Influences of Health and Wellness Coaching Students' Entrepreneurial Intention:

A Correlational Study

by

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Abstract

Increasing entrepreneurial roles among health workers signifies a need for entrepreneurial competencies. Development of entrepreneurial competencies is sometimes inadequately addressed in health training program curricula, which requires knowledge of student entrepreneurial characteristics to be sufficiently developed. The problem was the entrepreneurial characteristics of health and wellness coaching students were unknown. This gap in knowledge of student entrepreneurial characteristics prevents faculty from tailoring entrepreneurial education to student characteristics and needs. The purpose of this research was to document the entrepreneurial intention of health and wellness coaching students and determine the influence of gender, age, and individual entrepreneurial orientation of students to aid faculty development of effective entrepreneurial education. This quantitative correlational research was framed by the theory of planned behavior to determine the degree to which gender, age, and individual entrepreneurial orientation, individually and collectively, influenced the entrepreneurial intention of students in health and wellness coach training programs. Data were collected through an Internet-based survey using a total population sample of health and wellness coaching students ($n = 63$). Analyses showed 69.8% of students had entrepreneurial intention. Multiple regression was used to investigate whether gender, age, and individual entrepreneurial orientation influenced student entrepreneurial intention. Individually, age had a significant, positive influence on entrepreneurial intention; gender and individual entrepreneurial orientation had no influence. Collectively, gender, age, and individual entrepreneurial orientation did not influence entrepreneurial intention. The substantial proportion of health and wellness coaching students with entrepreneurial intention showed a need for coach training programs to offer entrepreneurial education tailored to suit student entrepreneurial characteristics.

## Dedication

To my parents, Terry and Helga, who were not here to see me finish. Thank you for loving me. I miss you both every day.

Acknowledgments

To my partner, for committing to walk alongside me on this journey. Chris, you have my gratitude for providing the space for me to complete the journey. I know the journey was, at times, difficult for both of us, and I am grateful we made it through. To my cherished family and friends, thank you for enduring my distraction and unavailability without complaint.

To my professional colleagues, who provided unwavering emotional, academic, and instrumental support, acted as sounding boards, critiqued my work, gave practical advice, and helped sustain motivation, thank you for everything. Know when you need me to support you, I will reciprocate and pay it forward.

To my dissertation chair, dissertation committee member, faculty, and all the students I have interacted with along the way, thank you. Each of you contributed to my journey.

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Chapter 1: Introduction

Health and wellness coaching is a rapidly growing field proven effective in addressing public health concerns such as chronic health conditions like diabetes, hypertension, and hyperlipidemia (Hale & Giese, 2017). Almost 40% of health and wellness coaches are self-employed (Wolever, Jordan, Lawson, & Moore, 2016). The study of entrepreneurial intention (EI) focuses on determining the factors influencing the choice to be self-employed or start a business (Liñán & Fayolle, 2015). Understanding the factors influencing the choice to be self-employed is necessary to develop effective entrepreneurial education (Pruett & Şeşen, 2017).

Increasingly, health and allied health workers have entrepreneurial roles, leading to the need for business skills and entrepreneurial competencies (Arnaert, Mills, Bruno, & Ponzoni, 2018; Dehghanzadeh et al., 2016). Development of entrepreneurial competencies is sometimes inadequately addressed in health-related training programs (Arnaert et al., 2018; Schwab, 2016). Research into the EI of health professionals is needed (Dehghanzadeh et al., 2016; Wall, 2015). Potential benefits of EI research include informing the development of entrepreneurial education within health training programs (Pruett & Şeşen, 2017) and the incorporation of relevant entrepreneurial education within training standards set by national certification programs. An overview of the research is presented by describing the background of the study, a statement of the problem, and the purpose of the study. Significance of the study, research questions, research hypotheses, theoretical framework, the definition of terms, assumptions, scope and delimitations, and limitations of the research are discussed.

**Background of the Problem**

A proliferation of academic and private industry coach education and training programs have been created to meet the growing demand for health and wellness coach practitioners

(Jordan, Wolever, Lawson, & Moore, 2015). Nascency of the health and wellness coaching field has driven efforts to professionalize the field through the creation of the National Board Certification for Health and Wellness Coaching (NBC-HWC), focusing training programs on developing technical competencies and meeting national certification eligibility requirements (Kreisberg & Marra, 2017; Wolever et al., 2016). Nearly 40% of health and wellness coaches are self-employed, and health and wellness coaches working for an organization may have a separate independent practice (Wolever et al., 2016). Self-employment and establishing a private health and wellness coaching practice come with a steep learning curve requiring entrepreneurial competencies (Schwab, 2016; Wall, 2015). Entrepreneurial competencies can be learned through entrepreneurial education (Mandel & Noyes, 2016; Yusoff, Ahmad, & Halim, 2016).

The development of entrepreneurial education content requires knowledge of student characteristics such as sociodemographic background, individual entrepreneurial orientation (IEO), and level of EI  (Pruett & Şeşen, 2017). This knowledge enables the faculty to understand the demand for entrepreneurial education and to tailor pedagogy to student characteristics and needs. EI research identifies factors influencing the decision to become self-employed (Liñán & Fayolle, 2015) and informs the development of entrepreneurial education (Pruett & Şeşen, 2017). Described as an individual's inclination to become self-employed, EI is considered a reliable predictor of entrepreneurial behavior (Koe, 2016). Much of the EI research uses the theory of planned behavior (TPB) as a framework to predict factors influencing EI (Lortie & Castogiovanni, 2015). Azjen's (1991) TPB relies on three explanatory personal-level variables (i.e., attitude toward behavior, subjective norms, and perceived behavioral control) to predict EI. Other factors influencing EI, such as gender, age, and IEO, have been reported in the research (Lortie & Castogiovanni, 2015).

## Statement of the Problem

Individually, the effects of gender, age, and IEO on EI in college students are known (Liñán & Rodríguez-Cohard, 2015). EI can vary by educational field of study (Peprah, Afoakwah, & Koomson, 2015), and much of the EI research focuses on business students (Mutlutürk & Mardikyan, 2018). Little research has been conducted on the EI of healthcare workers or students (Marques, Valente, & Lages, 2018; Wall, 2015). How gender, age, and IEO work together to influence EI is unknown to the health and wellness coaching field of study and in general (Koe, 2016). The sociodemographic characteristics of health and wellness coaching students, the students' EIs (i.e., interest in self-employment) and orientations, and entrepreneurial education support are unknown (Sforzo et al., 2017).

Health and allied health professionals who have entrepreneurial roles or are self-employed need entrepreneurial abilities to succeed in business proprietorship (Arnaert et al., 2018). Entrepreneurial abilities can be learned through entrepreneurial education (Mandel & Noyes, 2016; Yusoff et al., 2016). Arnaert et al. (2018) reported a gap in entrepreneurial education for nurses. Any comprehensive education program for health and allied health professionals should include entrepreneurial education to support the advancement of the field through entrepreneurial roles (Arnaert et al., 2018). The development of effective entrepreneurial education content requires knowledge of student characteristics such as sociodemographic background, level of EI, and IEO (Pruett & Şeşen, 2017). A need for developing contextually responsive entrepreneurial education within health and allied health fields exists (Dehghanzadeh et al., 2016). Knowing more about the sociodemographic background of health and wellness coaching students, the students' EI, and how gender, age, and IEO influence EI in this population

can demonstrate the need for and support the development of effective entrepreneurial education (Pruett & Şeşen, 2017).

The EI of college students and the individual effects of gender, age, and IEO on EI are known (Liñán & Rodríguez-Cohard, 2015). Sociodemographic characteristics of health and wellness coaching students, the proportion who intend to become self-employed after graduation, and how gender, age, and IEO affect EI in this population is unknown (Koe, 2016; Sforzo et al., 2017). This research addressed gaps in the literature by providing student sociodemographic information, documenting the EI of health and wellness coaching students, and determining the influence of gender, age, and IEO on students' EI. These contributions to the literature are essential in defining the health and wellness coaching student population and the characteristics likely to impact coach practitioners' career choices.

## Purpose of the Study

The purpose of this quantitative research was to document the EI of health and wellness coaching students and determine the degree of influence by gender, age, and IEO on student EI because little was known about health and wellness coaching students' EI (Sforzo et al., 2017). This research is necessary to aid faculty in health and wellness coach training programs to develop effective entrepreneurial education content (Pruett & Şeşen, 2017). To accomplish the research objectives, quantitative correlational design was employed, using EI as the criterion variable and gender, age, and IEO as predictor variables. Ajzen's (1991) TPB was the theoretical framework used to determine how gender, age, and IEO influenced EI.

Documenting the proportion of health and wellness coaching students intending to become self-employed in the field and establishing the relationship between EI and gender, age, and IEO was the goal of the research. Three objectives proceed from the research goal. The first

objective was to inform health and wellness coach training program faculty about student characteristics, which can be used to assess how the program is meeting the entrepreneurial education needs of the students or to aid in curriculum development. A second objective was to increase student awareness of IEO, which could enable students to discern how effectively the health and wellness coach training program meets entrepreneurial education needs (Hsu et al., 2019). The third objective was to extend EI research to the health and wellness coaching student population. This research made three contributions to the literature by documenting health and wellness coaching student characteristics; extending what is known about the relationship between IEO and EI to a new population; and adding new evidence about the influence of gender, age, and IEO on EI.

## Significance of the Study

Little of the health and wellness coaching research has focused on the student population, and the EI of health and wellness coaching students is unknown (Sforzo et al., 2017). This research provides student demographic information, documents the EI of health and wellness coaching students, and determines the influence of gender, age, and IEO on students' EI. Knowing the proportion of health and wellness coaching students intending to enter private practice establishes the level of need for entrepreneurial education in program curricula. Understanding what influences gender, age, and IEO exert on students' EI aids the development of effective entrepreneurial education content (Pruett & Şeşen, 2017).

Understanding the relationships among gender, age, IEO, and EI and knowing the level of need for entrepreneurial education in health and wellness coach training programs can help faculty develop entrepreneurial education content responsive to students of the institutions and prioritize curriculum change efforts. Students' awareness of IEO and EI can be used to evaluate

the robustness of training programs and provide personal insight into the suitability of the intended career path. The research community can benefit from the extension of EI research and theory to an additional field of study, which increases the diversity of fields beyond business programs (Mutlutürk & Mardikyan, 2018). Validation of the IEO scale with the health and wellness coaching student population strengthens evidence of the scale's usefulness, validity, and reliability (Bolton & Lane, 2012). Examination of the extent to which gender, age, and IEO, together, influence EI extends the entrepreneurship research in a new direction, which can be used as a basis for further investigation.

The results of the research could inform training standards set by national certification programs to ensure basic entrepreneurial competencies are developed in addition to practitioner skills. Ensuring future health and wellness coaches have the skills to successfully enter self-employment could increase the impact the profession has on public health from increased access to health support services and sustained industry growth. Health and wellness coaching can improve chronic disease outcomes and has the potential to lower healthcare costs (Hale & Giese, 2017).

## Research Questions

The research question examined the relationship between gender, age, IEO, and EI in health and wellness coaching students. Results of the examination produced knowledge about the EI of the health and wellness coaching student population. To accomplish the intent to document the EI of health and wellness coaching students and determine the influence of gender, age, and IEO of students, the collection of data for this quantitative research was guided by the following research question:

Research question: To what degree do gender, age, and IEO, individually and collectively, influence the EI of students in health and wellness coach training programs?

**Research Hypotheses**

The hypotheses for the research question follow:

$H1_0$: Gender, age, and IEO, individually and collectively, do not influence the EI of students in health and wellness coach training programs.

$H1_a$: Gender, age, and IEO, individually and collectively, influence the EI of students in health and wellness coach training programs.

**Theoretical Framework**

The TPB (Ajzen, 1991) claims the intention to perform a behavior can be explained and predicted by three antecedents, personal attitudes (PA) toward the behavior, subjective norms (SN), and perceived behavioral control (PBC). According to Ajzen, PA is the degree to which an individual favors the given behavior; SN is the degree to which an individual perceives social pressure from close ties to perform the behavior, and PBC is the degree to which the level of difficulty in performing the behavior is perceived, which is informed by experience and anticipation of the future. Applied to entrepreneurship, TPB can determine factors influencing intention to become self-employed (i.e., EI; Liñán & Fayolle, 2015) and subsequent behavior (Liñán & Rodríguez-Cohard, 2015; Shirokova, Osiyevskyy, & Bogatyreva, 2016).

