007). Academic-focused entrepreneurship education demonstrated a significantly stronger relationship to entrepreneurial outcomes than training-focused entrepreneurship education (Martin et al., 2013). Additionally, entrepreneurship education was associated with higher levels of entrepreneurship-related skills and knowledge, intentions to become an entrepreneur and total entrepreneurship-related human capital assets. (Martin et al., 2013). This research is based on the tenets of human capital theory, where individuals with education specifically focused on entrepreneurship should realize higher entrepreneurial success than those without similar subject matter knowledge if they choose to pursue new venture creation.

Research Questions

Entrepreneurship is a path for Black Americans to gain more economic parity, and entrepreneurial businesses provide benefits to their community (Siemens, 2019). Human capital theory informs that the more educated an individual is, the better they should perform compared to someone without the same education (Martin et al., 2013). Given these facts, combining education with entrepreneurship should produce entrepreneurs who will achieve enhanced results and benefit their community at a greater rate than non-entrepreneurship-educated entrepreneurs. To this author's knowledge, there has been no research on the performance of American Black entrepreneurship-educated entrepreneurs and their impact on their community that has obtained data from the actual Black entrepreneurship-educated entrepreneurs. Additionally, to this author's

knowledge, no research has compared Black entrepreneurship-educated entrepreneurs to Black non-entrepreneurship-educated entrepreneurs. This study will aid in identifying if entrepreneurship education provides additional value to Black entrepreneurs and Black communities.

Research Question 1:

> Do Black entrepreneurs with an undergraduate degree in entrepreneurship start businesses that provide more business performance and social impact benefits to Black communities than Black entrepreneurs that are not entrepreneurship-educated?

Education, specifically entrepreneurship education, is not the only factor that determines the level of entrepreneurial success. Multiple factors can contribute to the economic performance and social impact provided by entrepreneurial firms. Entrepreneurial orientation (EO) is a construct associated with enhanced performance for companies, and individual entrepreneurial orientation (IEO) is an appropriate construct to use to examine entrepreneurs (Bolton & Lane, 2012). The IEO will be assessed across entrepreneurship-educated entrepreneurs and natural entrepreneurs to determine whether it is an enhancing factor.

Research Question 2:

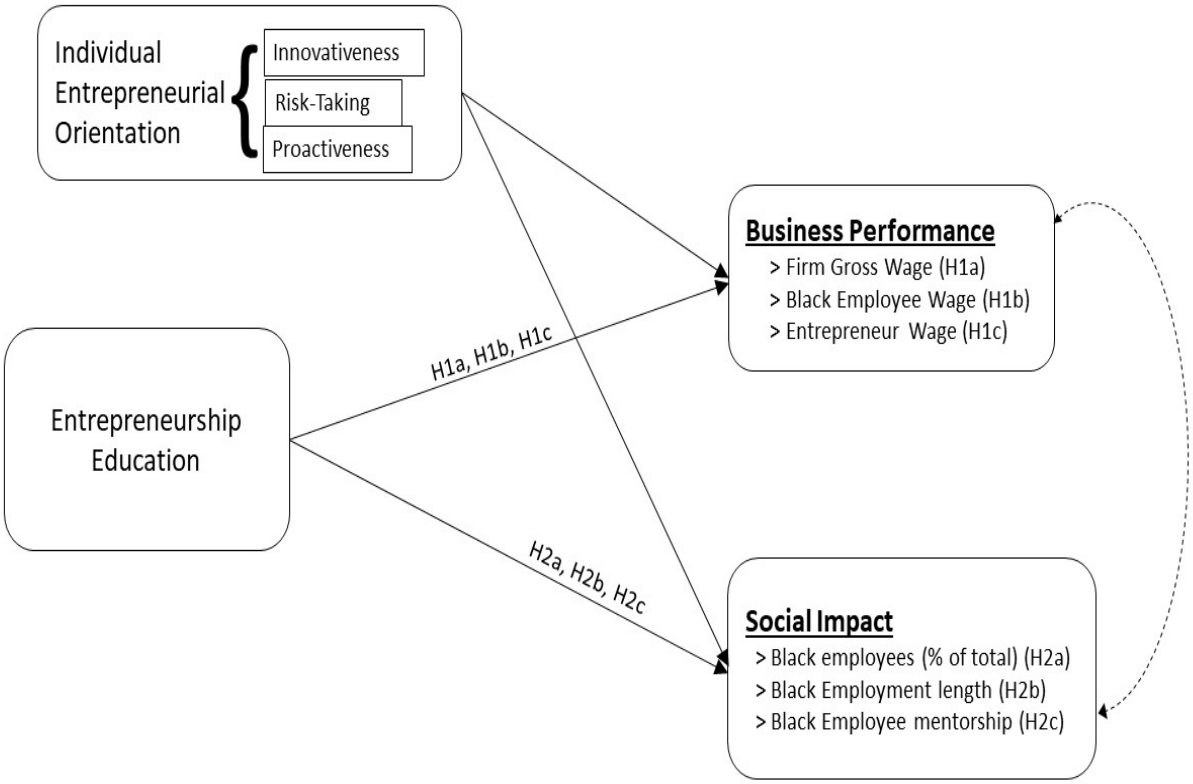
> Does individual entrepreneurship orientation (IEO) affect the business performance and social impact of Black entrepreneurship-educated entrepreneurs and Black entrepreneurs that are not entrepreneurship-educated?

Model Overview

If entrepreneurship is going to aid in creating more economic parity for Black Americans, entrepreneurship education may be a primary driver to increase Black business creation and performance. Black entrepreneurship has increased in the U.S. since 2000; however, revenues are significantly lower for Black entrepreneurs, and the financial equity gap for black people remains sizeable (U.S. Census Bureau, 2021). Creating Black businesses hasn't impacted equity levels, so creating better-performing Black businesses needs to occur. Education, specifically entrepreneurship education, could be a necessary element to enhance Black business performance and create a more equitable situation. Since education helps improve performance, educating would-be entrepreneurs should create better-performing entrepreneurs.

Human capital theory informs that adding human capital, such as education, improves performance (Martin et al., 2013). Thus, giving Black entrepreneurs entrepreneurship education prior to venture creation should aid in producing superior performance from those entrepreneurs. This research framework hypothesizes that entrepreneurship education can be a determinant of improved entrepreneurial performance that can assist in creating Black firms, increasing Black employment, and providing greater financial (business) and non-financial (social impact) performance. (See Figure 04: Theoretical Model.)

Figure 04 Theoretical Model



In addition to education, other factors can influence entrepreneurial activity and entrepreneurial success. Demographic data points like entrepreneurial parents, gender, age, the community one grew up in, and the type of school attended can all have an impact and will be reviewed. However, a singular characteristic linked to entrepreneurial performance can be an influential factor in exploring the efficacy of entrepreneurship education. The upper echelons theory (Hambrick & Mason, 1984) informs of the impact of the leading entrepreneur, and by using the individual entrepreneurial orientation (IEO) measure (Bolton & Lane, 2012), a comparative review across Black entrepreneurship-educated alums and natural entrepreneurs is attainable. The individual entrepreneurial orientation (IEO), a person-level construct (Koe, 2016), is used as a

covariate for the comparison of both populations to understand if it enhances the relationship between the independent variable entrepreneurship education and the dependent variables representing business performance and social impact. The participants in this study who have received entrepreneurship education are contrasted with natural entrepreneurs who have not received entrepreneurship education. Since individual entrepreneurial orientation has a proven relationship with business success (Bolton, 2012), it is uniquely suited to function as a covariate in this research and will operate as the covariate to facilitate the investigation of the possible differences in performance existing between the two groups.

Human capital theory informs that people who have completed higher levels of education will have more significant performance outcomes (Martin et al., 2013). Given the human capital theory, Black entrepreneurship-educated entrepreneurs (EEE) should have higher achievement outcomes than Black non-entrepreneurship-educated entrepreneurs (natural entrepreneurs). Therefore, entrepreneurship-educated entrepreneurs will have more knowledge regarding their chosen path of new venture creation and should utilize that knowledge to avoid pitfalls that obstruct the success of non-entrepreneurship-educated entrepreneurs. This knowledge should lead to more success. One way of measuring entrepreneurial performance is by reviewing economic performance (Murphy et al., 1996). When reviewing economic performance, it is essential to use several measures (Venkatraman & Ramanujam, 1986). For this research, three measures will be used to review economic performance. These measures are the gross profit of the firm, average employee wage and entrepreneur owner wage. Black entrepreneur-educated firms should show greater business performance than natural entrepreneur firms. The first measurement of business performance will be the firm's gross revenues.

H1a: After controlling for IEO, Black entrepreneurship-educated entrepreneur firms will have higher gross revenues than Black natural entrepreneur firms.

Firms that perform at a higher business level should be able to reward their employees more than firms with lower business performance. It is likely that entrepreneurs with greater skill levels will operate a more successful business, and employees will be compensated higher (Baptista et al., 2013). Since education adds to an entrepreneur's skill level, entrepreneurship-educated entrepreneurs should have a greater business performance than natural entrepreneurs. This will lead to a betterer performing firm and a higher wage for employees. The second measurement of business performance will be the firm's employee wages.

H1b: After controlling for IEO, Black entrepreneurship-educated entrepreneur employers will pay higher wages than Black natural entrepreneur employers.

One reason any entrepreneur takes the risk of starting a business is to create income to provide themselves with financial stability. For the entrepreneur to allow the company to continue beyond a reasonable start-up period, some growth will be needed (Edelman et al., 2010), and the entrepreneur will need to maintain a wage worth the risk and effort and support the business continuance. If an entrepreneurial firm has business performance at a higher level, the entrepreneur can partake in the firm’s superior performance through a higher wage. If education allows an entrepreneur the skills to create higher performance, entrepreneurship-educated entrepreneurs should have a greater business performance than natural entrepreneurs. The third measurement of business performance will be the employer's wages.

H1c: After controlling for IEO, Black entrepreneurship-educated entrepreneurs will earn a higher wage than Black natural entrepreneurs.

Entrepreneurial businesses provide multiple benefits to the communities in which they reside. One primary benefit to any community is stimulating job creation (Decker et al., 2014) and employing local residents (Monti et al., 2007). For Black communities, local employment is essential to mitigate the excessively high unemployment rates, which are consistently almost twice the Caucasian unemployment rate (Reuben & Queen, 2015). Black entrepreneurs create jobs and employ Black and other minority employees, while White entrepreneurs tend not to hire Blacks, even when owning businesses in Black communities (Bates, 2006). If entrepreneurship education adds to Black entrepreneurs' performance, then Black entrepreneurship-educated entrepreneurs should hire more black employees than Black natural entrepreneurs.

H2a: After controlling for IEO, Black entrepreneurship-educated entrepreneurs will hire more Black employees than Black natural entrepreneurs.

For Black communities, in addition to providing local employment, it is essential that employment be long-lasting and not periodic. To combat systemically high unemployment rates, jobs provided by Black entrepreneurs not only need to be provided, but they also need to be sustained. Entrepreneurs with a greater amount of education should employ people for longer durations than entrepreneurs with less education (Block & Sandner, 2009).

H2b: After controlling for IEO, Black entrepreneurship-educated entrepreneurs will have longer employment lengths than Black natural entrepreneurs.

The owner's knowledge and skill will not funnel to employees through observation, proximity, or osmosis. Higher performance will occur through deliberate action. Entrepreneurial mentorship can be a valuable aspect of entrepreneurship education and can aid in nurturing future entrepreneurs (Ede et al., 1998). An entrepreneurship-educated entrepreneur who experienced mentorship will realize its value and may be more predisposed to mentor employees.

H2c: After controlling for IEO, Black EEEs will mentor their Black employees more than Black natural entrepreneurs.