Entrepreneurship research has extended the TPB to investigate additional antecedents of EI (Entrialgo & Iglesias, 2016; Lortie & Castogiovanni, 2015). Gender, age, and IEO factors may influence EI (Bolton & Lane, 2012; Minola, Criaco, & Obschonka, 2016; Robledo, Arán, Martin-Sanchez, & Molina, 2015). Within TPB, gender, age, and IEO could be considered antecedents of PA, SN, and PBC, which could indirectly predict EI, or gender, age, and IEO

could be considered direct antecedents of EI (Lortie & Castogiovanni, 2015). The conceptual

framework guiding this research considers gender, age, and IEO as direct antecedents of EI. A

literature review elaborates on the relationships between TPB antecedents within

entrepreneurship research and the conceptual framework guiding this research.

## Definitions of Terms

Definitions are provided for the criterion and predictor variables. Further definitions of

terms related to the theoretical framework are included. Terms used in reference to professional

certification are defined.

*Age (predictor variable):* The number of years a participant has lived at the time of

instrument completion (Minola et al., 2016).

*Entrepreneurial intention (criterion variable):* A student's intention to practice as a self-

employed health and wellness coach at any point after training program completion (Lüthje &

Franke, 2003).

*Gender (predictor variable):* Participant's self-identification as female or male, which

may be interpreted by the participant as biological sex or gender identity (Goktan & Gupta,

2015).

*Health and wellness coaching student:* A student enrolled in or having completed within

12 months of instrument completion, a Health and Wellness Coach training program approved

by the National Board for Health and Wellness Coaching (NBHWC, n.d.).

*Individual entrepreneurial orientation (predictor variable):* The level of an individual's

pro-entrepreneurial characteristics and attitudes influencing the intention to engage in

entrepreneurship, which includes innovativeness, proactiveness, and risk-taking (Koe, 2016).

*Innovativeness (INV):* A dimension of the IEO scale, reflecting an individual's ability to generate ideas resulting in new processes, products, or services (Koe, 2016).

*National Board for Health and Wellness Coaching (NBHWC):* A professional organization with national health and wellness coaching standards and offering health and wellness coach certification (NBHWC, n.d.).

*National Board Certification for Health and Wellness Coaching (NBC-HWC):* A health and wellness coach professional certification offered by the NBHWC (n.d.).

*Personal attitude (PA):* An antecedent of intention in the TPB, reflecting the degree to which an individual favors the given behavior (Ajzen, 1991).

*Perceived behavioral control (PBC):* An antecedent of intention in the TPB reflecting the degree to which the level of difficulty in performing the behavior is perceived, which is informed by experience and anticipation of the future (Ajzen, 1991).

*Proactiveness (PRO):* A dimension of the IEO scale, reflecting an individual's ability to actively seek business opportunities (Koe, 2016).

*Subjective norms (SN):* An antecedent of intention in the TPB reflecting the degree to which an individual perceives social pressure from close ties to perform the behavior (Ajzen, 1991).

*Risk-taking (RSK):* A dimension of the IEO scale reflecting the propensity to engage in risk related to entrepreneurial activity (Koe, 2016).

*Theory of planned behavior (TPB):* The TPB suggests the intention to perform a behavior can be explained and predicted by PA toward the behavior, SN, and PBC, which can determine the factors influencing the intention to become self-employed (Liñán & Fayolle, 2015).

**Assumptions**

Assumptions are elements believed to be necessary to conduct research but which cannot be proven (Simon & Goes, 2013). This research involved the collection of electronic survey data from the target population for hypothesis testing. Several assumptions were made about the population and data collection method.

Because direct access to the target population was not possible, the study site sent recruitment emails to a correct and complete list of the target population; valid email addresses were assumed. An assumption about the population including a sufficient diversity of gender to support intended statistical analyses was made because predicting future student enrollment demographic characteristics was not possible. Survey recruitment relied on email delivery of the electronic survey. Survey invitations were not blocked by a spam filter and reached the intended recipients was assumed. The research relied on self-reported information. Participation in the survey was voluntary and anonymous; survey respondents were assumed to have answered truthfully and well (Robertson, Tran, Lewark, & Epstein, 2018).

**Scope and Delimitations**

Scope refers to boundaries within which a study operates, and delimitations are limitations in the scope of the study, which are researcher-controlled (Simon & Goes, 2013). The research site, target population, and variables were key boundaries of this study affecting the generalizability of results. A regionally accredited institution offering an NBHWC-approved health and wellness coach training program with considerable program enrollment was selected as the research site to ensure the rigor of the program and maximize the size of the target population. Health and wellness coach training programs not approved by NBHWC were not considered. These boundaries limit the generalizability of results beyond NBHWC-approved

health and wellness coach training program students, as differences between NBHWC-approved and non-approved organizations may attract students with distinctive characteristics. Additionally, economic conditions vary regionally, which could affect EI (Ebert, Götz, Obschonka, Zmigrod, & Rentfrow, 2019).

Gender, age, and IEO were the focus of research. Other factors possibly influencing EI in health and wellness coaching students, such as institutional affiliation and culture, were not explored. While these other factors could have been examined, a review of the literature supported the examination of gender, age, and IEO as relevant to the population under study (i.e., a gendered field with entry into the field after degree attainment; Liñán & Fayolle, 2015). The generalizability of results to other fields or populations with a dissimilar demographic profile may be limited.

## Limitations

Beyond the control of a researcher, limitations are constraints with the potential to affect study outcomes (Simon & Goes, 2013). Limitations of the research included sample characteristics, time constraints, selection bias, and subject effects. Few men took part in the study, limiting the interpretability of gender-related outcomes. To respect the potential respondents' time and minimize distraction from coursework, the first data collection process was restricted to three weeks, and the second data collection period was restricted to one week. The short collection timeframe may have limited the number of responses. To maximize the response rate, two reminders were sent during the first data collection period.

The total population samples may have been susceptible to volunteer bias. Volunteer bias limits the generalizability of the sample results to the target population because the respondents who volunteered for the survey may have different characteristics from those who did not

(Salkind, 2010). Representativeness of the second sample was not able to be determined, possibly obscuring evidence of response bias. The anonymous and confidential nature of the survey may have reduced volunteer bias (Salkind, 2010). Additionally, the selection of the target population based on narrow characteristics limits the generalizability of results to other populations (Creswell & Creswell, 2018).

The responses may have suffered from the subject effect of social desirability bias due to self-reported data collection. Social desirability bias, where respondents under- or overreport answers to be more socially acceptable, may be triggered by the collection of personal characteristics such as age and gender (Gittelman et al., 2015). Guaranteeing anonymity and the use of an electronic, self-completed collection method instead of in-person collection reduced the potential of social desirability bias (Caputo, 2017).

## Chapter Summary

Health and wellness coaching is a rapidly growing profession where nearly 40% of the practitioners are self-employed (Kreisberg & Marra, 2017; Wolever et al., 2016). Self-employment requires entrepreneurial competencies, which can be learned through entrepreneurial education (Arnaert et al., 2018; Mandel & Noyes, 2016). EI research indicates factors such as gender, age, and IEO can influence the desire to be self-employed (Lortie & Castogiovanni, 2015). Development of entrepreneurial education content requires knowledge of student characteristics such as sociodemographic background, level of EI, and IEO (Pruett & Şeşen, 2017). The problem was the sociodemographic characteristics of health and wellness coaching students, the students' EIs and orientations, and entrepreneurial education support were unknown (Sforzo et al., 2017).

The objectives of this research were to document the EI of health and wellness coaching students and determine the influence of gender, age, and IEO of students to aid the faculty development of effective entrepreneurial education. The research questions, hypotheses, and theoretical framework guiding the research were stated. Significance of the study was summarized, and the assumptions, scope, delimitations, and limitations bounding the research were presented. Next, a detailed description of the theoretical and conceptual framework guiding this research, the literature search strategy, and a thorough review of the literature are provided. This review discusses the health and wellness coaching field and the characteristics of health and wellness coaching professionals, followed by a digest of EI research. Discussion of the EI of health and wellness coaching students concludes the review.

Chapter 2: Literature Review

The purpose of this quantitative correlational research was to document factors influencing the EI of health and wellness coaching students to inform the development of entrepreneurial education. The problem was research on the factors influencing EI had not been studied in the health and wellness coaching graduate student population (Sforzo et al., 2017). EI can vary by educational field of study (Peprah et al., 2015). Delivery of effective entrepreneurial education requires an understanding of the characteristics and EI of health and wellness coaching students (Pruett & Şeşen, 2017).

An overview of the health and wellness coaching field and the characteristics of health and wellness coaching professionals guided the inquiry of EI among health and wellness coaching students seeking self-employment. A discussion of the entrepreneurship research explores the antecedents to EI grounded in Ajzen's (1991) TPB. The effects of gender, age, and IEO on EI were investigated for application to health and wellness coaching graduate students. The literature search strategy for the literature review is explained, followed by the theoretical and conceptual framework. The research literature review, in which an overview of the health and wellness coaching field and a broad discussion of student EI and the influence of gender, age, and IEO is given, is followed by a literature review summary.

**Literature Search Strategy**

A literature search strategy conducted primarily within the library holdings at the American College of Education accessed 10 electronic databases with the EBSCO Discovery Service search engine. Relevant literature included information about the professionalization of the health and wellness coaching field, empirical research of EI, and the theoretical framework. Subject searches of key terms (e.g., *health and wellness coaching*, *entrepreneurial intention*,

*individual entrepreneurial orientation*, and *theory of planned behavior*) returned 367 peer-reviewed articles for review. Criteria for inclusion in the literature review included accuracy, authority, objectivity, currency, and topic coverage.

Multiple searches of the library holdings at the American College of Education for relevant theoretical and empirical articles were conducted. The EBSCO Discovery Service search engine searched Academic Search Complete, American Doctoral Dissertations, Business Source Complete, CINAHL Complete, Education Source, ERIC, and MEDLINE Complete databases. The ProQuest search engine searched Education Database, Health Management Database, and Regional Business Review databases. Subject searches were performed using keywords individually and in combination using Boolean logic (see Table 1) and included equivalent subjects and output constrained by limiting to peer-reviewed articles published in English from 2015 to present. Articles were screened for relevance to the research problem first by title, then abstract, followed by full text. Criteria for inclusion in the literature review were based on accuracy, authority, objectivity, and currency. References of relevant articles were reviewed to identify seminal studies and additional literature of relevance (Galvan & Galvan, 2017), which were retrieved from the library holdings of American College of Education and California State University, Fullerton.

Table 1

*Search Strategy Keywords with Boolean Logic*

| Keywords | Results |
|---|---|
| "health coach*" or "wellness coach*" or "health and wellness coach*" | 121 |
| ("health coach*" or "wellness coach*" or "health and wellness coach*") and credential* | 0 |
| ("health coach*" or "wellness coach*" or "health and wellness coach*") and student* | 4 |
| ("health coach*" or "wellness coach*" or "health and wellness coach*") and entrepre* | 0 |
| "entrepre* inte*" | 231 |
| "entrepre* inte*" and student* | 32 |
| "entrepre* inte*" and (gender or sex) | 16 |
| "entrepre* inte*" and (age or aging) | 2 |
| "individual entrepreneurial orientation" | 3 |
| "individual entrepreneurial orientation" and (gender or sex) | 0 |
| "individual entrepreneurial orientation" and (age or aging) | 0 |
| ("Theory of Planned Behavior" or TBP) and entrepre* and student* | 15 |

## Theoretical and Conceptual Framework

The TPB suggests the intention to perform a behavior can be explained and predicted by PA toward the behavior, SN, and PBC (Ajzen, 1991). Applied to entrepreneurship, TPB can determine factors influencing the intention to become self-employed (i.e., EI; Liñán & Fayolle, 2015). Empirical research has demonstrated TPB accurately predicts EI and subsequent behavior (Liñán & Rodríguez-Cohard, 2015; Shirokova et al., 2016).

Motivational factors influencing behavior make up part of the intention to perform the behavior, which explains the level of effort an individual is willing to expend to perform the behavior (Ajzen, 1991). According to Ajzen (1991), the stronger the individual's intention to perform the behavior, the greater likelihood the behavior may be performed when the behavior is under volitional control of the individual (e.g., opportunity, skill, resources). TPB proposes three independent antecedents to intention, PA, SN, and PCB. PA is the degree to which an individual favors the given behavior; favorable attitudes to the behavior positively influence intention to perform the behavior. SN is the degree to which an individual perceives social pressure from close ties to perform the behavior; support from close ties may encourage the behavior while

censure may discourage the behavior. PBC is the degree to which the level of difficulty in performing the behavior is perceived, which is informed by experience and anticipation of the future. The relationship between the three antecedents to intention and the influences exerted on intention vary by context.

Much of the entrepreneurship research has used the TPB in whole or in part to determine antecedents to EI (Entrialgo & Iglesias, 2016; Lortie & Castogiovanni, 2015). Lortie and Castogiovanni (2015) explained PA, SN, and PBC have an additive effect on EI, which makes possible an individual with one or two low antecedents to have a high level of EI. In an examination of 65 entrepreneurship articles citing TPB, Lortie and Castogiovanni determined the number of articles evaluating the relationship between each antecedent and EI. PA to EI was evaluated in 16 articles, 100% of which confirmed the relationship; SN was tested in 14 articles, 86% of which confirmed the relationship; and PBC was tested in 24 articles, 90% of which confirmed the relationship. Additions to TPB include antecedents to PA, SN, PBC (e.g., prior family business exposure, risk propensity), and constructs not part of the original model (e.g., gender).

Extending TPB, a conceptual model to determine if gender, age, and IEO directly influence EI was proposed (see Figure 1). Figure 1 shows the proposed influence of gender, age, and IEO on EI. Ajzen (2011) suggested factors relevant to the behavior under investigation be studied. Entrepreneurship research indicates gender, age, and IEO are factors considered relevant to EI (Bolton & Lane, 2012; Minola et al., 2016; Robledo et al., 2015).
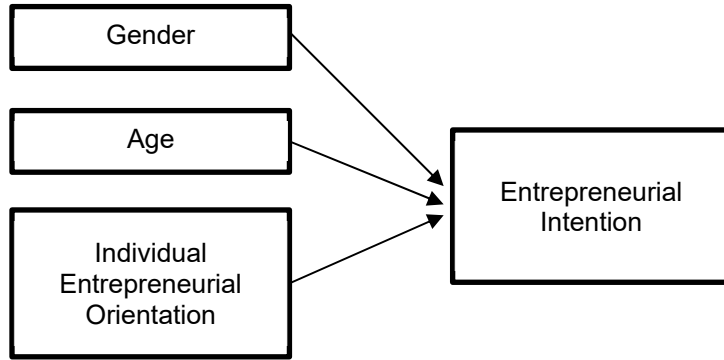
*Figure 1:* Conceptual framework of proposed relationships between criterion variable (i.e., EI), and predictor variables (i.e., gender, age, and IEO).

Application of the conceptual framework underpinned by the TPB supported the goal of the study, to determine the direct influence of gender, age, and IEO of health and wellness coaching students on the students' EI (Lortie & Castogiovanni, 2015). Under TPB, gender, age, and IEO could be considered antecedents of PA, SN, and PBC, which could indirectly predict EI, or gender, age, and IEO could be considered direct antecedents of EI (Lortie & Castogiovanni, 2015). The influence of gender, age, and IEO on EI has been studied separately; gender-intention (Gielnik, Zacher, & Wang, 2018), age-intention (Soria, Honores, & Gutiérrez, 2016), and IEO-intention (Koe, 2016). The influence of age and gender on EI has been studied together (Liñán & Rodríguez-Cohard, 2015; Padilla-Angulo, 2017). The influence of gender and IEO on EI has been studied together (Koloba, 2017). A gap in the literature exists considering gender, age, and IEO together as influencers of EI.

### Research Literature Review

The review of literature focuses on three streams of knowledge: health and wellness coaching, EI, and EI of health and wellness coaching students. First, an overview of health and wellness coaching is provided, with subsections delineating the role of health and wellness coaches and differentiating from other types of coaching practices, describing efforts to professionalize the health and wellness coaching field, establishing the entrepreneurial role of

health and wellness coaches, and discussing the need for entrepreneurial education to support self-employment in the health and wellness coaching profession. Next, an overview of EI and its relationship to study variables (i.e., gender, age, and IEO) is provided, with subsections discussing measurement, relationship to the TPB, other antecedents to EI, cultural considerations, populations and fields of study, and effects of entrepreneurial education. Last, an overview of what is known about the EI of health and wellness coaching students is provided, which discusses possible applications of prior research to target the research population.

## Health and Wellness Coaching

Health and wellness coaching is a young and growing profession (Kreisberg & Marra, 2017; Mittelman, 2015). The profession is similar to other types of coaching (e.g., business, career, leadership, life coaching), yet is distinct in its functions, tasks, and necessary skills (Jordan et al., 2015). Efforts to professionalize the health and wellness coaching field led to the development of a national certification program in 2016 (Wolever et al., 2016) and corresponding training standards (Jordan et al., 2015). More than one-third of health and wellness coach practitioners are self-employed (Wolever et al., 2016). Establishing a self-employed practice can be challenging and requires the development of entrepreneurial competencies (Arnaert et al., 2018). Entrepreneurial competencies are developed through entrepreneurial education (Mandel & Noyes, 2016). Delivery of entrepreneurial education responsive to the needs of health and wellness coaching students requires an understanding of the students' characteristics and EI (Pruett & Şeşen, 2017). Knowing the level of EI of health and wellness coaching students, background characteristics, and what influences EI can provide the basis for developing training to support self-employment (Pruett & Şeşen, 2017).

**Role of Health and Wellness Coaches**

      A defined combination of tasks, knowledge, and skills delineates the role of health and wellness coaches, argued Jordan et al. (2015), which differentiates the field from other types of coaching such as fitness or life coaching. The role of a health and wellness coach is to help clients gain knowledge, skills, tools, and confidence to reach client-identified health goals (Wolever et al., 2016). Tasks central to the health and wellness coaching process are assisting the client with identification of a holistic health target, evaluating a client's readiness to work toward the target, collaborating with the client to develop goals and the steps to progress toward goal achievement, and providing support and accountability throughout the coaching process (Jordan et al., 2015). Types of knowledge required to complete coaching tasks include techniques (e.g., rapport, communication, coaching assessment, information and resource sharing, enhancing self-awareness, goal-setting, behavior tracking), models (e.g., health and wellness coaching process, behavior change, motivation), personal client information, and basic evidence-based healthy lifestyle information (Jordan et al., 2015). Jordan et al. (2015) specified 38 skills necessary for proficient coaching, some of which are establishing trust, displaying empathy, active listening, recognizing emotions, motivating behavior change, evaluating research and resources, building self-awareness, reframing, setting boundaries, self-management, and interprofessional collaboration. Wolever et al. (2016) delineated what is not the role of a health and wellness coach. Health and wellness coaches do not offer clinical diagnosis or advice, remind clients about appointments or to take medication, or help clients navigate the health care system intricacies.

**Characteristics of Health and Wellness Coaches**

People from diverse personal and educational backgrounds have chosen health and wellness coaching as a profession (Kreisberg & Marra, 2017; Mittelman, 2015). Mittelman (2015) stated an influx of people with healthcare professional backgrounds—physician, nurse, social work, psychology, and allied health—come to health and wellness coaching. Healthcare professionals are often adding health and wellness coaching skills to complement an existing practice or area of expertise. Health and wellness coaching have been cited as a personal calling by persons from professions outside of healthcare, such as architecture and law.

Multiple routes to become a health and wellness coach exist, such as academic, self-learning, and by declaration (Kreisberg & Marra, 2017). Mittelman (2015) described three academic routes to become a health and wellness coach. The first and common route to health and wellness coaching is training through professional continuing education; practicing healthcare professionals often pursue this type of training over other routes. Earning a health and wellness coaching graduate certificate is the second route to health and wellness coaching. A graduate certificate conveys the requisite knowledge to become a health and wellness coach to persons already possessing graduate-level education in a health-related discipline. The third route is earning a master's degree in health and wellness coaching. For persons with a background outside of healthcare, the master's degree in health and wellness coaching affords a broader exposure to related areas such as nutrition, movement, and body-mind science.

Health and wellness coaches are typically employed in hospitals, by corporate wellness programs, or are in private practice (Kreisberg & Marra, 2017). Results of a national survey of 1,031 health and wellness coaches conducted by Wolever et al. (2016) indicated a majority of coaches were female (92%). Table 2 provides background information about the survey

respondents. Most coaches were 36-55 years old and had attained a 4-year degree or higher.

Coaches were distributed throughout the United States and practiced in various settings, with

self-employment cited most often as the primary setting.

Table 2

*Percentages (n) for Background of Job Task Analysis Validation Survey Participants*

| Background | Percentage |
|---|---|
| Age (years) | |
|    < 36 | 15.8% |
|    36-55 | 53.5% |
|    > 55 | 30.7% |
| Educational background | |
|    Doctoral degree | 8.3% |
|    Master's degree | 45.6% |
|    Bachelor's degree | 40.3% |
|    Associate degree | 3.3% |
|    One-year certificate | 2.5% |
| Geographic region | |
|    Midwest | 29.0% |
|    South | 28.8% |
|    Northeast | 15.7% |
|    Multiple states and/or other nations | 6.5% |
| Primary coaching practice setting | |
|    Self-employment | 37.9% |
|    Medical/clinical facility | 24.6% |
|    Employee health, fitness, and wellness | 12.8% |
|    Coaching services contractor | 8.2% |
|    Insurance Company | 5.3% |
|    Health club/fitness facility | 3.7% |
|    University/academic | 2.4% |
|    Government or military | 2.1% |
|    Community-based facility (church, rec center, etc.) | 2.1% |
|    Other | 0.8% |

*Notes. n* = 1,031. Adapted from "Advancing a new evidence-based professional in health care: Job task analysis for health and wellness coaches," by R. Q. Wolever, M. Jordan, K. Lawson, K., and M. Moore, 2016, *BMC Health Services Research, 16*, p. 7. CC BY 4.0.

**Coaching as a Practice Worldwide**

The International Coach Federation (ICF) is the largest professional organization of

professional coaches with 22,000 certified coaches worldwide (Kreisberg & Marra, 2017). The

2016 ICF Global Coaching Study estimated the number of professional coach practitioners in all

coaching professions (i.e., business, career, health and wellness, and leadership) globally at

53,300, with 17,500 estimated in North America (International Coach Federation and PricewaterhouseCoopers, 2016). Women accounted for the majority of coach practitioners globally (67%) and in North America (73%). Table 3 provides background information about the survey respondents. Most coaches were 35-54 years old and had attained coach-specific training approved by a professional coaching organization.

Coach practitioners expected the number of clients (75%) and coaching sessions (63%) to increase over the next 12 months. ICF (2016) found 92% of coaching clients in the United States want coaches to be credentialed. Coach practitioners agreed clients expect coaches to be certified or credentialed (77%). When asked about obstacles in the next 12 months, the most often cited concern was untrained individuals practicing as coaches (44%).

Table 3

*Percentages (n) for Background of 2016 ICF Global Coaching Study Participants*

| Background | Percentage |
|---|---|
| Age (years) | |
| < 35 | 6% |
| 35-54 | 59% |
| > 54 | 35% |
| Coach-specific training | |
| Approved by a professional coaching organization | 88% |
| University-based program | 10% |
| Employer-based program | 1% |
| No coach-specific training | 1% |

*Notes.* $n$ = 15,380. Adapted from "2016 ICF Global Coaching Study," by International Coach Federation and PricewaterhouseCoopers, L. L. P., 2016. Copyright 2016 by ICF used with permission.

**Comparison Between U.S. Health and Wellness Coaches and Coaches Worldwide**

On the surface, health and wellness coaches appear similar to other types of professional coaches (e.g., business, career, leadership, life coaches). The ICF Global Coaching Study reported, across all types of coaching, the industry is female-dominated (International Coach Federation and PricewaterhouseCoopers, 2016). Like health and wellness coaches, other professional coaches are middle- to late-aged and have coach-specific training. Growth is

expected across all coaching fields (International Coach Federation and PricewaterhouseCoopers, 2016; Jordan et al., 2015). Professional coaches believe credentialing is necessary to establish credibility against unqualified competitors and to meet client expectations (International Coach Federation and PricewaterhouseCoopers, 2016). Globally, a majority of coaching clients require coaches to be credentialed (International Coach Federation and PricewaterhouseCoopers, 2016). These client expectations may, in part, be driving the need for credentialing in the health and wellness coaching field.

**Health and Wellness Coaching Field**

Karen Lawson, the Center for Spirituality and Healing's director of Integrative Health Coaching, estimates the health and wellness coaching field is about 20 years old and was begun by entrepreneurs of small enterprises (Mittelman, 2015). The rapid growth of practitioners entering the health and wellness coaching field, the proliferation of academic and private industry coach education and training programs, and confusion over field boundaries sparked the need for national standards (Jordan et al., 2015). Unlike nursing, health and wellness coaching does not require federal, state, or local licensure (Jordan et al., 2015). Jordan et al. (2015) stated new fields respond to the absence of licensing requirements by establishing professional credentialing as a means to professionalize the field. To professionalize the health and wellness coaching field, the National Consortium for Credentialing Health and Wellness Coaches (NCCHWC), which has since been renamed to the NBHWC, launched the first national accreditation and certification program in 2016 (Wolever et al., 2016). National certification is an aspect of credentialing intended to signify a practitioner has met professional training and

competency standards (Jordan et al., 2015). Coach preparation programs need to prepare students for becoming credentialed (Broadbear & Broadbear, 2017).