Summary

National income and poverty numbers illustrate that economic inequity has been and continues to be a reality for Black Americans, but hopefully, a cadre of Black entrepreneurship-educated entrepreneurs can help mitigate this disparity. Ideally, fostering Black entrepreneurial careers should lead to increased job creation, and expanded employment should lead to more equitable economic prosperity for Black Americans. Both education and entrepreneurship are pathways out of poverty. Education provides the knowledge and societal currency to advance, while entrepreneurship offers the mechanism for self-sufficiency. Combining the two concepts in Black communities is expected to create an expansive foundation for economic empowerment.

New venture creation executed by appropriately educated Black entrepreneurs engenders the prospect of tremendous success and substantial community and societal impact.

CHAPTER III: METHODOLOGY

The primary purpose of this research is to examine if Black entrepreneurs with an undergraduate degree in entrepreneurship start businesses that provide more benefit to Black communities than Black entrepreneurs that are not specifically entrepreneurship or business collegiately educated. This chapter details the methodology used to test the derived hypotheses. It is organized into sections that discuss the design of the research, the population sample, the method of data collection, the collection instrument, and the variables that will be examined.

This research will use business performance and social impact on the Black community as the dependent variables. This research examines for-profit firms, and their business performance will be reviewed by looking at their gross revenue, the average wage paid to black employees and the average entrepreneur wage. Social impact will be reviewed by looking at the percentage of black employees that Black businesses employ, the length of Black employee employment, and the amount of mentorship entrepreneurs deliver to Black employees.

For-profit businesses were chosen for this research because a primary goal of those businesses is financial accumulation; thus, the measurement of the results across all firms uses the same metric. Not-for-profit companies have different missions, motivations and goals, where measuring equally and comparing results across firms becomes a difficult, if not impossible, task. Since financial accumulation is a goal of all for-profit firms, gross revenue is a component of the business performance metric. Gross revenue will also be a factor in the growth and expansion of the business, which will typically add employees, products and services for customers and communities.

Black employee wage is another component of the business performance metric. Having Black employees helps reduce unemployment (Urbano et al., 2008), which impacts crime and incarceration statistics (Mehmood et al., 2019). A consistent wage is the initial impetus for moving individuals and families out of poverty and the foundation for achieving economic parity. The final component to measure business performance is the entrepreneur wage (Bosma et al., 2012), which must be sufficient for the entrepreneur, or they will eventually close the business. It will dictate the long-term viability of the enterprise.

The first component of social impact that will be reviewed is the number of Black employees. While the actual number is employees is important, the percentage of Black employees will be examined as that offers an ability for comparison across multiple-sized companies. The next component will be Black employee employment length. Providing long-term steady employment at a reasonable wage allows individuals and families security and the ability to focus on building a stable life. The final component of social impact will look at hours spent mentoring employees. Mentorship is an essential element needed for employees to grow throughout their careers.

Research Design

This research study is quantitative in nature and will be done using a survey instrument to collect data pertinent to the variables of interest. Surveys provide statistical descriptions of a population sample by asking questions and are appropriate tools for data collection when quantitative data is sought (Fowler, 2013). Quantitative research utilizes statistical techniques to examine collected data and determine relationships among the variables of concern (Creswell & Creswell, 2017).

A survey was administered online through the Qualtrics survey platform to alums who studied entrepreneurship and entrepreneurs who started businesses without any formal entrepreneurship or business collegiate education. All respondents were advised that participation in answering the survey was totally voluntary and that all data and information collected were anonymous and only to be used for research purposes. Additionally, they were informed that the study was reviewed and approved by the internal review board (IRB) of Worcester Polytechnic Institute. The study was approved by IRB with the assigned IRB number 22-0671. The variables to measure individual entrepreneurial orientation (IEO) have been taken from the well-authenticated Bolton and Lane (2012) questionnaire. The data instrument is provided in Appendix B.

Population / Sample and Data Collection

The non-probability sampling technique I used in this study allowed for greater flexibility and efficiency in the recruitment process while also providing an opportunity to gather in-depth insights and perspectives from people with diverse experiences and backgrounds (Vehovar et al., 2016). The research will be comprised of two populations. Black people who studied entrepreneurship as undergraduate students are one population, and they will be contrasted with Black 'natural' entrepreneurs. The term natural entrepreneur is how this study refers to an entrepreneur who started their business without any formal entrepreneurship or business education.

Entrepreneurship-educated alums will be solicited through email from entrepreneurship faculty from their undergraduate school. Over 180 faculty from over 150 schools were contacted and asked to share the survey with their Black alums. Most agreed to assist, yet several admitted to not being aware of any Black entrepreneurship alums from their school. An email with an

internet link and a QR code link to the survey was sent out. Alternatively, several hundred entrepreneurship alums were contacted via the social media network LinkedIn based on their profile. LinkedIn profiles include a person's undergraduate and graduate major, and individuals can be found by searching through school alum records. In addition to taking the survey, alums were asked to contact and distribute the survey link to classmates and schoolmates. Via the LinkedIn profile, it was evident that not all entrepreneurship-educated alums were or had been entrepreneurs.

Natural entrepreneurs were solicited through entrepreneurial networks known to the researcher and contacts of the researcher. Accountants, CPAs, small business consultants and business acquaintances were requested to provide the survey to clients and entrepreneurs in their networks. Natural entrepreneurs were also requested to contact and distribute the survey link to other natural entrepreneurs in their networks, creating a snowball effect. Natural entrepreneurs were also solicited through entrepreneurship forums on Facebook and LinkedIn.

Data Collection Instrument

This study employed self-administered questionnaires to reduce interviewer variation and social desirability bias. As a result, online survey collection surveys were used. This approach allows respondents to set their own pace and duration for answering survey questions, decreasing the degree to which questionnaires given by interviewers cause distraction (Rada et al., 2014).

The survey instrument (Appendix B) consists of sixty-nine questions collecting information regarding business performance, social impact, individual entrepreneurial orientation, and demographic data. There are three sections of the survey instrument. Almost all the questions

are checkboxes, so while the survey is extensive in the number of questions, a respondent could answer all of them in 10 – 15 minutes.

The first section had forty-four questions. The initial questions were used to determine if the respondent was in the entrepreneurship educated or a natural entrepreneur population. It then asked questions related to business performance to collect the three business performance variables, firm wage, employee wage and entrepreneur wage. Three years of wages were collected to utilize an average to mitigate 1-year outlier figures. Especially since the years collected were 2019, 2020 and 2021, it was essential to gather three years of data to average them together and mitigate the one-time negative or possibly positive non-normal impact of COVID-19. The social impact variables were also collected. They were the number of total and Black employees, where the percentage of Black employees was calculated and used for analysis. The average length of employment was also collected. Additionally, time spent in mentorship to employees was collected.

There are ten questions in the second section, which are from the Bolton and Lane (2012) questionnaire and are on a 5-point Likert scale. These questions will examine the individual entrepreneurial orientation (IEO) of the respondent. IEO helps account for how the entrepreneur impacts firm performance across all respondents and functions as a covariate.

There are twelve questions in the third section. They were demographic questions that helped to inform the research who exactly the respondents are. The demographic analysis results are detailed in Table 09 in Chapter IV, Analysis and Results. The final question asked if respondents would like to be contacted for future studies. If they selected yes, they were taken to a different survey that requested basic contact information (Appendix C). The contact survey was

not linked to the dissertation data-gathering survey, so the answers in the original survey remained anonymous.

Measures – Validity and Reliability

The IEO variables in this study were measured using a five-point Likert scale utilizing questions that have been validated in previous surveys from Bolton and Lane (2012).

Control Variables

The variable, firm age, is controlled for because revenue production may depend, to some degree, on the length of time the entrepreneur worked on growing their enterprise. Gender was also used as a control variable to ascertain if differences appear based on gender (Zhang et al., 2014). The existence of entrepreneurial parents was used as a control as entrepreneurial research found entrepreneurial exposure through parental entrepreneurs to influence entrepreneurial intention and performance. The type of school (public/private) and school category (ex., HBCU, HSI, PWI, etc.) were also controlled for.

Data Analysis

For statistical analysis, IBM SPSS Statistics 26 was utilized. The data analysis was conducted in sequential steps. Data were collected in an online survey administered through Qualtrics. Data entry into all fields was optional. As such, there were records where some or all of the data was missing. A one-way MANCOVA, multivariate analysis of covariance, was conducted. A MANCOVA is appropriate in situations where (1) there are two or more dependent variables, (2) there is one independent variable with two or more independent groups, (3) there is

one covariate measure at a continuous level, and (4) there is an independence of observations. Each of these conditions was met. The dependent variables were firm gross revenue, average employee wage, average owner wage, percent of employees, duration of employee employment and average mentors' hours. Entrepreneurship-educated and natural entrepreneurs were the two groups of the independent variable, and they had the independence of observations. IEO is the covariate being measured at a continuous level. In addition to the four requirements, a MANCOVA has seven assumptions that were tested (Table 09). These assumptions are (1) a linear relationship between each pair of dependent variables, (2) a linear relationship between the covariate and each dependent variable within each independent variable group, (3) homogeneity of regression slopes of the covariate and each dependent variable, (4) homogeneity of variance and covariance of the dependent variables to be equal in the independent variable groups, (5) tests to ensure there are no univariate outliers, (6) tests to ensure there are no multivariate outliers and (7) tests for normality of data.

Table 09 One-way MANCOVA Requirements and Assumptions

	One-way MANCOVA
	4 Requirements
A	2 or more dependent variable
B	1 IV with 2 or more categorical independent groups
C	1 continuous covariate
D	Independence or observations
	7 Assumptions
1	Linear relationship between each pair of DVs
2	Linear relationship between covariate and each DV within each IV group
3	Homogeneity of regression slopes of covariate and each DV
4	Homogeneity of variance and covariance of the DVs will be equal in IV groups
5	Tests for univariate outliers
6	Tests for multivariate outliers
7	Test or normality

The results of seven assumption tests are detailed in Chapter IV, Analysis and Results.

CHAPTER IV: ANALYSIS AND RESULTS

The previous Chapter, Chapter III: Methodology, discussed the methodology that was used for the testing of the hypothesized relationships. The actual analysis and outcomes of the investigation of the data are discussed in this fourth chapter.

Preliminary Analysis

Data were collected in an online survey administered through Qualtrics. Data entry into all fields was optional. As such, there were records where some or all of the data was missing. The initial file started with 107 records. There were 24 blank records where all of the data was missing, and those records were removed. There were 7 records where about 60 percent of the data was missing, and those records were removed. There were 2 records where the respondent did not answer the question indicating if they were an entrepreneurship-educated or natural entrepreneur, and those records were removed. There were 5 records where the respondent identified themselves as other than Black. Since this research was examining Black entrepreneurs, those records were removed. Additionally, one record of an entrepreneurship-educated alum that never had a business was removed, as most of the data fields were blank and inappropriate for analysis. This left a file of 68 records for analysis.

Next, all study variables were reported using descriptive analysis to confirm the percentage of entrepreneurship-educated entrepreneurs and natural entrepreneurs. There were 29 entrepreneurship-educated entrepreneurs, which is 43%, and 39 natural entrepreneurs, which is 57%. There were 33 males (48.5%) and 35 females (51.5%). There were 37 respondents from predominantly white institutions (PWI), equating to 54%, 10 from Historically Black Colleges or Universities equating to 15%, 7 from category other, equating to 10% and 14 from not sure,

equating to 21%. Thirty-one respondents (46%) attended public school, and thirty-seven (54%) attended private school. Thirty-three respondents (49%) reported having a 4-year college degree, twenty-five (37%) have a master's degree, and six (9%) have a doctorate or terminal degree. Only five% of the respondents didn't have at least a bachelor's degree. Additional percentages are presented in Table 10, Descriptive Analysis.