**Development of health and wellness coaching certification.** Contributions to the emerging knowledge-base of health and wellness coaching have come from research in psychology, health promotion, exercise, nutrition, internal and rehabilitative medicine, and nursing (Jordan et al., 2015). Jordan et al. (2015) described the development of the National Board Certification for Health and Wellness Coaching (NBC-HWC) as a collaborative process conducted over five years, involving multiple stakeholders. Experts in certification development, training, and education were employed during the development process. The initial stages of the development process revealed the meaning of the term *health and wellness coach* varied broadly, ranging from professionals with doctorate-level education and extensive training and expertise to paraprofessionals with basic training and skills. Coaching tasks and treatments varied widely. This variance showed the necessity of defining standards for the new profession of health and wellness coaching. Defining the boundaries of the new health and wellness coaching profession was the initial step in standards-setting (Kreisberg & Marra, 2017).

**Professionalizing the health and wellness coaching field.** In 2014, the NCCHWC defined the boundaries of health and wellness coaching roles by conducting a job task analysis (JTA) followed by a validation study (NBHWC, n.d.). The objective of the JTA was to create an accurate job description of health and wellness coaches, which would define the tasks, knowledge, and skills needed to perform at a minimally competent level (Wolever et al., 2016). According to Wolever et al. (2016), an expert psychometrician consultant led the JTA process, which included a group of 15 subject matter experts (SMEs) chosen for diversity of gender, age, ethnicity, professional background, training received, work setting, and geographic area of

practice who developed a complete list of essential tasks performed during coaching sessions through an iterative process with a final consensus on each task grouped into domains. A second group of SMEs, including 20 members from within academia, government, associations, and private sectors, was empaneled to define the knowledge and skills necessary to practice health and wellness coaching. After the development of the JTA, the list of 21 tasks was validated by a survey.

The process to validate the JTA was a survey disseminated electronically to a wide variety of health and wellness coaching practitioners using snowball sampling (Wolever et al., 2016). Participants were asked to complete 13 survey questions pertaining to background and coaching practices and to evaluate each coach job task by indicating the importance of the task (i.e., not important, somewhat important, important, or very important) and the frequency of the task (i.e., never, infrequently, occasionally, or frequently). Based on 885 eligible responses from the 1,031 responses received (from 4,026 invitations; a 25.6% response rate), Wolever et al. (2016) found all 21 job tasks valid, indicating these 21 tasks are essential to health and wellness coaching practice. Job tasks were grouped into 4 domains: (a) activities in the beginning phases of the coaching process; (b) work axial to the coaching process; (c) addressing the client's assessment and integration; and (d) professional and legal behavior. Responses represented a sample diverse in current practice settings, training and professional background, and sociodemographic status. Gender was not diverse (92% female) and race and ethnicity were not collected.

The NCCHWC postulated results of the JTA could be used to design a valid and legally defensible certification examination (Wolever et al., 2016). A validated JTA clearly delineated the health and wellness coach role (Jordan et al., 2015). Jordan et al. (2015) described the

process used by the NCCHWC to develop the national certification examination as following

best practices using a vetted team of practicing health and wellness coaches who were free from

conflicts of interest to write test items. A bank of 300 exam questions was developed and

reviewed to ensure the items reflected current best practices, were stated clearly, were nontrivial

and relevant, and would be reasonably challenging to knowledgeable candidates. The

examination included roughly 150 multiple-choice questions derived from the validated JTA.

Minimum criteria of eligibility to test for the exam were developed, which included satisfying

minimal credential requirements, completing an approved training program, and completing a

minimum of documented coaching sessions.

**National training and education standards for health and wellness coaching.**

National training and education standards were developed to support eligibility to test for the

national certifying examination (Kreisberg & Marra, 2017). According to Jordan et al. (2015),

the training and education standards development process involved the examination of the tasks,

knowledge, and skills needed to practice health and wellness coaching resulting from the JTA.

Discussions of curriculum development among a panel of SMEs representing 20 members from

within academia, government, associations, and private sectors were facilitated by an expert in

curriculum architecture and competency development. From those discussions, NCCHWC

executive committee members finalized the national training and education standards, ensuring

every standard was based on the final JTA results.

Four criteria need to be met to become an NBHWC certified health and wellness coach

practitioner: (a) completion of an NBHWC-accredited program, (b) completion of documented

coaching sessions, (c) satisfaction of minimal credential requirements, and (d) completion of the

certification examination (NBHWC, n.d.). Completion of an NBHWC-accredited program

includes passing a practical skills evaluation and having at least 30 hours of synchronous contact for practical skills development. A minimum of 50 documented coaching sessions of at least a 20-minute duration is required; sessions with classmates, friends, or family do not qualify. Minimal credential requirements can be met through the satisfaction of one of four options: (a) clinical license active within last five years and an associate degree or higher; (b) bachelor's degree or higher in a health-related discipline; (c) bachelor's degree or higher in a non-health-related discipline and 2000 hours work experience in allied health, wellness, or health professions; or (d) by petition with justification for special consideration. Completion of the certification examination is determined by a passing score developed on a criterion-referenced methodology. Health and wellness programs seeking accreditation are required to meet the following criteria: (a) faculty credential criteria, (b) mentor coaches credential criteria, (c) a minimum 78 contact hours of education and training in skills, tasks, and knowledge specified in the JTA, and (d) a practical skills evaluation. A total of 38 skills, 21 tasks, and 11 areas of knowledge are specified in the JTA (Jordan et al., 2015), none of which are related to entrepreneurial education.

**Entrepreneurial Role of Health and Wellness Coaches**

Self-employment in professional caring work is understudied (Wall, 2015). While more than 200 articles published since 2000 examined the outcomes of health and wellness coaching, there is no extant research defining the entrepreneurial role of health and wellness coaches (Sforzo et al., 2017). In the JTA validation study, more than one-third of the practicing health and wellness coaches indicated self-employment as a primary coaching practice setting, which was the most frequently indicated setting (Wolever et al., 2016). Health and wellness coaches working for an organization may have an independent practice as well (Wolever et al., 2016).

Examining the entrepreneurial role of healthcare professionals such as nurses and other allied health professionals may be useful, as health and wellness coaching is considered an allied health profession. Arnaert et al. (2018) defined nurse entrepreneurs as independent practitioners, motivated by profit, who provide direct services to clients as a business proprietor. The motivation for profit makes nurse entrepreneurs engaged in business proprietorship distinct from other forms of entrepreneurship, such as intrapreneurship and social entrepreneurship (Arnaert et al., 2018). Self-employed nurses need entrepreneurial abilities to succeed in business proprietorship (Arnaert et al., 2018). Entrepreneurial abilities can be learned through entrepreneurial education (Mandel & Noyes, 2016; Yusoff et al., 2016).

**Entrepreneurial Skills and Education of Health and Wellness Coaches**

Nursing and allied health professionals have entrepreneurial roles or are entrepreneurs, which necessitates entrepreneurial education is part of any comprehensive education program (Arnaert et al., 2018; LaFevers, Ward-Smith, & Wright, 2015). Like the entrepreneurial role of health and wellness coaches, due to the gap in health and wellness coaching literature (Sforzo et al., 2017), the entrepreneurial education of health and wellness coaches could be inferred from nursing and allied health. In a review of nursing entrepreneurship literature, Arnaert et al. (2018) found perceived entrepreneurial education gaps for nurses. Entrepreneurial education gaps were found by practicing nurse entrepreneurs within four entrepreneurial skill domains: cognitive, interpersonal, business, and strategic.

Entrepreneurial education gaps within the four entrepreneurial skill domains were described in detail by Arnaert et al. (2018). Important themes in the cognitive skills domain were self-regulation, professional knowledge, and understanding place within a broader context. For self-regulation, an ability to achieve work/life balance and cope with the stress of uncertainty

were considered essential to the start-up phase of entrepreneurship when a nurse may be challenged by limited resources (Wall, 2015). Professional knowledge, along with technical knowledge and credentials within the field of services on offer, was considered necessary for establishing credibility and expertise (Arnaert et al., 2018). Understanding the place of the independent practitioner within the healthcare system, institutional healthcare governance (LaFevers et al., 2015), and general economics were regarded as critical to situating and advancing practice in relation to the broader financial context.

Three primary themes in the interpersonal skills domain were selling services, dealing with resistance, and assertive communication (Arnaert et al., 2018). Selling services included the importance of an ability to network with other healthcare professionals to exchange advice (Wall, 2015), give and receive referrals, and seek mentorship from more experienced nurse entrepreneurs. Dealing with resistance entailed the necessity of developing conflict resolution skills, defending independent practice (Wall, 2015), and reconciling professional identity as a nurse with business activities. Assertive communication was recommended for the delegation of tasks, managing employees, and portraying confidence as a business manager (Wall, 2015).

The business skills domain was divided into four themes, controlling risk, marketing, financial management, and operations management (Arnaert et al., 2018). Managing risk involved understanding legal and regulatory issues, using a legal contract for services, awareness of liability arising from independent practice (Wall, 2015), and navigating complicated state regulations for reimbursement. Marketing described the ability to promote offered services through advertising, setting up referral relationships with doctors and other practitioners, developing a customer service mindset with a focus on quality, and creating collateral materials such as business cards, brochures, and a website (Arnaert et al., 2018). Financial management

referred to the need for knowing how to obtain adequate capital, setting fees for services (Wall, 2015), handling insurance reimbursement, and performing accounting and budgeting tasks (LaFevers et al., 2015). Operations management covered tasks of administering business, which included making decisions to promote daily operations (LaFevers et al., 2015), managing time, and performing human resource-related activities such as recruitment (LaFevers et al., 2015), retention, supervision, mentorship, and productivity.

The strategic skills domain entailed aspects of strategic management necessary to start a business (Arnaert et al., 2018). Tasks essential to starting a business included determining an organizational niche (Wall, 2015), developing a business plan, managing resources, and finding support resources. Determining an organizational niche requires critical thinking and problem-solving skills to identify a marketplace need and how to fulfill the need. Developing a business plan involves visioning a course of business, setting business outcomes to achieve, and devising strategies to reach the outcomes. Managing resources requires problem-solving to maintain a profitable cost/quality ratio, which may involve negotiating with vendors and suppliers. Support resources, such as accountants and lawyers who are experts in the nursing entrepreneur domain, need to be found and turned to when necessary (Wall, 2015).

**Establishing a private practice**. The start-up phase of private practice has a steep learning curve (Wall, 2015). In a personal account, Schwab (2016), an audiologist, described her experiences establishing an independent practice shortly after earning a Doctor of Audiology degree (Au.D.). Schwab recounted nine areas requiring entrepreneurial competency necessary for opening her practice, which included planning, location, resources, marketing, budgeting, revenue, record keeping, building relationships, and hiring. These nine areas requiring entrepreneurial competency triangulate with the gaps in entrepreneurial education Arnaert et al.

(2018) found. Entrepreneurial education offered by the Au.D. program Schwab completed was insufficient to support the development of entrepreneurial competency necessary to start an independent practice. The program offered just one class on practice management, which is typical of Au.D. programs, according to Schwab. Instead of turning to the university for business-related coursework, Schwab identified community resources such as the Small Business Administration to learn about starting a business, seeking information specific to healthcare-related practice.

**Acquiring Entrepreneurial Education**

Entrepreneurship skills can be taught (Fayolle & Gailly, 2015; Mandel & Noyes, 2016; Yusoff et al., 2016). Pruett and Şeşen (2017) suggested effective entrepreneurial education content requires knowledge of student characteristics such as sociodemographic background, level of EI, and IEO. Considering the dearth of literature regarding health and wellness coaching students (Sforzo et al., 2017), gaps in the entrepreneurial education for nurses and other healthcare professionals (Arnaert et al., 2018), and the focus on establishing practice competencies within the health and wellness field (Jordan et al., 2015), presuming entrepreneurial education in health and wellness coaching programs may be insufficient to prepare students for establishing independent practice may be reasonable. As Arnaert et al. (2018) and Schwab (2016) discussed, establishing an independent healthcare-related practice requires entrepreneurial competency in cognitive, interpersonal, business, and strategic domains.

Health and wellness coaches wishing to practice independently can acquire entrepreneurial education through three avenues (Arnaert et al., 2018). First, as Schwab (2016) suggested, entrepreneurial education can be self-guided by utilizing community resources such as the Small Business Administration, which requires additional effort to uncover information

specifically related to healthcare practitioners. Second, degree programs such as an MBA could provide entrepreneurial education not tailored to the unique challenges of establishing an independent healthcare-related practice (Arnaert et al., 2018). Third, entrepreneurial education relevant to establishing an independent healthcare-related practice could be offered in college and university health-related programs (Arnaert et al., 2018). Arnaert et al. (2018) claimed few nursing degree programs offer curricula addressing entrepreneurism, and the few nursing programs providing entrepreneurial education do not cover the full spectrum of entrepreneurial skills necessary to support nurse entrepreneurs. Supporting the needs of students who want to be self-employed creates a need for responsive entrepreneurial education in healthcare-related college and university degree programs (Arnaert et al., 2018).