Table 10 Descriptive Analysis N and Percent of N by Categories

Descriptive Analysis

Descriptive Analysis of Categorical Study Variables (*n*=68)

Variable	N	%
Entrepreneurs		
Entre Educated	29	42.6
Natural	39	57.4
Race		
Black/African-American	68	100.0
Gender		
Male	33	48.5
Female	35	51.5
Entrepreneur Parents		
Yes	27	39.7
No	41	60.3
Education Level		
High School graduate	1	1.5
Some college	1	1.5
2-year degree	2	2.9
4-year degree	33	48.5
Master's degree	25	36.8
Doctoral or terminal degree	6	8.8
School Type		
Public	31	45.6

Private	37	54.4
College Classification		
HBCU	10	14.7
PWI	37	54.4
Other	7	10.3
Not Sure	14	20.6
Social Business		
Yes	30	44.1
No/Not Sure (5)	38	55.9
Reason (Push/Pull)		
Opportunity	62	91.2
Lack of Employment	2	2.9
Other	4	5.9
Primary Customer Black		
Yes	32	47.1
No	28	41.2
Not Sure	8	11.8
Business in Black Area		
Yes	20	29.4
No	31	45.6
Online	13	19.1
Not Sure	4	5.9
Legal Form		
No Legal Form	3	4.4
Sole Proprietorship	9	13.2
Partnership	2	2.9
C-Corporation	0	0.0
S-Corporation	8	11.8
Limited Liability Company (LLC)	43	63.2
Other	3	4.4
Gross Revenue 2019		
Less than $25,000	45	66.2
$25,000 – $99,999	11	16.1
$100,000 – $249,999	8	11.8
$250,000 – $999,999	3	4.4
$1 Million & over	1	1.5
Gross Revenue 2020		
Less than $25,000	42	61.8

$25,000 – $99,999	15	22.0
$100,000 – $249,999	9	13.2
$250,000 – $999,999	1	1.5
$1 Million & over	1	1.5
Gross Revenue 2021		
Less than $25,000	39	57.4
$25,000 – $99,999	14	20.5
$100,000 – $249,999	9	13.2
$250,000 – $999,999	5	7.4
$1 Million & over	1	1.5
Total Employees 2019		
1	46	67.6
2	10	14.7
3	5	7.4
4 or more	7	10.3
Total Employees 2020		
1	45	66.2
2	12	17.6
3	6	8.8
4 or more	5	7.4
Total Employees 2021		
1	42	66.2
2	12	17.6
3	6	8.8
4 or more	5	7.4
Total %Black Employees 2019		
1	49	72.1
2	9	13.2
3	6	8.8
4 or more	4	5.9
Total %Black Employees 2020		
1	49	72.1
2	11	16.2
3	5	7.4
4 or more	3	4.3
Total %Black Employees 2021		
1	47	69.1
2	10	14.7

3	2	2.9
4 or more	9	13.3
Average Length Black Employees Employment		
1	13	19.1
2	7	10.3
3	16	23.5
4	10	13.3
5 or more	21	33.8
Hours Black Firms Mentor Employees Annually		
Zero hours	40	58.8
1 – 5 hours	9	13.2
6 – 10 hours	3	4.4
11 – 15 hours	2	2.9
20 or more hours	14	20.6

MANCOVA Analysis

For this study, a one-way multivariate analysis of covariance (MANCOVA) was performed using IBM SPSS Statistics 26 to determine if there are statistically significant differences between the adjusted population means of the two independent groups. A MANCOVA is appropriate under conditions where the study design has the following characteristics: there are two or more dependent variables, there is one independent variable consisting of two or more categorical independent groups, there is one continuous covariate, and each of the observations is independent. Each of these conditions is met in this research. There are six dependent variables, three representing business performance and three representing social impact. Business performance variables include firm gross revenue, Black employee wages, and entrepreneur (owner) wage, and social impact variables include percent of Black workers, length of Black employee employment,

and amount of employee mentorship. The independent variable is entrepreneurship education, whose categories comprise Black entrepreneurs who have been college-educated with an entrepreneurship major or minor and Black natural entrepreneurs who have not been specifically educated with a college entrepreneurship or business major. The covariate variable is individual entrepreneurship orientation (IEO), and a unique entrepreneur took each survey, so the observations are independent.

A MANCOVA is appropriate as it allows for a covariate variable, individual entrepreneurial orientation (IEO), whose addition will increase the ability of the analysis to discover differences between groups. The MANCOVA is applicable because this research is interested in the effect as a whole on the business performance and social impact of entrepreneurship education as opposed to specifically the individual elements of each.

In addition to the four primary study design requirements previously discussed, the MANCOVA has seven additional assumptions relating to the data fit that must be met. The remaining seven assumptions will be tested utilizing SPSS Statistics functionality. The first three assumptions look at the linearity and homogeneity of regression slopes and are examined separately before running the MANCOVA. The last four assumptions will be reviewed while running the MANCOVA.

The first assumption is that there is a linear relationship between each pair of dependent variables within each group of independent variables. This assumption will be tested by plotting a scatterplot matrix of the six dependent variables for each independent variable population.

The second assumption is that there is a linear relationship between the covariate and each dependent variable within each independent variable group. This assumption will be tested by

adding a loess line to the scatterplots to facilitate interpreting if the relationships are linear. The linear relationship will be plotted on a scatterplot matrix. Linearity will indicate the one-way MANCOVA will be able to detect differences between the groups. The linear relationship between each dependent variable within each independent variable group and the covariate will be examined. This examination will be done through the creation of scatterplot matrices.

The third assumption will test if there is a homogeneity of the regression slopes. While the second assumption examines if the relationships are linear, the third assumption checks if these linear relationships are the same or different. The regression slopes of the covariate and each dependent variable should be the same for each independent variable group. To test this assumption, an interaction term, covariate times independent variable, will be added between the covariate and the independent variable. If the interaction term is not statistically significant, then the assumption of the homogeneity of the regression slopes will be validated.

While the first three assumptions are tested prior to running the one-way MANCOVA, the fourth through seventh assumptions are all tested while running the one-way MANCOVA. The fourth assumption tests for the homogeneity of variance and covariance. The fifth assumption tests for univariate outliers, while the sixth tests for multivariate outliers. The seventh assumption tests if the residuals are normally distributed for each independent variable group.

The fourth assumption will test for homogeneity of variance and covariance. The one-way MANCOVA assumes that the variance and covariance of the dependent variables will be equal in all of the independent variable groups. This assumption is examined by reviewing Box's M test of equality of covariance, which is executed during the process of running the one-way MANCOVA.

The fifth assumption will test for univariate outliers. In the groups of independent variables, there should not be any significant univariate outliers in terms of each independent variable. Univariate outliers can significantly negatively influence the results of a group's mean, which can adversely impact the statistical results. This fifth assumption is examined by reviewing if the standard residuals are more significant than + or - 3 standard deviations.

The sixth assumption will test for multivariate outliers. Multivariate outliers indicate that within each group of the independent variables, there is an atypical sequence of scores on the dependent variable. In the groups of the independent variable, there should not be any significant multivariate outliers in terms of each dependent variable. A Mahalanobis distance will be calculated to determine if any multivariate outliers exist.

The seventh assumption will test for normality as all residuals should be normally distributed for each independent variable group. However, multivariate normality is not easily functionally tested in SPSS. The Shapiro-Wilk test for normality will be performed to test this assumption,

A one-way MANCOVA was performed to determine the effect of entrepreneurship education on three business performance measures: firm gross revenue, employee wage and owner wage and three social impact measures: percent of Black workers, length of Black employee employment, and amount of employee mentorship. The results for each test are shown below.

Assumptions 1 & 2: Linear Relationships

Not all of the relationships between the covariate and dependent variables were linear, as assessed by visual inspection of a scatterplot. See Figures 05 and 06

Figure 05 Scatterplot Matrix Linear Relationships of DVs and Covariate

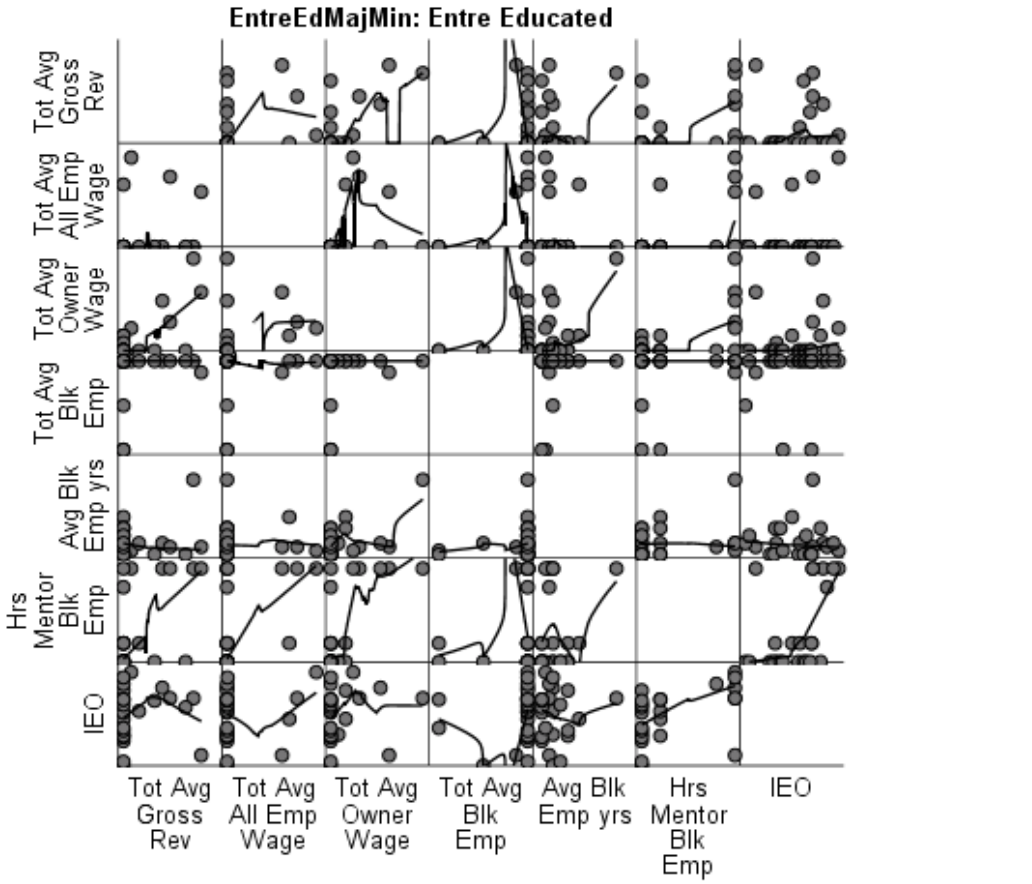
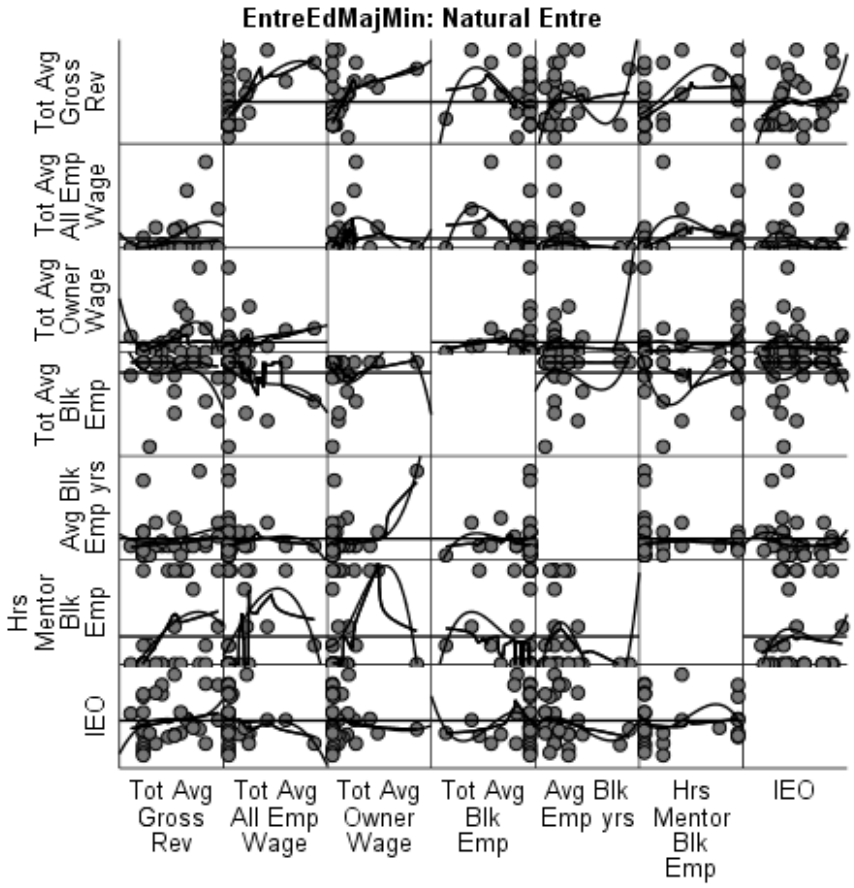