**Conclusion of Health and Wellness Coaching**

Health and wellness coaching is set apart from other types of coaching by the tasks, skills, and knowledge required to practice (Jordan et al., 2015). Helping the client achieve client-directed wellness goals is the primary responsibility of a health and wellness coach (Wolever et al., 2016). Little is known about the sociodemographic characteristics of practicing health and wellness coaches (Wolever et al., 2016). Like other types of coaches, health and wellness coaches are primarily female, aged 35 or older, and educated (Wolever et al., 2016). Roughly one-third of health and wellness coaches are self-employed (Wolever et al., 2016). Persons entering the health and wellness coaching field come from varied professional backgrounds, with healthcare being the most direct path (Mittelman, 2015).

Growth in the number of persons entering the health and wellness coaching profession spurred an increase in education and training programs (Jordan et al., 2015). Rapid growth of the field created the need to define professional boundaries and differentiate health and wellness

coaching from other types of coaching (Jordan et al., 2015). Nascency of the health and wellness coaching field contributed to challenges faced by practitioners, such as a lack of national licensure requirements (Jordan et al., 2015). Efforts to professionalize the field led to the creation of the NBC-HWC (Wolever et al., 2016). The credentialing process was created through a formal and rigorous process establishing professional training and competency standards (Jordan et al., 2015). To make students eligible to test for the NBC-HWC, training programs would be required to meet education standards, delineating valid entry-level skills (Jordan et al., 2015).

A gap in the literature exists about health and wellness coaching students' characteristics, the students' EIs and orientations, and entrepreneurial education support (Sforzo et al., 2017). Nursing entrepreneurship literature may be considered a proxy to examine entrepreneurial roles and educational support of health and wellness coaching students. Gaps in entrepreneurial nurse education have been identified in four domains (i.e., cognitive, interpersonal, business, and strategic), which contribute to difficulty engaging in an entrepreneurial capacity (Arnaert et al., 2018). Self-employment and establishing a private practice come with a steep learning curve requiring entrepreneurial competencies (Schwab, 2016; Wall, 2015).

Entrepreneurial education can help healthcare practitioners surmount self-employment obstacles (Schwab, 2016). A need for developing contextually responsive entrepreneurial education within health and allied health fields exists (Dehghanzadeh et al., 2016). With the development of curricula to meet credentialing demands underway, the focus can be directed toward entrepreneurial education. Developing responsive entrepreneurial education requires knowledge of student characteristics, including sociodemographic background, level of EI, and IEO (Pruett & Şeşen, 2017). This study filled the gap in the literature about health and wellness

coaching students by documenting background characteristics, levels of EI, and influences on the development of EI.

## Entrepreneurial Intention

The term *entrepreneur* is credited to Richard Cantillon, who in 1743, used the term to refer to a business owner who bears the income risk of self-employment versus a worker earning a wage (Ioan, 2016). By the 21st century, researchers sought to construct a framework to explain entrepreneurship by viewing an entrepreneur as an individual who recognizes and acts upon business opportunities (Torres et al., 2017). Entrepreneurship is considered a planned behavior preceded by intention (Lortie & Castogiovanni, 2015). EI describes an individual's inclination to practice entrepreneurial behavior, such as owning a business or becoming self-employed, and is considered a reliable predictor of entrepreneurial behavior (Koe, 2016).

A body of research relates EI to the entrepreneurial process, entrepreneurship education, person-level variables, contexts and institutions, and new research areas (Liñán & Fayolle, 2015). EI models incorporate personal and environmental variables to explain what motivates EI (Torres et al., 2017). Kautonen, van Gelderen, and Fink (2015) stated two primary theoretical frameworks are prevalent in EI research, Shapero and Sokol's (1982) entrepreneurial event model and Ajzen's (1991) TPB. A great deal of overlap exists between the two models (Kautonen, van Gelderen, et al., 2015), and equal predictive power of the models was reported (Krueger, Reilly, & Carsrud, 2000). Liñán and Fayolle (2015) characterized TPB as the "reference" theory of EI research (p. 909).

The TPB relies on three explanatory personal-level variables (i.e., PA toward behavior, SN, and PBC) to predict behavior. Ajzen (1991) described the PA toward behavior as the degree to which an individual has a negative or positive view of the behavior. SN refers to the

combination of an individual's need for approval from an important relation and the relation's attitude toward the behavior. PBC is an individual's sense of the level of difficulty in engaging in the behavior. Entrepreneurship research indicates the TPB's three antecedents to behavior (i.e., PA, SN, PBC) explain 30-45% of the variation in EI (Kautonen, van Gelderen, et al., 2015).

**Measuring EI**

Researchers have used a variety of single- and multi-item instruments, ad hoc and existing, to measure EI. Thompson (2009) reported the term *entrepreneurial intention* has been conceptualized as the desire to own a business, vocational aspirations, career orientation, and perspective on self-employment. Attempting to standardize the definition of EI, Thompson created the Individual Entrepreneurial Intent Scale (IEIS). Operationalized as the commitment to establish a new venture and having a conscious plan to do in the future, the IEIS measured EI using a scale of six primary and four distractor items with a six-point rating scale. Items from the model were developed using a quasi-grounded approach.

In contrast to Thompson's (2009) conceptualization of EI as starting a firm, Lüthje and Franke (2003) measured EI as self-employment using two items, one asking about plans to be self-employed after leaving the institution, measured with a four-point rating scale and the other, asking about current self-employment status requiring a yes/no response. The variability in the conceptualization and measurement of EI hinders the comparison of research findings (Liñán & Chen, 2009). In addition to differences in the conceptualization of EI, constructs vary in the use of single- and multi-item measures.

Determining the level of EI through the use of multi-item measures was advocated by Thompson (2009). Liñán and Chen (2009) tried to standardize the definition of EI by developing the Entrepreneurial Intention Questionnaire (EIQ), based on the TPB. The EI measure within the

EIQ comprised six behavioral intention-based statements requiring a seven-point rating scale, which captured intent to start a firm. The multi-item measures developed by Thompson (2009) and Liñán and Chen (2009) were conceptualized similarly as intent to start a firm, but consider different motivations underlying intention. Thompson's IEIS examined activities such as looking for business opportunities and reading books about how to start a firm. Determination, commitment, and goals to be an entrepreneur and start a firm were examined in the EIQ by Liñán and Chen.

Researchers used ad hoc multi-item measures of EI (Chaudhary, 2017; Nguyen, 2018; Santoso & Sutedjo Dharma Oetomo, 2018). Chaudhary (2017) and Nguyen (2018) measured intention to start a business using two and three items, respectively. Santoso and Sutedjo Dharma Oetomo (2018) did not give enough detail to determine the operationalization of EI. A great deal of variation exists between validated and ad hoc instruments measuring EI. By far, the most commonly used multi-item instrument to measure EI has been the EIQ developed by Liñán and Chen, either in its original (Debarliev, Janeska-Iliev, Bozhinovska, & Ilieva, 2015; Jahani, Babazadeh, Haghighi, & Cheraghian, 2018; Koe, 2016) or an adapted (Gelaidan & Abdullateef, 2017; Ibrahim & Mas'ud, 2016; Lee-Ross, 2017; Palmer, Griswold, Eidson, & Wiewel, 2015) form.

Single-item measures, categorical and scaled, have been used to study EI. Thompson (2009) criticized the use of single-item measures of EI for problems with validity and reliability and categorical measures due to the measures' inability to reflect intensity or degree of intention held. Despite the criticism, researchers have used existing (Shinnar, Hsu, Powell, & Zhou, 2017) and ad hoc (Çera, Cepel, Zakutna, & Rozsa, 2018; Piperopoulos & Dimov, 2015) single-item scaled measures of EI. Shinnar et al. (2017) emulated Krueger et al. (2000) by asking U.S.

university students to estimate the likelihood of establishing a business within the next five years using a five-point response scale. Çera et al. (2018) asked Czech and Slovak university students to rate the strength of interest in doing business with a five-point response scale. Piperopoulos and Dimov (2015) asked UK university students the likelihood of setting up a company in the future with a five-point response scale.

Other researchers have measured EI with a single question collapsed into a dichotomous response (Dawson & Henley, 2015; Hatak, Harms, & Fink, 2015; Sher, Adil, Mushtaq, Ali, & Hussain, 2017). Dawson and Henley (2015) measured business start-up intention by asking the UK and other European university students what type of business, if any, would the student start within three years of course completion. Respondents describing a business were coded as having business start-up intent. Hatak et al. (2015) asked Austrian adults the degree to which acting entrepreneurially was thought about or nascent entrepreneurial actions were taken. Respondents who had no thoughts about engaging in entrepreneurship were categorized as having no EI, while those who had thought about engaging in entrepreneurship or became entrepreneurs were categorized as having EI. In a study of agricultural students, Sher et al. (2017) asked students to reply, yes or no, to wanting to be an entrepreneur in the future. Single-item measurements addressed the future likelihood of starting a business, or the want of and thoughts about becoming an entrepreneur, which left the conceptualization of an entrepreneur up to the respondent.

The distinction was made by Thompson (2009) between an abstract desire to become an entrepreneur and a commitment to become an entrepreneur, which leads to taking direct action. Much of the EI research has measured undergraduate university students, who are later expected to enter a variety of careers related to the student's field of study (Nabi, Walmsley, Liñán,

Akhtar, & Neame, 2018). These studies could be characterized as broad measures of EI, signifying a general desire to become an entrepreneur in an undetermined career path, rather than the commitment to become an entrepreneur. Koloba (2017) contended graduate students have greater maturity to make informed career decisions. For persons intending to become self-employed as health and wellness coaches, enrollment in a graduate or post-baccalaureate health and wellness coaching program is in itself an entrepreneurship action. Based on Çera et al. (2018), a scaled single-item instrument can be used to measure EI, defined as student commitment to pursue self-employment in the health and wellness coaching field after graduation.

**Relationship Between TPB and EI**

TPB is used to explain how PA, SN, and PBC influence student EI (Entrialgo & Iglesias, 2016). The relationship between EI and TPB has been evaluated with a variety of approaches and measures. Existing and ad hoc instruments have been used to measure TPB-based antecedents to EI (i.e., PA, SN, and PBC) in whole (Caro-González, Romero-Benabent, & Torné, 2017; Padilla-Angulo, 2017; Sušanj, Jakopec, & Krečar, 2015) or in part, using a single antecedent, such as PA (Zollo, Laudano, Ciappei, & Zampi, 2017) or PBC (Kautonen, Hatak, Kibler, & Wainwright, 2015). Liñán and Chen (2009) cautioned the significance of findings is influenced by examining the TPB in aggregate or by individual antecedents and by the operationalization of individual antecedents. The EIQ is often used to measure PA, SN, and PBC in its original form (Koe, 2016; Liñán & Rodríguez-Cohard, 2015) or adapted version (Lee-Ross, 2017; Padilla-Angulo, 2017; Sahinidis, Giovanis, & Sdrolias, 2012; Soria et al., 2016). Many studies showed PA, SN, and PBC are significant predictors of university student EI.

**Personal attitude.** The degree to which a university student holds a negative or positive view of entrepreneurship includes affective (entrepreneurship is attractive) and evaluative (entrepreneurship has advantages) considerations (Liñán & Chen, 2009). The EIQ measured PA with five questions concerning the attractiveness, satisfaction, and advantages of becoming an entrepreneur (Liñán & Chen, 2009). Caro-González et al. (2017) adapted the EIQ PA measurement. Torres et al. (2017) and Zollo et al. (2017) used the IEIS, which considered entrepreneurial activities to measure PA. Across the various instruments used, PA significantly predicted EI (Caro-González et al., 2017; Debarliev et al., 2015; Torres et al., 2017; Zollo et al., 2017). Sher et al. (2017) did not find a relationship between EI and PA among agricultural university students and did not describe the PA measurement used.

**Subjective norms.** The perceived climate of opinion about entrepreneurship, which influences the university student's desire to engage in entrepreneurship, is considered the SN (Soria et al., 2016). The EIQ measured SN with three questions about the approval by close family, friends, and colleagues of creating a firm (Liñán & Chen, 2009). Torres et al. (2017) used a nine-item instrument capturing general social attitudes toward entrepreneurship (e.g., entrepreneurs contribute to society, are focused on building wealth, cause social harm) to measure SN.

Findings for SN as an antecedent to EI were mixed. Debarliev et al. (2015), Naushad and Tvaronavičienė (2018), and Torres et al. (2017) reported SN influences EI. Lee-Ross (2017), Sher et al. (2017), and Sušanj et al. (2015) reported SN does not influence EI. Caro-González et al. (2017) found SN influences EI in women, but not men; women were influenced by family members' and friends' opinions about entrepreneurship. Liñán and Chen (2009) noted simple SN

constructs were often found non-significant, whereas SN constructs, including motives to comply, typically resulted in a significant relationship with EI.