Figure 06 Scatterplot Matrix Linear Relationships of DVs and Covariate with Loess Lines



Assumption 3: Homogeneity of regression slopes

Assumption 3 of the one-way MANCOVA is that the slope of the relationship between the covariate and each dependent variable is the same in each group of the independent variable. The assumption of homogeneity of regression slopes can be tested by adding an interaction term to the one-way MANCOVA model (i.e., independent variable * covariate (EntreEdMajMin * IEOAllnew10) where the interaction term is between the covariate and independent variable. To determine whether there is a homogeneity of regression slopes, a GLM Multivariate procedure must be run, and the Wilks' Lambda row of the EntreEdMajMin * IEOAllnew10 row in the Multivariate Tests table must be reviewed. If the interaction term is not statistically significant, the assumption of homogeneity of regression slopes has been met. If the interaction term is statistically significant, the assumption of homogeneity of regression slopes is violated. That means the linear relationships between the covariate and each of the dependent variables within each group of the independent variable are not the same.

There was homogeneity of regression slopes, as assessed by the interaction term between IEO and entrepreneurship group, $F(6, 46) = 1.419$, $p = .228$. Since $p > .05$, the data met the assumption of homogeneity of regression slopes. This makes the assumption that both groups have a comparable connection between the independent variable (entrepreneurship education) and the dependent variables (business performance and social impact indicators). In this case, the interaction between individual entrepreneurial orientation (IEO) and entrepreneurship group was tested, and the results showed that the p-value was greater than .05, indicating that there was no significant difference in the relationship between IEO and the dependent variables across the two groups. This suggests that the relationship between IEO and the dependent variables is similar for both groups and supports the validity of the MANCOVA results. See Table 11

Table 11 Multivariate Tests

Multivariate Tests[a]

Effect		value	F	Hypothesis df	Error df	Sig.
Intercept	Pillai's Trace	.264	2.745[b]	6.000	46.000	.023
	Wilks' Lambda	.736	2.745[b]	6.000	46.000	.023
	Hotelling's Trace	.358	2.745[b]	6.000	46.000	.023
	Roy's Largest Root	.358	2.745[b]	6.000	46.000	.023
EntreEdmajMin	Pillai's Trace	.138	1.231[b]	6.000	46.000	.308
	Wilks' Lambda	.862	1.231[b]	6.000	46.000	.308
	Hotelling's Trace	.161	1.231[b]	6.000	46.000	.308
	Roy's Largest Root	.161	1.231[b]	6.000	46.000	.308
IEOAllNew10	Pillai's Trace	.148	1.335[b]	6.000	46.000	.261
	Wilks' Lambda	.852	1.335[b]	6.000	46.000	.261
	Hotelling's Trace	.174	1.335[b]	6.000	46.000	.261
	Roy's Largest Root	.174	1.335[b]	6.000	46.000	.261
EntreEdMajMin *	Pillai's Trace	.156	1.419[b]	6.000	46.000	.228
IEOAllNew10	Wilks' Lambda	.844	1.419[b]	6.000	46.000	.228
	Hotelling's Trace	.185	1.419[b]	6.000	46.000	.228
	Roy's Largest Root	.185	1.419[b]	6.000	46.000	.228

a. Design: Intercept + EntreEdMajMin + IEOAllNew10 + EntreEdMajMin * IEOAllNew10

b. Exact statistic

A one-way MANCOVA was performed to do the data analysis. During the process of running the one-way MANCOVA, the four additional assumptions were tested. They are assumption 4, the test of homogeneity of variances and covariances; assumption 5, the test for univariate outliers; assumption 6, the test for multivariate outliers and assumption 7, the test for normality.

Assumption 4: Homogeneity of variances & covariances

The one-way MANCOVA assumes that the variances and covariances of the dependent variables are equal in all groups of the independent variable, known as the assumption of homogeneity of variances and covariances. This assumption is met if the variances and covariances of the dependent variables are equal in all groups of the independent variable, EntreEdMajMin (i.e., EntreEducated and natural entrepreneurs).

The assumption of homogeneity of variances and covariances can be tested using Box's M test of equality of covariances, which was run as part of the one-way MANCOVA procedure. The results for Box's M test to determine if you have homogeneity of variances and covariances are found in the Box's Test of Equality of Covariance Matrices table. To determine whether Box's M test is statistically significant, review the "Sig." row in the Box's Test of Equality of Covariance Matrices table. If $p > .001$, there is not a statistically significant result, and the assumption of equal covariances across groups has not been violated. If < .001 is a statistically significant result, the assumption of equal covariances across groups has been violated.

There was homogeneity of variances and covariances, as assessed by Box's M test, $p > .001$.

(P = .062) See Table 12

Table 12 Box's test of Equality of Covariance Matrices

Box' Test of Equality of Covaviance Matrices[a]	
Box's M	36.324
F	1.513
df1	21
df2	8983.586
Sig.	0.062

Tests the null hypothesis that the observed covariance matrices of the dependent variables are equal across groups.

a. Design: Intercept + EntreEdMajMin + IEOAllNew10 + EntreEdMajMin * IEOAllNew10

The assumption of homogeneity of variances and covariances was tested using Box's M test. The results indicate that the observed covariance matrices of the dependent variables are equal across groups (as assessed by Box's M test, $p > .001$), suggesting that there is homogeneity of variances and covariances. The specific values of Box's M, F, and degrees of freedom are also reported in Table 12. However, the p-value (0.062) is slightly larger than the conventional significance level of 0.05, indicating that the evidence for homogeneity of variances and covariances is not very strong.

Assumption 5: Univariate outliers

There were seven univariate outliers (Tables 13, 14, and 15). Valid data should not be removed just because it is an outlier to the current research (Abbott, 2014), so the outliers records were kept. The outlier records and values are. ZRE_4 ID 53 (-3.30), ID 40 (-3.27), and ID 43 (-3.09); ZRE_2 ID 4 (4.26), ZRE_3 ID 2(3.77), ID 7 (3.23) and ZRE_3 ID 7 (4.39)

Table 13 Univariate Outliers (1 of 3) – ZRE_4

ZRE_1	ZRE_2	ZRE_3	ZRE_4	ZRE_5	ZRE_6	ID
-0.59	-0.65	-0.65	-3.3	-0.93	-0.2	53
-0.54	-0.41	-0.52	-3.27	-0.81	-0.6	40
-0.47	-0.28	-0.38	-3.09	-0.56	-0.53	43
2.21	1.72	-0.23	-2.21	0.79	0.25	3

Table 14 Univariate Outliers (2 of 3) – ZRE_2

ZRE_1	ZRE_2	ZRE_3	ZRE_4	ZRE_5	ZRE_6	ID
1.93	4.26	0.69	-1.17	-0.56	-0.17	4
0.87	2.79	0.72	0.46	-0.36	1.71	11

Table 15 Multivariate Outliers (3 of 3) – ZRE_5

ZRE_1	ZRE_2	ZRE_3	ZRE_4	ZRE_5	ZRE_6	ID
1.87	-0.41	2.9	0.28	3.77	1.32	2
1.51	-0.62	4.39	0.52	3.23	-0.7	7
-0.72	-0.75	-0.6	0.62	2.64	-0.65	38

Assumption 6: Multivariate Outliers

The assumption of multivariate outliers must be reviewed. Multivariate outliers can be found by reviewing the MAH_1 variable, which reflects the Mahalanobis distance values that were calculated when the Linear procedure was run. For 6 dependent variables, the critical value should not exceed 22.46 (Table 16).

Table 16, Mahalanobis Distance Critical Values, provides cut-off values for Mahalanobis distance for this alpha level for up to 10 dependent variables: This research is using 6 dependent variables, so the critical value that the Mahalanobis cannot exceed is 22.46.

Table 16 Mahalanobis Distance Critical Values

Mahalanobis Distance Critical Values

NO. of DVs	Critical Value
2	13.82
3	16.27
4	18.47
5	20.52
6	22.46
7	24.32
8	26.13
9	27.88
10	29.59

There were no multivariate outliers in the data, as assessed by Mahalanobis distance ($p > .001$). The highest value was 22.07 (Table 17 and Table 18), which does not exceed 22.46, the critical value when there are 6 dependent variables.

Table 17 Mahalanobis Distance Values – Ascending (1 of 2)

ID	MAH_1
16	0.63017
31	1.08542

Table 18 Mahalanobis Distance Values – Descending (2 of 2)

ID	MAH_1
7	22.06564
53	17.56546

Assumption 7: Normality

Residuals were not normally distributed, as assessed by Shapiro-Wilk's test ($p > .05$) (Table 19).

Table 19 Tests of Normality

Test of Normality

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	EntreEdMajMin	Statistics	df	Sig.	Statistic	df	Sig.
Residual for	Natural Entre	0.193	31	.005	.926	31	.033
TotAvgGrossRev	Entre Educated	0.359	24	.000	.682	24	.000
Residual for	Natural Entre	0.262	31	.000	.674	31	.000
TotAvgAllEmpWage	Entre Educated	0.387	24	.000	.600	24	.000
Residual for	Natural Entre	0.262	31	.000	.655	31	.000
TotAvgOwnerWage	Entre Educated	0.259	24	.000	.670	24	.000
Residual for	Natural Entre	0.305	31	.000	.692	31	.000
TotAvgBlkEmp	Entre Educated	0.419	24	.000	.526	24	.000
Residual for	Natural Entre	0.216	31	.001	.778	31	.000
AvgBlkEmpYrs	Entre Educated	0.240	24	.001	.743	24	.000
Residual for	Natural Entre	0.313	31	.000	.712	31	.000
MentorBlkEmp	Entre Educated	0.178	24	.047	.923	24	.680

a. Lilliefors Significance Correction

One-way MANCOVA is relatively robust to deviations from normality. When sample sizes are equal or nearly equal, only substantial violations of normality potentially cause problems.

MANCOVA Results

Table 20 Descriptive Statistics

Descriptive Statistics

	EntreEdMajMin	Mean	Std. Deviation	N
Tot Avg Gross Rev	Natural Entre	2.2366	1.35863	31
	Entre Educated	1.625	1.08264	24
	Total	1.9697	1.27217	55
Tot Avg All Emp Wage	Natural Entre	5999.26	12424.605	31
	Entre Educated	3706.88	8623.462	24
	Total	4998.95	10897.319	55
Tot Avg Owner Wage	Natural Entre	20893.39	38284.269	31
	Entre Educated	16142.96	31494.437	24
	Total	18820.47	35247.672	55
Tot Avg Blk Emp	Natural Entre	0.9125	0.17802	31
	Entre Educated	0.927	19554	24
	Total	0.9188	18424	55
Avg Blk Emp yrs	Natural Entre	4.58	4.201	31
	Entre Educated	4.50	4.482	24
	Total	4.55	4.285	55
Hrs. Mentor Blk emp	Natural Entre	1.48	2.111	31
	Entre Educated	1.63	2.163	24
	Total	1.55	2.115	55

Table 21 Estimates after Controlling for IEO

Estimates

	EntreEdMajMin	Mean	Std. Error	95% Confidence Interval Lower Bound	Upper Bound
Tot Avg Firm Gross Rev	Natural Entre	2.258[a]	0.225	1.807	2.709
	Entre Educated	1.619[a]	0.225	1.106	2.132
Tot Avg All Emp Wage	Natural Entre	5857.376[a]	1980.862	1880.629	9834.122
	Entre Educated	3607.577[a]	2252.536	-914.577	8129.732
Tot Avg Owner Wage	Natural Entre	20607.628[a]	6466.103	7626.384	33588.872
	Entre Educated	15796.768[a]	7352.925	1035.155	30558.382
Tot Avg Black Emp	Natural Entre	.914[a]	0.034	.847	0.982
	Entre Educated	.925[a]	0.038	.848	1.001
Avg Black Emp Yrs	Natural Entre	4.522[a]	0.785	2.946	6.097
	Entre Educated	4.494[a]	0.893	2.703	6.286
Avg Mentor Blk Emp Hrs	Natural Entre	1.493[a]	0.371	.749	2.236
	Entre Educated	1.546[a]	0.421	.700	2.392

a. Covariates appearing in the model are evaluated at the following values IEO = 4.0490.

Table 22 Means, Adjusted Means, Standard Deviation & Standard Errors for the Business Performance measures for the 2 entrepreneur groups

Means, Adjusted Means, Standard Deviation & Standard Errors for Business Performance measures for 2 entrepreneur groups

	Business Performance					
	Firm Gross Revenue		Employee Wage		Owner Wage	
Group	M (SD)	Madj (SE)	M (SD)	Madj (SE)	M (SD)	Madj (SE)
EntreEd	1.63 (1.08)	1.62 (0.26)	3706.88 (8623.46)	3607.58 (2252.54)	16142.96 (31494.44)	15796.77 (7352.93)
Natural	2.24 (1.36)	2.26 (0.23)	5999.26 (12424.61)	5857.38 (1980.86)	20893.39 (38284.27)	20607.63 (6466.10)

Covariates appearing in the model are evaluated at the following values: IEO = 4.0490.

Table 23 Adjusted Means, Standard Deviation & Standard Errors for the Social Impact measures for the 2 entrepreneur groups

Means, Adjusted Means, Standard Deviation and Standard Errors for the Social Impact measures for the 2 entrepreneur groups

	Social Impact					
	No. Black Emp		Black Emp Employment Yrs		Mentor Black Emp Hrs	
Group	M (SD)	Madj (SE)	M (SD)	Madj (SE)	M (SD)	Madj (SE)
EntreEd	0.93 (0.20)	0.93 (0.04)	4.50 (4.48)	4.49 (0.89)	1.63 (2.16)	1.55 (0.42)
Natural	0.91 (0.18)	0.91 (0.03)	4.58 (4.20)	4.42 (0.79)	1.48 (2.11)	1.49 (0.37)

Covariates appearing in the model are evaluated at the following values: IEO = 4.0490.

Means and adjusted means were not very dissimilar (see Table 22 and Table 23). The firm gross revenue, employee wage, and owner wage showed a general trend to be higher for the natural entrepreneur group. Average No Black employee, average Black employee employment length and average mentor hours were generally higher in the entrepreneurship-educated group.

The one-way MANCOVA showed there was no statistically significant difference between the entrepreneurship groups on the combined dependent variables after controlling for IEO, F (6, 46) = 1.419, p = .228, Wilks' Λ = .844, partial η2 = .156 (Table 11).

Reporting the MANCOVA results

The one-way MANCOVA was run to determine the effect of entrepreneurship education or lack thereof on the (business performance) firm gross revenue, average employee wage and owner's wage and (social impact) average number of Black employees, Black employee employment length and average annual hours Black employees are mentored. Means and adjusted means were not very dissimilar (see Tables 22 and 23). The firm's Business performance: gross revenue, employee wage, and owner wage showed a general trend to be higher for the natural entrepreneur group. The firm's Social Impact: the average number of Black employees, Black employee employment length, and mentor hours showed a general trend to be higher in the entrepreneurship-educated group.

Not all of the relationships between the covariate and dependent variables were linear, as assessed by visual inspection of a scatterplot. See Figures 05 and 06. There was homogeneity of regression slopes, as assessed by the interaction term between IEO and entrepreneurship group, F (6, 46) = 1.419, p = 0.228. There was homogeneity of variances and covariances, as assessed by Box's M test, p > .001. There were seven univariate outliers (Tables 13, 14, and 15). The analysis was run with the outliers. There were no multivariate outliers in the data, as assessed by Mahalanobis distance (p > 0.001). Residuals were not normally distributed, as assessed by Shapiro-Wilk's test (p > 0.05) (Table 23). The one-way MANCOVA showed there was no statistically significant difference between the entrepreneur groups on the combined dependent variables after controlling

for IEO, F (6, 46) = 1.419, p = .228, Wilks' Λ = 0.844, partial η2 = 0.156 (Table 23). The combined adjusted group means were not statistically significantly different ($p > 0.05$). Therefore, we cannot reject the null hypothesis, and we cannot accept the alternative hypothesis.

Hypotheses Results

Business performance

H1a: After controlling for IEO, Black entrepreneurship-educated entrepreneur firms will have higher gross revenues than Black natural entrepreneur firms.

Hypothesis H1a is not supported.

Based on the univariate tests of estimated marginal mean, the Black entrepreneurship-educated entrepreneur had *lower* gross revenues than the Black natural entrepreneur firms; F=3.527; p = 0.066; EntreEd Estimate Adjusted Mean (standard error) = 1.62 (0.26) < Natural Madj (SE) = 2.26 (0.23)

H1b: After controlling for IEO, Black entrepreneurship-educated entrepreneur employers will pay higher wages than Black natural entrepreneur employers.

Hypothesis H1b is not supported. p = 0.228

Based on the univariate tests of estimated marginal mean, the Black entrepreneurship-educated entrepreneur had no significantly different Employee wages than the Black natural entrepreneur firms; F(6,46)=0.563; p = 0.457; EntreEd Estimate Adjusted Mean (standard error) = 3607.58 (2252.54) < Natural Madj (SE) = 5857.38 (1980.86)

H1c: After controlling for IEO, Black entrepreneurship-educated entrepreneurs will earn a higher wage than Black natural entrepreneurs.

Hypothesis H1c is not supported.

Based on the univariate tests of estimated marginal mean, the Black entrepreneurship-educated entrepreneur had no significantly different Owner wages than the Black natural entrepreneur firms; F(6,46)=0.241; p = 0.625; EntreEd Estimate Adjusted Mean (standard error) = 15796.77 (7352.93) < Natural Madj (SE) = 20607.63 (6466.10)

Social Impact

H2a: After controlling for IEO, Black entrepreneurship-educated entrepreneurs will hire more Black employees than Black natural entrepreneurs.

Hypothesis H2a is not supported.

p = 0.843; EntreEd Madj (SE) = 0.93 (0.04) > Natural Madj (SE) = .91 (0.03)

The adjusted mean for hiring Black employees for entrepreneurship-educated entrepreneurs (.93) is higher than the adjusted mean for hiring Black employees for natural entrepreneurs (.91), which seems to support H2a; however, F(6,46)=0.040 and p = 0.843, so the differences are not significant; thus, H2a is not supported.

H2b: After controlling for IEO, Black entrepreneurship-educated entrepreneurs will have longer employment lengths than Black natural entrepreneurs.

Hypothesis H2b is not supported.

p = 0.982; EntreEd Madj (SE) = 4.49 (0.89) > Natural Madj (SE) = 4.42 (0.79)

The adjusted mean for employee length of Black employee employment for entrepreneurship-educated entrepreneurs (4.49) is higher than the adjusted mean employee length of Black employee employment for natural entrepreneurs (4.42), which seems to support H2b; however, $F(6,46)=0.001$ and $p = 0.982$, so the differences are not significant; thus, H2b is not supported.

H2c: After controlling for IEO, Black EEEs will mentor their Black employees more than Black natural entrepreneurs.

Hypothesis H2c is not supported.

$p = 0.924$; EntreEd Madj (SE) = 1.63 (2.16) > Natural Madj (SE) = 1.48 (2.11)

The adjusted mean for mentor hours for entrepreneurship-educated entrepreneurs (2.16) is higher than the adjusted mean mentor hours for natural entrepreneurs (2.11), which seems to support H2c; however, $p = 0.924$, so the differences are not significant; thus, H2c is not supported.

A MANCOVA was run to ascertain if collegiately entrepreneurship-educated Black entrepreneurs functioned at a higher business performance level and provided greater social impact than Black natural entrepreneurs, who are people that started a business without any collegiate entrepreneurship and business education. Individual entrepreneurial orientation (IEO), which is associated with high performance, was used as a covariate to help account for factors other than entrepreneurship education. The results were mixed in that natural entrepreneurs functioned at a higher level when reviewing business performance measures, and entrepreneurship-educated

entrepreneurs functioned at a higher level when reviewing social impact measures. There was no statistically significant difference in performance across both groups.

Each hypothesis postulated that entrepreneurship-educated entrepreneurs would function at a higher level than natural entrepreneurs in the three business performance measures and the three social impact measures. In the three business performance measures, the entrepreneurship-educated entrepreneurs did not function at a higher level ($1.62 < 2.26$; $3607.58 <= 5857.38$; and $15796.77 < 20607.63$) than the natural entrepreneurs, so the hypotheses were not supported. Additionally, the differences were not statistically significant ($p=.228$), so there was no support for the business performance measure hypotheses (H1a, H1b and H1c). When reviewing the three social impact measures, the entrepreneurship-educated entrepreneurs did function at a higher level ($0.93 > 0.91$; $4.49 > 4.42$; and $1.63 > 1.48$), so the hypotheses seemed like they were supported. However, the differences were not statistically significant ($p=.228$), so there was no support for the social impact measure hypotheses (H2a, H2b and H2c).

This chapter went through all of the steps in the MANCOVA methodology to analyze the data. The MANCOVA results related to the business performance measures and the social impact measures were presented. The next chapter, Chapter V, will discuss the findings, state the implications, communicate the limitations, offer future research suggestions, and provide a conclusion for this research.

CHAPTER V: CONCLUSION

In this Chapter V, conclusions about this research will be presented. The previous chapters have introduced the research, provided a literature review of the relevant topics and subtopics, and introduced the theories. The methodology and analysis have been presented, and now take-aways with be given. This chapter provides initial findings, implications for Black communities, and theoretical and practical implications. Additionally, the limitations associated with this study will be declared, and recommendations for future research will be offered.