**Perceived behavioral control.** The university student's perception of the level of difficulty and controllability in engaging in entrepreneurship constitutes PBC (Liñán & Chen, 2009). The EIQ (Liñán & Chen, 2009) measured PBC with six questions considering entrepreneurial capacity (e.g., ease of starting and sustaining a firm, preparedness to start a firm, knowledge about starting a firm). Torres et al. (2017) measured PBC using the New General Self-Efficacy Scale (Chen, Gully, & Eden, 2001), which confirmed the relationship between PBC and EI. PBC was widely reported to influence EI (Lee-Ross, 2017; Padilla-Angulo, 2017; Sušanj et al., 2015). Contrary to other studies, the model used by Naushad and Tvaronavičienė (2018) found PBC insignificant to predict EI, which was speculated related to Saudi Arabia being an undeveloped nation.

**Other Antecedents to EI**

In addition to evaluating the influence of PA, SN, and PBC on EI, the influence of a variety of other antecedents to EI has been examined in the entrepreneurship research (Lortie & Castogiovanni, 2015). Widely studied antecedents to the EI of university students in entrepreneurship research are family background, self-efficacy, and locus of control. Measurement of family background, self-efficacy, and locus of control varied across existing and ad hoc instruments with no predominant measure. Findings of the relationship between EI and family background, locus of control, and self-efficacy were mixed.

The influence of having a family background with entrepreneurship was only weakly supported in entrepreneurship research. Chaudhary (2017) reported having parents with an entrepreneurial background increased EI of university students in India, and Entrialgo and

Iglesias (2016) found family background influenced EI for women undergraduate students in Spain, but not men. Nguyen (2018), Rachmawan, Lizar, and Mangundjaya (2015), and Santoso and Sutedjo Dharma Oetomo (2018) reported family background did not influence EI in university students from Vietnam, Indonesia, and the UK and Spain, respectively. An internal locus of control was associated with EI in some studies (Chaudhary, 2017; Shirokova et al., 2016; Torres et al., 2017; Zollo et al., 2017). Mouselli and Khalifa (2017) found no influence of locus of control on the EI of Syrian university students. Self-efficacy was associated with EI in some studies (Mouselli & Khalifa, 2017; Mutlutürk & Mardikyan, 2018; Rachmawan et al., 2015; Santoso & Sutedjo Dharma Oetomo, 2018). Dawson and Henley (2015) and Sušanj et al. (2015) found self-efficacy did not influence the EI of university students.

**Cultural Considerations**

Entrepreneurship research has considered culture in several ways. Researchers have compared entrepreneurship characteristics by country (Soria et al., 2016), finding similarities and differences in university student entrepreneurial intent (Goktan & Gupta, 2015). Comparing 1,527 undergraduate business students from Chile, Colombia, Ecuador, Peru, and Venezuela, Torres et al. (2017) found the relationship between EI and leadership ability, risk tolerance, locus of control, gender, and family background was similar in Latin American students, but the patterns of EI by student level varied by country. Çera et al. (2018) found undergraduate Slovak students (59%) reported higher rates of EI than Czech students (49%), but gender patterns of EI were consistent between countries; men had significantly higher rates of EI than women did. Pruett and Şeşen (2017) examined attitudes toward entrepreneurship by faculty and students in six countries (i.e., Belgium, China, India, Spain, Turkey, and the United States) with widely varying cultures, entrepreneurial environments, and economies. Views of entrepreneurship

varied widely by country, but across the six countries, faculty perceived students as less entrepreneurial than the students' perceptions. In these studies, there was no attempt to explain differences in findings by culture.

Researchers have looked to measure the effects of culture on EI. Soria et al. (2016) argued the norms embedded in a culture shape an individual's cognitive formation, which in turn, mediates the relationship between personal attitudes and EI. To determine the influence of culture on EI, Soria et al. (2016) examined the relationship between the social legitimacy of entrepreneurship (SLE), gender, and TPB antecedents (PA, SN, PBC) for 351 undergraduate business management students from Chile and Colombia. SLE mediated PA in both countries, but to a greater extent in Chile, which has a more individualistic culture.

The influence of age and culture on self-employment motivation of 13,963 individuals in 21 countries were examined (Minola et al., 2016). Dimensions of culture measured were institutional collectivism, uncertainty avoidance, and performance orientation. Culture moderated the relationship between age and EI. Young adults experienced the most substantial cultural effects; culture had a marginal effect on older adults.

The effect of societal uncertainty avoidance on the relationship between EI and business start-up activities of 70,164 students in 34 countries was investigated (Shirokova et al., 2016). Societal uncertainty avoidance did not moderate the relationship between business start-up activities and EI. Together, these findings suggest the embeddedness of culture, to some extent, creates the conditions in which individual PA, SN, and PBC are formed, which explains differences in EI between countries.

Attempts were made to create cross-cultural instruments to measure EI. Thompson (2009) normed the IEIS with three separate samples of participants from diverse countries and

regions (i.e., Burma, European countries, Mexico, North-east Asian countries, Southeast Asian countries, Thailand, and Vietnam). Cross-cultural stability of the IEIS was confirmed by comparing the factorial invariance of native English speakers to non-native English speakers. Liñán and Chen (2009) sought to test the robustness of the EIQ across countries by norming the instrument on samples from two culturally dissimilar countries, Spain, and Taiwan. The EIQ explained EI in both countries with variations in the motivational factors, reinforcing the cross-cultural applicability of the EIQ. Culture influenced the antecedents to EI differently between countries, while the formation of EI remained consistent.

**Populations of Study**

University students have been a primary population of study in EI research (Mutlutürk & Mardikyan, 2018). The appropriateness of using university student samples is contested in the literature. Caro-González et al. (2017) stated university student populations were well suited to studying EI because university attendance is part of the exploration process of determining a future career path. The Liñán and Rodríguez-Cohard (2015) longitudinal intention-behavior study confirmed the majority of constructs and relationships remained stable from university to three years post-university. Due to a change in PBC between measurements, Liñán and Rodríguez-Cohard recommended handling student samples with care. Using university students to predict general adult entrepreneurial behavior at some point in the near to distant future may have limitations. Studies of university students were most relevant to this research, which examined the influences of EI of health and wellness coaching students to predict self-employment goals of the study population directly upon graduation from the program.

**Fields of Study**

Worldwide, university students, especially students in business programs, have been the focus of EI research (Mutlutürk & Mardikyan, 2018). Liñán and Rodríguez-Cohard (2015) asserted university students are poised to make career choices. Research seeking to understand university student EI within developing economies tended to collect data from students university-wide on the basis of students being pushed into entrepreneurship due to economic conditions (Debarliev et al., 2015). Analysis has been reported at the university level (Debarliev et al., 2015; Ibrahim & Mas'ud, 2016) or bifurcated into business and non-business categories (Chaudhary, 2017; Sušanj et al., 2015).

Other researchers have examined EI within schools of business, disaggregating results by degree program (Entrialgo & Iglesias, 2016). Chaudhary (2017) reported business majors were more entrepreneurial than non-business majors. Fewer studies have been conducted with non-business majors such as journalism (Caro-González et al., 2017) or agriculture (Yusoff et al., 2016). Peprah et al. (2015) reported differences in entrepreneurial characteristics between educational disciplines. Dawson and Henley (2015) noted variations in levels of EI by degree program. Differences in entrepreneurial characteristics found between fields of study underscore the need for additional research within more fields of study (Liñán & Rodríguez-Cohard, 2015; Mutlutürk & Mardikyan, 2018).

**EI-action Relationship**

The TPB suggests intention is the best predictor of action, making individuals with EI more likely to engage in entrepreneurial behavior such as starting a business than individuals with no EI (Liñán & Rodríguez-Cohard, 2015). As not all intentions are acted upon, a gap between intention and behavior exists (Shirokova et al., 2016). Establishing the intention-action

link in entrepreneurship research further ascribes validity to EI research. Liñán and Rodríguez-Cohard (2015) argued for a sufficient time lag between the measurement of EI and activity in university students to allow time to engage in entrepreneurial behavior after graduation. Lortie and Castogiovanni (2015) seconded the need for longitudinal data to study the intention-action relationship. Shirokova et al. (2016) countered with the need for proximal measurement to reduce the likelihood of events able to change intentions.

The temporal stableness of EI and its antecedents (PA, SN, and PBC) and the degree to which EI predicts self-employment in a longitudinal study of final-year undergraduate students in Spain were tested (Liñán & Rodríguez-Cohard, 2015). Over a three-year interval, EI and two of its antecedents (i.e., PA and SN) remained stable. PBC increased between measurement intervals, which may show undergraduates were not fully aware of self-employment options. A positive relationship between EI and start-up was found, where EI explained 12.8% of start-up variance. Liñán and Rodríguez-Cohard (2015) suggested entrepreneurial education should be provided in primary and secondary schools to create favorable attitudes toward entrepreneurship.

The EI-action gap of entrepreneurial students who took part in the 2013-2014 Global University Entrepreneurial Spirit Students' Survey representing 34 countries and 759 universities was studied (Shirokova et al., 2016). Influence of the individual background and environment on EI and start-up activities was examined for 70,164 students. EI explained 9.9% of the variance in business start-up activities. Age and family background were positively related to the strength of business start-up activities. Women were less likely than men to act on EIs. Shirokova et al. (2016) concluded background characteristics such as age and family background moderate the relationship between intention and action, highlighting the transformation of intentions into actions is contingent on necessary conditions.

A longitudinal study of U.S. undergraduate management students taking an introductory entrepreneurship course to determine if the EI-action link is moderated by sex was conducted (Shinnar et al., 2017). EI was measured at four time-points; before instruction (T1), before final exams (T2), six months after graduation (T3), and up to three years after graduation (T4). Roughly one-third of the sample ($n = 147$) had engaged in business start-up or preparation activities by T4. At T1, EI accurately predicted business start-up activity at T4, confirming the intention-action link. Differences were found in business start-up activity between men and women. The likelihood of starting a business increased with increasing levels of EI for men, but no relationship was found for women. Shinnar et al. (2017) concluded gender roles may stifle women's EIs and reduce inclinations to follow-through on intentions.

**EI and Gender**

Gender differences in EI are a popular research topic (Liñán & Fayolle, 2015), which continues to gain momentum (Robledo et al., 2015). A majority of research indicated women have lower rates of EI than men do (Goktan & Gupta, 2015; Shinnar et al., 2017); a gap found to be consistent across countries and economies (Entrialgo & Iglesias, 2016). A few studies reported no gender differences in EI (Chaudhary, 2017; Ojewumi, Oyeleke, Agberotimi, & Adedayo, 2018). Caro-González et al. (2017) argued the mixed findings of the influence of gender are attributable to weak methodological and theoretical approaches, signaling the need for more research. Differences in EI by gender have been examined through the TPB (Entrialgo & Iglesias, 2016), gender roles (Shinnar et al., 2017), and gender-role orientation (Perez-Quintana, Hormiga, Martori, & Madariaga, 2017).

**Gender and the TPB.** Gender's influence on PA, SN, and PBC in relation to EI has been investigated (Robledo et al., 2015). Consistent with TPB, gender influenced PA, SN, and PBC

differently for men and women (Entrialgo & Iglesias, 2016). Treating gender as an exogenous variable, Entrialgo and Iglesias (2016) reported SN from the closest environments (e.g., family, friends) has a greater effect on women's EI than men's. Women value gaining approval of entrepreneurship decisions from close ties to a greater degree than men do.

The influence of social evaluation on PA, PBC, and EI and the influence of SN on EI was examined (Caro-González et al., 2017). Social evaluation positively influenced PA and PBC in women, but not men, and did not influence EI in either gender. SN influenced EI in women, but not men. Women were heavily and directly influenced by social evaluation and SN, while men were only indirectly influenced by SN. Caro-González et al. (2017) posited, entrepreneurship is more attractive to women when close ties hold a favorable opinion of entrepreneurship. Dawson and Henley (2015) reported gender moderates PA toward risk where women are more risk-averse than men, explaining lower EI in women.

**Gender roles.** Entrepreneurship is a gendered process where men and women are subject to dissimilar expectations and support from society, argued Shinnar et al. (2017). Tying together social role theory, cultural dimensions, and gendered entrepreneurship perspective, Shinnar et al. investigated the influence of gender within a masculine national context on the intention-action link of university management students in the United States and reported gender roles temper the formation of women's EI and repress acting on EI. Given the differences in gender roles across cultures, Shinnar et al. speculated the effects of gender would vary by diverse national contexts. Other studies have gone beyond biological gender to consider the effect of gender-role orientation on EI (Palmer et al., 2015; Perez-Quintana et al., 2017).

**Gender-role orientation.** In a study of business and MBA students at a Midwest university, Palmer et al. (2015) tested the effects of gender and gender-role orientation on EI.