Initial Findings

While the findings were not supported, there is information that leads to new knowledge. Black entrepreneurship-educated entrepreneurs are a small population. The human capital theory (Martin et al., 2013) informs that education generally aids in the recipient performing better than those without similar education. This research examines entrepreneurs who have received entrepreneurship education and compares them against entrepreneurs who did not receive an entrepreneurship education. It uses six measures for the comparison and finds mixed results. The entrepreneurship-educated entrepreneurs did not outperform natural entrepreneurs for the business performance measures, firm gross revenue, employee wage and owner wage, and there was no statistically significant difference between the groups. However, for the social impact measures, percentage of Black employees, length of Black employee employment and hours Black employees mentored, the entrepreneurship-educated entrepreneurs had higher values than the natural entrepreneurs. Yet, there was no statistically significant difference between the groups.

Since there was no statistically significant difference between the two groups, entrepreneurship education does not seem to offer a substantial advantage over specific knowledge such that a layperson without entrepreneurial knowledge is at a distinct disadvantage. However, it is noteworthy that entrepreneurship-educated entrepreneurs performed at a higher level than natural entrepreneurs across the social impact measures. Many entrepreneurs start businesses for reasons other than just making money (Block & Sandner, 2009). Based on this research, entrepreneurship-educated entrepreneurs seem more directed toward providing a social impact than natural entrepreneurs. That result implies entrepreneurship is a credible career option for Black people and that it can provide a beneficial effect on Black communities.

Black Community Impact

Having a positive impact on the community that you're from is a worthy and noble aspiration. For black communities, this research does indicate that majoring or minoring in entrepreneurship and pursuing a collegiate entrepreneurship education is a viable option worth exploring. This research informs that Black entrepreneurship-educated entrepreneurs are employing more Black people for an extended time and providing those employees with additional mentorship. Unemployment can lead to crime and incarceration (Mehmood et al., 2019), so even employing one person can have a snowball effect that benefits the overall community if it can mitigate the adverse outcomes of unemployment. While not explored in this study, mentorship from an entrepreneur could lead to inspiring others to become entrepreneurs and possibly have additional community entrepreneurial impact.

Also, this research suggests Black entrepreneurship-educated entrepreneurs are performing similarly to natural entrepreneurs when looking at business performance measures: firm gross

revenue, employee wage and owner wage. Having similar business performance may be based on societal and economic factors influencing Black entrepreneurs in ways entrepreneurship education may not be best suited to mitigate currently. Many entrepreneurs start businesses for reasons other than primarily maximizing their financial return (Wiklund et al., 2003). The result of this study aligns with that prior knowledge and confirms that studying entrepreneurship can ultimately lead to creating an impact beyond personal finances. Hopefully, this research inspires some Black students to seek entrepreneurship as a respectable, viable career (Kolvereid & Moen, 1997), and Black families modify the mantra of 'go to college to get a good job' to 'go to college to learn to create a job to impact Black communities.'

Additional Observations

While most of the natural entrepreneurs did not have business or entrepreneurship education specifically, they did have at least a bachelor's degree, as evidenced by 64 of the 68 respondents having at least a 4-year degree (Table 10). Further research will need to be conducted, but the degrees that the natural entrepreneur attained may have assisted in their entrepreneurial endeavors (ex., a computer science major starting a computer consulting company, an English major starting an advertising or PR firm, etc.) So, while they may not have had business or entrepreneurial collegiate knowledge, their college degree could have provided specific technical knowledge that aided in creating a business.

Theoretical Contributions

This research begins to moderately fill the gap in the literature researching and informing about Black people and entrepreneurship education. Instead of looking at Black college-age students and their entrepreneurial intentions (Miller et al., 2009), this research examines Black alums with a degree in entrepreneurship. It draws upon human capital theory to explore how the knowledge from that college degree is serving the former students in comparison to others without that knowledge where both groups are embarking on entrepreneurial endeavors.

This research adds to the literature focused on Black people and entrepreneurship. While some literature examining Black entrepreneurship chooses to compare Black entrepreneurs to White entrepreneurs (Fairlie & Robb, 2007), this research adds to the literature by comparing two distinct populations of Black entrepreneurs other than gender (Ede et al., 1998). The results of the entrepreneurship-educated entrepreneurs were not significantly different from that of the natural entrepreneurs, which adds to the collective literature regarding Black entrepreneurship performance.

This study also adds to the literature that discusses entrepreneurship as a path for economic development for Black communities (Bates, 2006). With the social impact of employment, employment length and mentoring results, there is an inference that entrepreneurship can be a pathway for economic growth toward financial equity for people in Black communities (Singh & Crump, 2007). The performance related to the social impact measures is supportive of the idea that some Black entrepreneurs enter into entrepreneurship for reasons other than only financial gain (Wiklund et al., 2003).

At a macro level, the study aids the literature in informing about the benefits of entrepreneurship education. It also adds to the bourgeoning individual entrepreneurship orientation (IEO) literature by exploring the effect of IEO as a covariate.

Practical Implications

This research demonstrated that entrepreneurship education could create a higher social impact for Black communities. Since Black entrepreneurs with entrepreneurship education can provide a more social impact on Black communities, local governments and colleges should undertake initiatives to create Black entrepreneurship-educated entrepreneurs, especially colleges in Black communities or with substantial Black populations. This knowledge could lead schools to market their entrepreneurship programs differently to target Black and other minority students.

Additionally, this research informs that entrepreneurship is a viable career option for Blacks in college. This can modify the discussion in Black communities about what major Black college-age students pursue, especially if they want to give back to their community but are unsure how to do it.

The results seem to imply Black entrepreneurship-educated entrepreneurs have a broader community social benefit impact. While not the specific subject of this research, it may get colleges and universities to examine their social entrepreneurship programs to ascertain if they can increase the community impact provided by entrepreneurship-educated entrepreneurs.

While the research did not demonstrate that entrepreneurship-educated entrepreneurs had a higher business performance than natural entrepreneurs, the results are not necessarily discouraging. The business performance, while not higher, was not statistically significantly

different, and exhibiting similar results as natural entrepreneurs in many cases is an enviable position to be in. Even if it's not higher, being on a comparable level as successful entrepreneurs is encouraging, especially factoring in Jang's (2013) research which informs that entrepreneurs can earn up to twenty-seven percent higher income than non-entrepreneurship majors. Entrepreneurship professors may themselves have to become entrepreneurial and innovative to address the need for an entrepreneurship pedagogy that provides higher business performance returns.

Limitations

It must be noted that after 4 months of extremely active data collection, less than three dozen Black entrepreneurship-educated alums completed filling out the survey instrument. With over 175 professors at over 150 schools contacted to assist with circulating the survey, significant effort was employed to find survey participants. While they do exist, the target population, relatively speaking, is still a small one. That is meant to provide context for the first limitation: the low number of overall respondents. Continuing this research with a larger sample may provide additional or possibly contrary insights.

The size of the survey may have impacted the number of respondents, as is envisioned by approximately 20 percent of the received surveys being blank or with only the first few questions filled out. A smaller survey may possibly yield higher respondent numbers. Entrepreneurs not wanting to share financial data, even in an anonymous survey, may also have limited respondents and hindered an accurate analysis. Several surveys focused on one or two dependent variables may offer keener incite.

Additionally, the study utilized the individual entrepreneurial orientation (IEO) construct and didn't explore other constructs that may have affected these particular outcomes. The research also used self-reported metrics for social impact and company performance, which might be biased. Additional performance measurements should be considered for future studies.

Future Research

I suggest the same study be done with White entrepreneurship-educated entrepreneurs to see if the results are statistically the same as Black entrepreneurship-educated entrepreneurs or if Black entrepreneurship-educated entrepreneurs match the overall demographic of Black entrepreneurs who are performing woefully lower than White entrepreneurs. This should also be done with Hispanic, Asian and other ethnic groups to fully understand if entrepreneurship education is having similar or different results across various demographics.

It opens up the question, if Black entrepreneurship-educated entrepreneurs do not function at a higher financial performance than non-entrepreneurship-educated entrepreneurs, why not and why should Blacks study entrepreneurship? Black entrepreneurs have much lower financial outcomes that White entrepreneurs (SBA, 2018). Are entrepreneurship-educated Black entrepreneurs maintaining that same trend, and if so, why? Why isn't education providing the theorized human capital (Martin et al., 2013) financial boost?

While the entrepreneurship-educated respondents are more difficult to sample, doing this study with two comparison groups may yield additional knowledge. Since most of the natural entrepreneurs had 4-year college degrees, they could be further divided into natural entrepreneurs with college degrees and those without. That would provide information on entrepreneurship education and also college education in general. Future studies can also look at the particular

elements of entrepreneurship education that enhance business success and societal impact. This might serve to enhance the design of entrepreneurship education programs and offer a better understanding of which components of entrepreneurship education are most effective.

If possible, a longitudinal study across a dozen or so unique profiled schools could yield a comprehensive dataset and impactful analysis. This would help to mitigate the data collection dilemma, and contextual data could be obtained. Also, unique pedagogy could be explored, and the knowledge of students' success from one pedagogy vis a vis another could be transformational. Extending that thought, the possibility of culturally relevant pedagogy (Ladson-Billings, 1995) for entrepreneurship is a fertile research area. Also, researching social entrepreneurship programs compared to traditional entrepreneurship programs may provide unique, actionable insights.

Conclusion

The present study aimed to investigate the effect of entrepreneurship education on business performance and social impact among Black entrepreneurs using a one-way MANCOVA. The results revealed that the entrepreneurship-educated group demonstrated a general trend toward higher social impact, as evidenced by a higher average number of Black employees, average Black employee employment length, and average mentor hours. Conversely, the natural entrepreneur group showed a general trend towards higher business performance, with higher firm gross revenue, employee wage, and owner wage. It also showed that the differences between the two groups were not statistically significant, including the covariate of individual entrepreneurial orientation.

These findings have led to the conclusion that while entrepreneurship education may be useful for encouraging social impact among Black entrepreneurs, it might not be sufficient to boost

company performance on its own, so these mixed results provide more questions. Entrepreneurship education can provide some benefits to Black entrepreneurs and Black communities. Employment is a primary factor in helping Black people combat poverty (Fairlie, 2002). If Black entrepreneurs are providing more and longer-term employment to Black people, as the research suggests, utilizing entrepreneurship for community development is a tact that local communities and governments should champion.

Finally, entrepreneurship pedagogy should be examined more to see if unique pedagogy has a more significant long-term impact. Despite these encouraging results, a number of restrictions must be addressed. A relatively limited sample of Black entrepreneurship-educated business owners is one factor that should be improved. Future studies should try to reproduce these findings on a broader scale to validate the impact on Black communities and understand how that relates to the impact in other communities.

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APPENDICES

Appendix A – Informed Consent Email

Great Day,

My name is Scorpio Rogers, and I'm a Ph.D. candidate at Worcester Polytechnical Institute (WPI), researching entrepreneurs.
The title of this study is: Entrepreneurship-educated Black entrepreneurs and their impacts provided to Black communities.

This research examines two groups, Black people who majored or minored in entrepreneurship in college (they do not have to be entrepreneurs currently) and entrepreneurs that started businesses with no or little formal college entrepreneurship or business education. The survey is almost entirely checkboxes and will take about 10 – 15 minutes to complete. Responses will help evaluate entrepreneurship education and the impact entrepreneurs bring to Black communities. For this research, it is essential all questions are answered. Your participation is very important for this research and is greatly appreciated. While the primary focus is on Black entrepreneurs, all entrepreneurs are encouraged to take this survey.

Your participation in the survey is entirely voluntary, and you can stop at any time. All responses are anonymous, and the names of respondents and their firms will not be collected. Reports of this data will only be done in aggregate, and no individual data will be reported. The WPI Institutional Review Board has approved this survey. Should you have any comments or questions, please feel free to contact me at SKRogers@wpi.edu. If possible, please forward this survey to 2 schoolmates or people you know that are studied entrepreneurship. That would be an immense help to this valuable research. Thank you in advance for your time, consideration, and contribution.