Gender roles operated differently for women and men; femininity and masculinity were predictors of EI in women, but only masculinity predicted EI in men. Androgyny was not a predictor of EI, which is counter to past research.

The influence of gender, gender stereotypes, and gender-role orientation on EI of management and business administration undergraduate students in Spain was investigated (Perez-Quintana et al., 2017). Masculine and androgynous (strong identification with femininity and masculinity) gender-role orientation predicted EI in both genders, but feminine and undifferentiated (weak identification with femininity and masculinity) gender-role orientation did not. For women, the most significant predictor of EI was feminine gender-role orientation, while masculine gender-role orientation was the most significant predictor of EI for men, which was partially consistent with findings by Palmer et al. (2015). Androgynous gender-role orientation was the most significant predictor of EI, showing gender-role orientation predicted EI better than biological gender did. Entrepreneur-related traits were associated with gender stereotypes, suggesting the persistence of gender stereotypes influencing EI.

**Conclusion of EI and gender.** Research has demonstrated EI varies by gender, with women showing less EI (Goktan & Gupta, 2015; Shinnar et al., 2017). Men were found to be more comfortable with risk-taking than women (Dawson & Henley, 2015) and required less social and environmental support (Caro-González et al., 2017; Entrialgo & Iglesias, 2016). Femininity, masculinity, and androgyny predicted EI differently by gender, suggesting gender-role orientation could predict EI better than biological gender. Persistence of gender stereotypes influencing EI was reported (Perez-Quintana et al., 2017). Entrialgo and Iglesias (2016) suggested entrepreneurial courses developed specifically for women could reduce gender entrepreneurship stereotypes and recommended future research on the influence of gender and

age be conducted. Developing entrepreneurial courses specifically for women could be an effective pedagogical strategy for a health and wellness coaching education program since the field appears to be female dominated.

**EI and Age**

The study of age is gaining momentum in the entrepreneurship literature (Minola et al., 2016). Age has been reported as a predictor of EI (Halvorsen & Morrow-Howell, 2016). Hatak et al. (2015) stated age is typically negatively associated with EI; as an individual ages, EI decreases. Bohlmann, Rauch, and Zacher (2017) found the relationship between age and entrepreneurial activity was weakly curvilinear, with middle-aged adults less likely to be engaged in entrepreneurship than younger or older adults. Kautonen, Hatak, et al. (2015) and Minola et al. (2016) reported an inverse U-shaped relationship between EI and age, with EI being lower at younger and older ages and higher for middle-aged individuals.

EI has varied by gender, decreasing for males and increasing for females over the age of 25 (Dawson & Henley, 2015). Other research reported no relationship between EI and age (Chaudhary, 2017; Debarliev et al., 2015; Mouselli & Khalifa, 2017; Santana Vega, González-Morales, & Feliciano García, 2016; Sher et al., 2017). Chaudhary (2017) speculated inconsistent findings could be due to conceptualization issues and cultural dissimilarities. Differences in findings may be explained by examining research methods, measurement, and sample populations.

**Measuring age.** Age has been measured and treated in different ways in the entrepreneurship intention research. The most commonly reported measurement of age is by years (Debarliev et al., 2015; Hatak et al., 2015; Sher et al., 2017). Measuring age by group has

been reported, too (Mouselli & Khalifa, 2017). Minola et al. (2016) criticized measuring age by group or cohort as a limitation, which reduces detail and makes interpretation more difficult.

Interpretation is further hindered by the variation in describing the age of the sample within entrepreneurship research. Most researchers report an age range. If not reported, an age range can be inferred when the mean and standard deviation (*SD*) are reported (Minola et al., 2016; Perez-Quintana et al., 2017). A few studies failed to adequately describe sample age distribution (Chaudhary, 2017; Dawson & Henley, 2015; Padilla-Angulo, 2017; Sher et al., 2017). Furthermore, researchers have failed to describe how age has been measured (Dawson & Henley, 2015; Santana Vega et al., 2016).

Age is most commonly used as a control variable in entrepreneurship research despite age being a robust predictor of entrepreneurial activity, according to Kautonen, Hatak, et al. (2015) and Bohlmann et al. (2017). Trends observed in the literature indicate, where age has been used as a control variable, no association with EI has been found (Chaudhary, 2017; Debarliev et al., 2015; Mouselli & Khalifa, 2017; Sher et al., 2017) and where age has been used as a predictor variable, age has predicted EI (Bohlmann et al., 2017; Minola et al., 2016). An exception, Santana Vega et al. (2016) found age did not predict EI in adolescents. Finding no relationship between age and EI when using age as a predictor variable could be due to the population under study.

The sample population age and age range may contribute to inconsistencies in the relationship reported between age and EI. Studies of youths between the ages of 11-16 years old (Santana Vega et al., 2016) and young adults between the ages of approximately 17-25 years old (Chaudhary, 2017; Debarliev et al., 2015) have indicated age does not predict EI. In general, studies of adults between the ages of approximately 20-69 (Gielnik et al., 2018; Hatak et al.,

2015; Kautonen, Hatak, et al., 2015) years old have found age predicts EI with varied results (e.g., positive, negative, inverted U-shaped relationships). A narrow age range may restrict the variability of EI due to participants sharing a similar life stage such as adolescents in secondary school (Santana Vega et al., 2016) or undergraduate business students (Liñán & Rodríguez-Cohard, 2015; Padilla-Angulo, 2017).

**Peak age of EI.** The age at which EI has been reported to be highest varies. In a study across 21 countries, of adults aged 18-64 not yet engaged in entrepreneurial activity, Minola et al. (2016) reported a peak of EI around the age of 22. Chaudhary (2017) suggested individuals between the ages of 25-30 were the most willing to endure the risks and have the capacity to start an entrepreneurial endeavor. Kautonen, Hatak, et al. (2015) indicated the age range of 35-44 years was the most entrepreneurially active for individuals. Gielnik et al. (2018) estimated the peak age of entrepreneurship at 45 years old.

There is a growing focus on older adult entrepreneurial behavior (Moulton & Scott, 2016). Halvorsen and Morrow-Howell (2016) and Hatak et al. (2015) defined older as over the age of 50. Minola et al. (2016) noted culture has a substantial moderating effect for young adults on the relationship between EI and age, which diminishes until convergence in older ages. The need for entrepreneurial education to be customized based on the characteristics of different age groups has been suggested (Bohlmann et al., 2017; Gielnik et al., 2018).

**Lifespan theory.** Researchers have applied lifespan theory to age-related entrepreneurship research. As related to entrepreneurship, lifespan theory examines the sources of change in personality, work values, and goal setting, which influence career development over an individual's lifespan (Nagy, Froidevaux, & Hirschi, 2019). Ainsworth (2015) asserted entrepreneurial abilities and motivation change over the lifespan. Gielnik et al. (2018) claimed,

generally, older individuals have acquired the means to engage in entrepreneurship (social, financial, and human capital), but interest in engaging in entrepreneurship may have declined. Bohlmann et al. (2017) highlighted the need for research explaining why and how age relates to entrepreneurial activity.

Researchers have found personal characteristics moderate the negative relationship between age and EI. Hatak et al. (2015) found EI declined as job identification increased in older Austrian employees. Bohlmann et al. (2017) reported perceived entrepreneurial skill and opportunity partially mediated the negative relationship between EI and age in adults, globally. Gielnik et al. (2018) found a future time perspective moderated the positive effect of opportunity identification on EI in Australian working adults and concluded the assumption of a linear relationship between entrepreneurship and age is oversimplified; the role of age moves from hindrance to facilitation across entrepreneurship phases. Findings suggest entrepreneurial education could be used to improve perceived entrepreneurial skills and opportunities and expand future time perspective to increase EI in adults.

**Conclusion of EI and age.** Variation in the conceptualization and measurement of the relationship between EI and age in research has led to inconsistent findings (Chaudhary, 2017). Studies using age as a predictor variable or a wide age range of adults have typically reported a relationship between age and EI with mixed findings (Gielnik et al., 2018; Minola et al., 2016). Gender moderated the age-EI relationship (Dawson & Henley, 2015). Variation in the peak age of EI reported has ranged from 22 to 45 (Gielnik et al., 2018; Minola et al., 2016). Entrepreneurial motivation and abilities can change over a lifespan (Ainsworth, 2015), and personal characteristics can moderate the relationship between EI and age (Bohlmann et al., 2017; Gielnik et al., 2018; Hatak et al., 2015). The health and wellness coaching field comprising

primarily mid-aged (36-55 years old) practitioners made the health and wellness coaching student population suitable for studying the intersection of age, personal characteristics, and EI.

**EI and IEO**

IEO was born out of entrepreneurial orientation (EO), which is a measurement of processes organizations use to make entrepreneurial decisions and actions (Bolton & Lane, 2012). Entrepreneurial orientation has been conceived as a construct of three to five personal characteristics and attitudes, which include autonomy, competitive aggressiveness, innovativeness, proactiveness, and risk-taking (Covin & Wales, 2012). In a meta-analysis of EO research, Rauch, Wiklund, Lumpkin, and Frese (2009) indicated innovativeness, proactiveness, and risk-taking were the three most commonly studied dimensions of EO. Entrepreneurial orientation can be studied as a multidimensional or unidimensional construct. Early EO research used multidimensional constructs until discovering the variables move together in most conditions (Bolton & Lane, 2012). Bolton and Lane (2012) concluded EO dimensions would be measurable for individuals because small organizations could be defined as the results of an individual's behavior.

**Measuring IEO.** IEO is the measurement of personal characteristics and attitudes correlating with entrepreneurship (Bolton & Lane, 2012). Multiple instruments to measure personal entrepreneurial characteristics and attitudes exist (Koe, 2016) and share similar underpinnings. Bolton and Lane (2012) created the IEO scale as a three-dimensional construct measuring innovativeness, proactiveness, and risk-taking. Taatila, Matlay, and Down (2012) added entrepreneurial desire, networking, and confrontation tolerance to create a six-dimension construct of IEO.

In an attempt to create a more comprehensive understanding of IEO, Ferreira, Jalali, Bento, Marques, and Ferreira (2017) integrated cognitive mapping with multiple criteria decision analysis to develop an IEO instrument. The IEO instrument includes seven dimensions: qualifications and practical experience, leadership traits, a propensity to innovate, attitude toward risk, ethical principles, factors of competitiveness, and other driving forces (e.g., passion, desire for freedom, networking). Davis, Hall, and Mayer (2016) created a measure of an entrepreneurial mindset, including 14 dimensions (seven traits and seven skills), which include innovativeness, passion, proactiveness, and risk-taking. Some or all three core dimensions of IEO, innovativeness, proactiveness, and risk-taking, are included in most IEO measures. Additional dimensions vary widely.

The IEO scale was described by Koe (2016) as a multidimensional construct based on the TPB consisting of innovativeness, proactiveness, and risk-taking. Others have treated the IEO scale as a composite construct (Lindberg, Bohman, Hulten, & Wilson, 2017). Bolton and Lane (2012) based the IEO scale on the Lumpkin and Dess (1996) EO construct, norming the scale with 1,102 undergraduate and graduate students at a U.S. university, making the instrument applicable to the study of university students. Research on university student IEO is limited, but Bolton and Lane's IEO scale appears to be used more frequently (Ibrahim & Mas'ud, 2016; Koe, 2016; Lindberg et al., 2017; Yusoff et al., 2016) than other instruments (Goktan & Gupta, 2015; Mutlutürk & Mardikyan, 2018). Furthermore, risk-taking has been commonly tested separately from the IEO construct (Chaudhary, 2017; Dawson & Henley, 2015; Naushad & Tvaronavičienė, 2018; Torres et al., 2017; Zollo et al., 2017).

**IEO as a predictor of EI.** IEO has not been examined thoroughly within the EI research (Koe, 2016). Several studies have examined the relationship between EI and IEO. In general, a

positive relationship between EI and IEO has been reported (Ibrahim & Mas'ud, 2016; Koloba, 2017). Increased IEO is associated with increased EI (Koe, 2016). Mixed results have been reported about the association of the individual dimensions of IEO with EI.

Innovativeness, proactiveness, and risk-taking predicted EI in U.S. university students (Bolton & Lane, 2012). Using Bolton and Lane's IEO scale as a composite construct, Ibrahim and Mas'ud (2016) reported IEO was positively associated with EI in Nigerian university students. Koe (2016) confirmed innovativeness and proactiveness were related to EI in Malaysian university students, but risk-taking was not. Yusoff et al. (2016) claimed the opposite of Koe, associating risk-taking with EI in Malaysian university students, but not innovativeness and proactiveness. The inconsistency of findings signals a need for more research on the relationship between EI and IEO.

**Dimensions of IEO.** IEO dimensions have been examined separately, independent of the IEO construct. The separate consideration of individual dimensions of IEO provides evidence of the dimension's influence on EI. Independent confirmation of the effects of specific IEO dimensions of innovativeness, proactiveness, and risk-taking shows the need for more research to further validate Bolton and Lane's (2012) IEO scale.