FYI – You can use the link or QR code to access the survey.

https://wpi.qualtrics.com/jfe/form/SV_9o7aANk8Tec1uJw

Have a fulfilling day.

Scorpio

Appendix B – Dissertation Survey

Dissertation Survey SR - 2210

Survey Flow

Block: This group of questions seeks to understand your education. (45 Questions)
Standard: These questions are looking at your individual entrepreneurial orientation (IEO) (11 Questions)
Standard: These final questions are for demographic information. (13 Questions)

EndSurvey:

Page Break

Start of Block: This group of questions seeks to understand your education.

A01 Great Day,

My name is Scorpio Rogers, and I'm a Ph.D. candidate at Worcester Polytechnical Institute (WPI), researching entrepreneurs.
The title of this study is: Entrepreneurship-educated Black entrepreneurs and their impacts provided to Black communities.

This research examines two groups of entrepreneurs, specifically entrepreneurs that majored or minored in entrepreneurship in college and entrepreneurs that started businesses with no or little formal college entrepreneurship or business education. While the primary focus is on Black entrepreneurs, all entrepreneurs are encouraged to take this survey.

Your participation in the survey is completely voluntary, and you can stop at any time. All responses are anonymous, and the names of respondents and their firms will not be collected. Reports of this data will only be done in aggregate, and no individual data will be reported. The WPI Institutional Review Board has approved this survey. Should you have any comments or questions, please feel free to contact me at SKRogers@wpi.edu.

Your participation is very important for this research and is greatly appreciated. Responses will help evaluate entrepreneurship education and the impact entrepreneurs bring to Black communities. The

survey is mostly checkboxes and will take about 15 - 20 minutes to complete. For this research, it is essential all questions are answered. Thank you in advance for your time, consideration, and contribution.

A0 These first set of questions seek to understand your entrepreneurial education (if any).

A1 What levels of education have you completed?

- ○ Less than high school (1)
- ○ High school graduate (2)
- ○ Some college (3)
- ○ 2 year degree (4)
- ○ 4 year degree (5)
- ○ Masters degree (6)
- ○ Doctorate or terminal degree (7)

Skip To: B0 If A1 = 1
Skip To: B0 If A1 = 2
Skip To: A5 If A1 = 3

A2 What year did you graduated from undergraduate?

8 (8)

▼ 2022 (1) ... Pre 1980 (44)

X→

A3 Was your undergraduate major in entrepreneurship?

- ○ Yes (1)
- ○ No (0)

X→

A4 Was your undergraduate minor in entrepreneurship?

- ○ Yes (1)
- ○ No (0)

X→

A5 At the time you attended undergraduate, did your school offer an entrepreneurship major?

- ○ Yes (1)
- ○ No (0)
- ○ Not sure (2)

X→

A6 At the time you attended undergraduate, did your school offer an entrepreneurship minor?

- ○ Yes (1)
- ○ No (0)
- ○ Not sure (2)

A7 If you did not major or minor in entrepreneurship what area was your major?

Click to select your major area (Choose 1 if double major) (1)

▼ I was an entrepreneurship major or minor (1) ... Not Sure / Other ~ (38)

B0 The next set of questions look at your entrepreneurial firm.

X→

B1 You are, alone or with others, currently the owner of a company you help manage, self-employed, or selling any goods or services to others?

- ○ Yes (1)
- ○ No (0)

X→

B2 Have you, in the past 12 months, sold, shut down, discontinued or quit a business you owned and managed, any form of self-employment, or selling goods or services to anyone?

- ○ Yes (1)
- ○ No (0)

B3 How many businesses have you started after undergraduate graduation? (If you didn't graduate from undergraduate, how many businesses have you started since attending high school.)

1 (1)

▼ 0 (1) ... 10+ (11)

B4 What is the longest number of years that you have owned any one business?

4 (4)

▼ 0 (1) ... 26+ (27)

B5 When answering the next set of questions, please focus on the business that you currently own. If you own more than one business please use the business with the most employees as your primary business.
If you currently no longer own a business, but previously owned a business(es), please answer the questions based on the business that you previously owned that had the greatest profit (or least loss if none had a profit).

Please answer all questions with best estimates if exact amounts are not available.

B6 What was the year this primary business started?

3 (3)

▼ 2022 (1) ... Pre 1980 (44)

B7 What state is (was) this business started?

Select business state (6)

▼ AL (1) ... WY ~ Wyoming (100)

B8 What legal form is (was) this business

- ○ Sole Proprietorship (1)
- ○ Partnership (2)
- ○ C Corporation (3)
- ○ S Corporation (4)
- ○ Limited Liability Company (LLC) (5)
- ○ B Corporation (6)
- ○ No Legal Form (0)
- ○ Other (7)
- ○ Don't know (8)

B9 What industry is (was) this business in?

Click to select an industry (8)

▼ Accommodation and Food Services (1) ... Other Industry Not Listed Above ~ 0 (38)

X→

B10 Do you consider this venture to be a social enterprise, meaning it has a primary mission to provide a type of social / societal benefit in addition to making a profit?

- ○ Yes (1)
- ○ No (0)
- ○ Not Sure (2)

B11 How many years did it take until your business was profitable? (If firm is not yet profitable, please select zero.)

1 (1)

▼ 0 (1) ... 10+ (11)

B12 What was the business gross revenue in 2019, (the last non COVID-19 year)? Please estimate if needed.

- ○ Less than $25,000 (1)
- ○ $25,000 - $49,999 (2)
- ○ $50,000 - $99,999 (3)
- ○ $100,000 - $249,999 (4)
- ○ $250,000 - $499,999 (5)
- ○ $500,000 - $999,999 (6)
- ○ $1 million - $4.99 million (7)
- ○ $5 million - $9.99 million (8)
- ○ $10 million and greater (9)

Carry Forward All Choices - Displayed & Hidden from "B12"

X→

B13 What was the business gross revenue in 2020, (the first COVID-19 year)? Please estimate if needed.

- ○ Less than $25,000 (1)
- ○ $25,000 - $49,999 (2)
- ○ $50,000 - $99,999 (3)
- ○ $100,000 - $249,999 (4)
- ○ $250,000 - $499,999 (5)
- ○ $500,000 - $999,999 (6)
- ○ $1 million - $4.99 million (7)
- ○ $5 million - $9.99 million (8)
- ○ $10 million and greater (9)

Carry Forward All Choices - Displayed & Hidden from "B13"

X→

B14 What was the business gross revenue in 2021, (the second COVID-19 year)? Please estimate if needed.

- ○ Less than $25,000 (1)
- ○ $25,000 - $49,999 (2)
- ○ $50,000 - $99,999 (3)
- ○ $100,000 - $249,999 (4)
- ○ $250,000 - $499,999 (5)
- ○ $500,000 - $999,999 (6)
- ○ $1 million - $4.99 million (7)
- ○ $5 million - $9.99 million (8)
- ○ $10 million and greater (9)

C1 How many total employees (including the owner) did the business employ?

	in 2019 (1)	in 2020 (2)	in 2021 (3)
Total Employees (1)			

C2 How many Black employees (including the owner) did the business employ? (If zero please add '0')

	Black employees (1)
in 2019 (1)	
in 2020 (2)	
in 2021 (3)	

C3 Currently what was the average length of employment in years for Black employees with the firm?

1 (1)

▼ 0 (1) ... 26+ (27)

C4 Workplace mentoring is when a senior, experienced employee gives career advice and support to younger, earlier career employees.

Currently, how many hours annually do you spend mentoring Black employees during working hours in your firm?

- ○ Zero (0)
- ○ 1 to 5 (1)
- ○ 6 to 10 (2)
- ○ 11 to 15 (3)
- ○ 16 to 20 (4)
- ○ 21 or more (5)

C5 Currently, how many hours do you spend monthly mentoring other Black-owned enterprises?

- ○ Zero (0)
- ○ 1 to 5 (1)
- ○ 6 to 10 (2)
- ○ 11 to 15 (3)
- ○ 16 to 20 (4)
- ○ 21 or more (5)

C6 What was the average annual wage of the lowest paid Black employees (excluding owners)? (If no black employees, please enter zero '0'.)

	in 2019 (1)	in 2020 (2)	in 2021 (3)
lowest annual wage Black employees (1)			

C7 What was the average annual wage of the highest paid Black employees (excluding owners)? (If no black employees, please enter zero '0'.)

	in 2019 (1)	in 2020 (2)	in 2021 (3)
highest annual wage Black employees (1)			

C8 What was the owners average annual wage? (If zero, please enter '0'.)

	in 2019 (1)	in 2020 (2)	in 2021 (3)
highest annual wage Black employees (1)			

D1 Is your business located in a primarily Black populated area?

- Yes (1)
- No (0)
- Online (2)
- Not Sure (3)

D2 Are you customers primarily Black?

- Yes (1)
- No (0)
- Not Sure (2)

X→

D3 How important to you (the entrepreneur/business owner) is the goal of contributing to the Black community?

- Extremely important (5)
- Very important (4)
- Moderately important (3)
- Slightly important (2)
- Not at all important (1)

D4 Did you start the business because you saw an opportunity or because you felt you had no other viable employment options?

- Saw opportunity (1)
- Lack of employment (2)
- Other (3)

X→

E1 Have you ever participated in the following type of business support activity (check all that apply)?

- [ ] No, have not participated in an incubator, accelerator, or other similar program (0)
- [ ] Incubator (a non-equity seeking organization that helps startup companies and/or individual entrepreneurs/business owners develop their businesses by providing a range of services) (1)
- [ ] Pre-accelerator (an organization that helps develop companies with fast, high-growth potential typically done in a cohort of technology firms, which may or may not take equity ownership) (2)
- [ ] Accelerator (an organization that helps develop companies with fast, high-growth potential typically done in a cohort of technology firms, which take an equity ownership) (3)
- [ ] University Program (university organization that helps startup companies and/or individual student entrepreneurs/business owners develop their businesses by providing a range of services) (4)
- [ ] Other (5)

X→

E2 An 'angel' investor is a wealthy person, typically previously unknown to the entrepreneur, that invests their own money in the startup or growth of a business. Angels usually require a percentage of ownership in the business for their investment.
Have you received any angel investment money?

- ○ Yes (1)
- ○ No (0)

Display This Question:

If E2 = 1

E3 How much angel investment money have you received?

- ○ $1,000 - $20,000 (1)
- ○ $20,001 - $50,000 (2)
- ○ $50,001 - $100,000 (3)
- ○ $100,001 - $500,000 (4)
- ○ $500,001 - $1,000,000 (5)
- ○ $1,000,001 - $5,000,000 (6)
- ○ More than $5,000,000 (7)

Display This Question:

If E2 = 1

E4 How much equity (percent of business ownership) did you exchange for angel investment?

- Zero % (0)
- 1% - 10% (1)
- 11% - 20% (2)
- 21% - 30% (3)
- 31% - 40% (4)
- 41% - 50% (5)
- More than 50% (6)

X→

E5 Venture capital (VC) is an investment (usually several million dollars) from a firm (or individual) into a business that shows a potential of exceptionally high returns normally within 7 years. VC investments are always for a percentage of equity in the business.
Have you received any venture capital investment money?

- Yes (1)
- No (0)

Display This Question:

If E5 = 1

E6 How much venture capital investment money have you received?

- ○ Less than $1,000,000 (1)
- ○ $1,000,000 - $5,000,000 (2)
- ○ $5,000,001 - $10,000,000 (3)
- ○ $10,000,001 - $20,000,000 (4)
- ○ $20,000,001 - $50,000,000 (5)
- ○ More than $50,000,000 (6)

Display This Question:

If E5 = 1

X→

E7 How much equity (percent of business ownership) did you exchange for venture capital investment?

- ○ Zero % (0)
- ○ 1% - 10% (1)
- ○ 11% - 20% (2)
- ○ 21% - 30% (3)
- ○ 31% - 40% (4)
- ○ 41% - 50% (5)
- ○ More than 50% (6)

X→

F1 Are you currently trying to start or currently owning and managing a business that has a particularly social, community or environmental objective? This might include providing services or training to socially deprived or disabled persons, using profits for socially-oriented purposes, organizing self-help groups for community action, supporting 'green' environment projects, etc.

- ○ Yes, currently trying to start (1)
- ○ Yes, currently owning-managing (2)
- ○ Yes, both currently trying to start one and owning-managing another (3)
- ○ No (0)
- ○ Don't know (4)
- ○ Refuse to answer (5)

F2 Organizations may have goals according to the ability to generate economic, societal, and environmental value. For ex.
Firm A may allocate 80 percent for economic value, 10 percent for societal value, and 10 percent for environmental value, or
Firm B may allocate 10 percent for economic value, 60 percent for societal value, and 30 percent for environmental value.
Please allocate a total of 100 percent across these three categories as it pertains to your goals. (A

category can have a zero percent value.)

	Scale Percent 1 to 100 (1)
Economic value (1)	
Societal value (2)	
Environmental value (3)	
Total	

End of Block: This group of questions seeks to understand your education.

Start of Block: These questions are looking at your individual entrepreneurial orientation (IEO)

G0 The next few questions are inquiring about your individual entrepreneurial orientation (IEO).

G1 I like to take bold action by venturing into the unknown.

- Strongly Disagree (1)
- Disagree (2)
- Neither Disagree / Nor Agree (3)
- Agree (4)
- Strongly Agree (5)

X→

G2 I am willing to invest a lot of time and/or money on something that might yield a high return.

- Strongly Disagree (1)
- Disagree (2)
- Neither Disagree / Nor Agree (3)
- Agree (4)
- Strongly Agree (5)

G3 I tend to act "boldly" in situations where risk is involved.

- ○ Strongly Disagree (1)
- ○ Disagree (2)
- ○ Neither Disagree / Nor Agree (3)
- ○ Agree (4)
- ○ Strongly Agree (5)

G4 I often like to try new and unusual activities that are not typical but not necessarily risky.

- ○ Strongly Disagree (1)
- ○ Disagree (2)
- ○ Neither Disagree / Nor Agree (3)
- ○ Agree (4)
- ○ Strongly Agree (5)

G5 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.

- ○ Strongly Disagree (1)
- ○ Disagree (2)
- ○ Neither Disagree / Nor Agree (3)
- ○ Agree (4)
- ○ Strongly Agree (5)

G6 I prefer to try my own unique way when learning new things rather than doing it like everyone else does.

- ○ Strongly Disagree (1)
- ○ Disagree (2)
- ○ Neither Disagree / Nor Agree (3)
- ○ Agree (4)
- ○ Strongly Agree (5)

G7 I favor experimentation and original approaches to problem-solving rather than using methods others generally use for solving their problems

- ○ Strongly Disagree (1)
- ○ Disagree (2)
- ○ Neither Disagree / Nor Agree (3)
- ○ Agree (4)
- ○ Strongly Agree (5)

G8 I usually act in anticipation of future problems, needs, or changes.

- ○ Strongly Disagree (1)
- ○ Disagree (2)
- ○ Neither Disagree / Nor Agree (3)
- ○ Agree (4)
- ○ Strongly Agree (5)

G9 I tend to plan ahead on projects.

- ○ Strongly Disagree (1)
- ○ Disagree (2)
- ○ Neither Disagree / Nor Agree (3)
- ○ Agree (4)
- ○ Strongly Agree (5)

G10 I prefer to “step-up” and get things going on projects rather than sit and wait for someone else to do it.

- ○ Strongly Disagree (1)
- ○ Disagree (2)
- ○ Neither Disagree / Nor Agree (3)
- ○ Agree (4)
- ○ Strongly Agree (5)

End of Block: These questions are looking at your individual entrepreneurial orientation (IEO)

Start of Block: These final questions are for demographic information.

H0 These final questions are for demographic information.

X→

H1 What is your age?

- ○ 18 - 24 (1)
- ○ 25 - 34 (2)
- ○ 35 - 44 (3)
- ○ 45 - 54 (4)
- ○ 55 - 64 (5)
- ○ 65 - 74 (6)
- ○ 75 - 84 (7)
- ○ 85 or older (8)

H2 What is your race? (press ctrl key and click to select more than one)

- [ ] Black or African American (1)
- [ ] Hispanic non-white (2)
- [ ] White (3)
- [ ] Asian (4)
- [ ] American Indian or Alaska Native (5)
- [ ] Native Hawaiian or Pacific Islander (6)
- [ ] 2 or more races (7)
- [ ] Other (8)
- [ ] Choose not to say (9)

H3 Gender: How do you identify?

- ○ Male (1)
- ○ Female (2)
- ○ Non-binary / third gender (3)
- ○ Choose not to say (4)
- ○ Prefer to Self-describe below (5)

Display This Question:

If H3 = 5

H3b Gender Self-description

_____

H4 Did either of your parents (guardians who raised you) own their own business?

- Yes (1)
- No (2)
- Not Sure (3)

H5 Do you consider where you grew up to be a Black community?

- Yes (1)
- No (2)
- I grew up in both Black and non Black communities (3)
- Don't know (4)
- Choose not to answer (5)

H6 If you attended college, it was

- Public (1)
- Private (2)
- Not Sure (3)

H7 If you attended college, was it a

- (ANNH) Alaska Native & Native Hawaiian Serving Institution (1)
- AANAPISI (Asian American & Native American Pacific Islander-Serving Institution) (2)
- HBCU (Historically Black College or University) (3)
- HSI (Hispanic Serving Institution) (4)
- NASNTI (Native American Serving Nontribal Institution) (5)
- PBI (Predominantly Black Institution - Non HBCU) (6)
- PWI (Predominantly White Institution) (7)
- TCU (Tribal College or University) (8)
- Not Sure (9)

H8 If you attended college, what state is your college located?

Select college state (1)

▼ AL (1) ... WY ~ Wyoming (100)

H9 If you attended college, what undergraduate school did you graduate from?

_____

H10 This survey is anonymous; however, if you'd like to be contacted for future research on entrepreneurs, please select yes. You will be provided a link which will allow you to provide your contact information. These survey answers will remain anonymous and will not be associated to your contact information.

- No thank you. (1)
- Yes, I'd like to be contacted. (4)

Skip To: End of Survey If H10 = 1

Q67 Thank you for choosing to be contacted. Please click the link below to go to an alternate survey to provide your contact information.
Note: Your contact information will not be associated with these survey answers.

Contact Info Link:

End of Block: These final questions are for demographic information.

Appendix C – Entrepreneur Contact Information Survey

Entrepreneur Contact Info

Survey Flow

Block: Default Question Block (6 Questions)

Page Break

Start of Block: Default Question Block

Q0 Thank you for choosing to be contacted. This contact information will only be used for possible future research on entrepreneurs. At that time, participation will be totally voluntary.

Note: The answers to the survey you just took will remain anonymous and will not be associated to your contact information.

Q1 First Name

_____

Q2 Last Name

_____

Q3 Email Address

_____

Q4 Phone Number

_____

Q5 Additional Comment

_____

End of Block: Default Question Block

APPENDIX D – Schools of Respondents

Assumption University	1	Hampton University	4	Rowan University	1
Atlanta Metropolitan College and Devry University	1	Howard University	1	Sacred Heart University	1
Babson College	1	Jackson State University	2	St Catherine High	1
Ball State University	3	Johnson and Wales University	1	SUNY Delhi	1
Boston University	1	Kennesaw State University	1	The Baptist College of Florida	1
Bradley University	1	Kettering University	1	The ETSU College of Nursing	1
Cheyney State University of Pennsylvania	1	Livingston College, Rutgers University	1	Umass-Amherst	1
City University of Seattle	1	Louisiana State University	1	University of Hartford	1
Columbia University	1	McKendree University	1	University of Minnesota	1
Dartmouth College	2	Mercy College	9	University of North Carolina at Greensboro	1
Drake University	1	Middle Tennessee State University	2	University of St. Thomas - Houston	1
Florida Atlantic University	1	Monroe College	1	Worcester State University	1
Fordham University	1	Muma College of Business	1	Yale University	1
Georgia Institute of Technology	1	Pace University	1	School not provided	9
Georgia State University	1	Philander Smith	1	Total (43 Schools provided)	68

APPENDIX E – HBCU Schools with Entrepreneurship Majors/Minors/Certificates

School	Major / Minor / Certificate	2 / 4 Year	Public / Private	Student Population	Major Name	Type of Campus
Alabama A&M University	Major	4	Public	5090	Entrepreneurship	Residential
Allen University	Major	4	Private	656	Bus - Entrepreneurship conc	Residential
Arkansas Baptist College	Major	4	Private	468	Bus/Admin - Entrepreneurship conc	Residential
Barber-Scotia College	Major	4	Private	120	Business Entrepreneurship	Commuter
Bluefield State University	Major	4	Public	1231	Bus/Admin - Entrepreneurship	Commuter
Bowie State University	Major	4	Public	6182	ENTR & Small Bus MGMT conc	Commuter
Central State University	Major	4	Public	6017	Entrepreneurship conc	Residential
Clark Atlanta University	Major	4	Private	3920	Entrepreneurial MGMT	Residential
Fayetteville State University	Major	4	Public	6551	Entrepreneurship conc	Commuter
Hampton University	Major	4	Private	4293	Entrepreneurship	Residential
Howard University	Major	4	Private	9399	(MGMT) Entrepreneurship conc	Residential
Jackson State University	Major	4	Public	7020	Entrepreneurship	Commuter
Morgan State University	Major	4	Public	7763	Entrepreneurship	Commuter
NC Central University	Major	4	Public	5476	Bus/Admin - Entrepreneurship conc	Commuter
Norfolk State University	Major	4	Public	4977	Bus - Entrepreneurship conc	Commuter
Philander Smith College	Major	4	Private	996	Bus Admin - Entrepreneurship conc	Residential
Simmons College of Kentucky	Major	4	Private	139	Business Entrepreneurship	Commuter
Virginia Union University	Major	4	Private	1140	Entrepreneur Management	Residential
Bennett College	Minor	4	Private	232	Entrepreneurship	Residential
Delaware State University	Minor	4	Public	3881	Entrepreneurship	Residential
Lincoln University	Minor	4	Public	1763	Entrepreneurial Studies	Residential
Savannah State University	Minor	4	Public	3006	Entrepreneurship	Residential
Tennessee State University	Minor	4	Public	5,855	Entrepreneurial Business	Residential
Morris Brown College	Certificate	4	Private	240	Business Entrepreneurship	Commuter
NC A&T State University	STEM Certificate	4	Public	10798	STEM Entrepreneurship cert	Residential
Langston University	Masters	4	Public	1894	Entrepreneurial Studies MBA	Residential
SC State University	Masters	4	Public	2063	Entrepreneurship conc	Residential
University of the DC	PhD	4	Public	3096	Urban Leadership and ENTRE	Commuter
Coahoma CC	Major	2	Public	1615	Entrepreneurship	Commuter
Denmark Technical College	Major	2	Public	281	ENTR/Small Business MGMT - cert	Residential
Shorter College	Major	2	Private	223	Entrepreneurial Studies	Commuter
Trenholm State CC	Major	2	Public	1335	Bus/Admin Entrepreneurship	Commuter