*Innovativeness.* Innovativeness indicates an individual's ability to generate ideas resulting in new processes, products, or services (Koe, 2016). Creativity and experimentation are associated with innovativeness (Rauch et al., 2009). Within the literature, innovativeness has been studied as part of the IEO dimensions and separate from IEO. Across cultures, innovativeness has been reported to influence the EI of university students in the United States (Bolton & Lane, 2012), India (Chaudhary, 2017), Malaysia (Koe, 2016), and South Africa (Koloba, 2017). An exception is agricultural students in Malaysia (Yusoff et al., 2016). Research

reporting a relationship between innovativeness and EI was measured broadly across multiple fields of study. The lack of findings within a single field of study may be attributable to the differences between fields of study (Koe, 2016).

*Proactiveness.* Proactiveness refers to an individual's ability to actively seek business opportunities (Koe, 2016). A proactive perspective anticipates future demand to deliver new products and services before the competition (Rauch et al., 2009). Of the three dimensions of IEO, proactiveness appears to be the least researched as a separate measure, and findings are inconsistent in the university population. Bolton and Lane (2012) reported proactiveness influenced EI in U.S. students university-wide, and Koe (2016) found the same for undergraduate business students in Malaysia. Yusoff et al. (2016) reported proactiveness did not influence EI in undergraduate agriculture students in Malaysia. Differences may be attributable to the field of study (Koe, 2016).

*Risk-taking*. Risk-taking is regarded as a necessary element of entrepreneurship (Koe, 2016). Entrepreneurs commit significant resources to enterprises in unknown environments, which instills an aspect of risk (Rauch et al., 2009). Of the three dimensions of IEO, risk-taking appears to be the most researched as a separate measure and is considered the primary predictor of EI (Zollo et al., 2017).

Within the university population, a propensity for risk-taking was positively associated with EI (Dawson & Henley, 2015; Koloba, 2017; Torres et al., 2017; Yusoff et al., 2016). Risk-taking was associated with a positive attitude toward entrepreneurship (Naushad & Tvaronavičienė, 2018; Zollo et al., 2017). Dawson and Henley (2015) reported women had a lower tolerance for risk-taking than men did, which led to lower levels of EI. In contrast, other researchers found no association between risk-taking and EI (Chaudhary, 2017; Koe, 2016). Koe

(2016) attributed a lack of findings concerning risk-taking to student's lack of readiness to become entrepreneurs.

**Conclusion of EI and IEO.** The dimensions of IEO, innovativeness proactiveness, and risk-taking are positively associated with EI (Ibrahim & Mas'ud, 2016; Koe, 2016). Gender and age can moderate IEO and EI (Dawson & Henley, 2015). Koe (2016) suggested IEO research is underdeveloped, especially with respect to gender and age. Understanding gender and IEO gaps are critical to informing entrepreneurial education development (Goktan & Gupta, 2015). Koe suggested tailoring entrepreneurial education content to meet specific student IEO needs and ability within specific fields of study. Determining the influence of gender, age, and IEO on the EI of health and wellness coaching students could further validate the IEO scale and fill the gap in the literature about this population's characteristics and EI, facilitating the development of effective entrepreneurial education.

**Conclusion of EI**

Despite a large body of entrepreneurship research, there is no consensus on the definition of EI, which has been characterized as the intention to start a business or become self-employed, among other definitions (Thompson, 2009). Agreement on the antecedents to EI between the two primary theoretical frameworks does exist (Kautonen, van Gelderen, et al., 2015). Ajzen's (1991) TPB is the dominant model (Liñán & Fayolle, 2015), which predicts EI from three antecedents, PA, SN, and PBC. Applicability of the TPB as a composite construct has been confirmed (Kautonen, van Gelderen, et al., 2015). The examination of the individual antecedents of the TPB shows mixed findings. Significance in findings is influenced by operationalization (Liñán & Chen, 2009) and measurement (Thompson, 2009).

Measurement of EI has varied between single- and multi-item instruments, either existing or created ad hoc (Thompson, 2009). The widespread use of ad hoc EI measurements in entrepreneurship research makes the generalization of findings difficult (Liñán & Chen, 2009). Another contribution to the lack of generalizability of findings is an inadequate description of methods and measures (Thompson, 2009).

A variety of antecedents outside of the TPB has been used to predict EI, such as locus of control, family background, and self-efficacy (Lortie & Castogiovanni, 2015). In addition, variation in EI has been explained by culture (Soria et al., 2016), populations of study (Liñán & Rodríguez-Cohard, 2015), and fields of study (Peprah et al., 2015). Gender, age, and IEO have been reported to influence EI. Women have lower levels of EI than men do (Goktan & Gupta, 2015), are less comfortable with risk-taking (Dawson & Henley, 2015), and require greater social support (Caro-González et al., 2017). Age has been curvilinear (Bohlmann et al., 2017), varied by gender (Dawson & Henley, 2015), negatively associated with EI (Hatak et al., 2015), or not related (Chaudhary, 2017). IEO has been positively associated with EI as a composite construct (Ibrahim & Mas'ud, 2016), with gender and age moderating the relationship (Dawson & Henley, 2015).

Incoherence in conceptualization and measurement within the entrepreneurship research makes hypothesis generation and generalization difficult for a given population. Areas of EI remain understudied, such as validation of the IEO scale (Bolton & Lane, 2012) and the influence of IEO on EI (Koe, 2016). A gap in the literature exists explaining the influence of gender, age, and IEO together on EI. Furthermore, the characteristics and EI of health and wellness coaching students are unknown (Sforzo et al., 2017).

**Entrepreneurial Intention of Health and Wellness Coaching Students**

Little research has been conducted on the EI of healthcare workers or students (Marques et al., 2018; Wall, 2015). Marques et al. (2018) examined the relationship between sociodemographic and professional variables, motivations, cognitive and psychological factors, entrepreneurial skills, internal organizational circumstance, and EI for nurses in Portugal. The sample population was primarily female (79.9%), over the age of 36 (70.9%), and held at least a bachelor's degree (85.3%). Entrepreneurial skills, innovation, risk-taking, and management training were positively related to EI. Being female and older were negatively related to EI. Other studies conducted outside the United States reported innovativeness and risk-taking were positively associated with EI in nurses (Dehghanzadeh et al., 2016; Leblebicioglu, Baysal, & Khorshid, 2018).

Population characteristics of the Marques et al. (2018) sample are similar to expected characteristics of the proposed health and wellness coaching student population in terms of education, gender, and age composition. Expecting antecedents of the EI of health and wellness coaches may be similar to nurses based on population characteristics, a feminized profession (Wolever et al., 2016) within healthcare, may be reasonable. Caution should be used in generalizing EI from nurses to health and wellness coaching students as constructs, measurements (Thompson, 2009), culture (Liñán & Chen, 2009), and population differences (Liñán & Rodríguez-Cohard, 2015) may inhibit generalizability.

**Chapter Summary**

The rapid growth of the health and wellness coaching field led to efforts to professionalize the field by creating the National Board Certification for Health and Wellness Coaching (NBC-HWC) through a rigorous process (Jordan et al., 2015; Wolever et al., 2016).

The introduction of the NBC-HWC certification resulted in training programs revising curricula to comply with national training and education standards, which prepare students for certification eligibility (Jordan et al., 2015). While health and wellness coaching student characteristics are unknown (Sforzo et al., 2017), one-third of practicing health and wellness coaches are self-employed (Wolever et al., 2016), suggesting some portion of students may intend to become self-employed health and wellness coaches. Self-employment as a health and wellness coach requires entrepreneurial competencies (Schwab, 2016; Wall, 2015), which are learned skills (Fayolle & Gailly, 2015; Mandel & Noyes, 2016). Information suggests entrepreneurial education of health and wellness coach training programs is inadequate to prepare students to become self-employed in the field (Arnaert et al., 2018). Knowledge of student characteristics such as EI and IEO is necessary to develop effective entrepreneurial education (Pruett & Şeşen, 2017).

The intention to become self-employed is called EI, which can be predicted using the TPB as a framework (Fayolle & Gailly, 2015). Although entrepreneurial research lacks conceptual, instrument, and measurement cohesion (Chaudhary, 2017; Liñán & Chen, 2009; Thompson, 2009) there is evidence gender (Entrialgo & Iglesias, 2016), age (Halvorsen & Morrow-Howell, 2016), and IEO (Koe, 2016) individually influence the development of EI. Broadly, entrepreneurial research indicates men have higher EI than women do (Goktan & Gupta, 2015); age is negatively associated with EI (Hatak et al., 2015); and the IEO construct and individual dimensions (i.e., innovativeness, proactiveness, and risk-taking) are positively associated with EI (Koe, 2016). In addition, culture (Soria et al., 2016), populations of study (Liñán & Rodríguez-Cohard, 2015), and fields of study (Peprah et al., 2015) have explained variations in EI.

The sociodemographic characteristics of health and wellness coaching students, the students' EIs and orientations, and entrepreneurial education support were unknown (Sforzo et al., 2017). The IEO scale had not been tested with the health and wellness coaching student population. How gender, age, and individual EI work together to influence EI was unknown for this population and in general (Koe, 2016). This research filled identified gaps in the literature by documenting the proportion of health and wellness coaching students intending to become self-employed in the field. Identification of health and wellness coaching students' EI and the influence of gender, age, and IEO extended knowledge of EI research to a new population and relationships of influence. The IEO scale validation was extended to a new population.

The methodology and research design used in this quantitative correlational research are presented next. Beginning with a review of the problem, the next chapter restates the research questions guiding the data collection. Research procedures, including population and sample selection, and instrumentation are described, followed by data collection, data analysis, validity, reliability, and ethical procedures.

Chapter 3: Methodology

Health and wellness coaching is a fast-growing industry where nearly 40% of health and wellness coaches are self-employed (Wolever et al., 2016). Due to the nascency of the industry, efforts to professionalize the field through the creation of standards, definitions, and coaching competencies compete with efforts to develop effective entrepreneurial education content (Jordan et al., 2015). Perceived gaps in nursing entrepreneurial education content suggest training programs in health and allied fields need to develop effective entrepreneurial education content to meet student needs (Arnaert et al., 2018). Knowing the proportion of health and wellness coaching students intending to become self-employed as a health coach and understanding the influence of gender, age, and IEO on students' EI, can aid faculty development of responsive entrepreneurial education content (Pruett & Şeşen, 2017).

The purpose of this quantitative research was to document the EI of health and wellness coaching students and determine the degree of influence by gender, age, and IEO on student EI because little was known about health and wellness coaching students' EI (Sforzo et al., 2017). Much of the prior research on EI was conducted with business students (Liñán & Fayolle, 2015). Faculty can use health and wellness coaching student EI data to develop effective entrepreneurial education content (Pruett & Şeşen, 2017). Collection of data for this quantitative research was guided by the following research question and hypotheses:

Research question: To what degree do gender, age, and IEO, individually and collectively, influence the EI of students in health and wellness coach training programs?

$H1_0$: Gender, age, and IEO, individually and collectively, do not influence the EI of students in health and wellness coach training programs.

H1$_a$: Gender, age, and IEO, individually and collectively, influence the EI of students in

health and wellness coach training programs.

The research methods and design used are described. The purpose of this research is

restated, and the research question and hypotheses addressed are enumerated. Research design

and rationale are presented. Discussion of the research procedures includes the population and

sample selection, instrumentation, data collection and preparation, data analysis, reliability,

validity, and ethical procedures.

<div align="center"><b>Research Design and Rationale</b></div>

The objective of basic research, which can employ quantitative or qualitative methods, is

to add to the knowledge of a phenomenon under investigation (Salkind, 2017). In quantitative

research, quantitative research questions and hypotheses are used to focus the research purpose

(Creswell & Creswell, 2018). Quantitative research questions investigate the relationship

between variables, and quantitative hypotheses predict expected outcomes of the relationship

between variables (Creswell & Creswell, 2018). According to Creswell and Creswell (2018), a

non-directional hypothesis is used when the nature of the relationship between the variables

cannot be predicted by the literature.

A quantitative research methodology is appropriate to investigate quantitative variables

EI, gender, age, and IEO. Quantitative research methodology is used to test theories through the

examination of relationships between quantitative variables (Adams & Lawrence, 2019).

Quantitative variables numerically describe population characteristics and attitudes (Creswell &

Creswell, 2018). The use of the quantitative methodology enables a researcher to measure

variables using non-experimental or experimental research procedures (Adams & Lawrence,

2019). Non-experimental research procedures do not determine causality and are appropriate

where assigning members to a group is not possible (Mertler & Vannatta Reinhart, 2017). One criterion variable (i.e., EI) and three predictor variables (i.e., gender, age, and IEO) were used to test the hypotheses.

Implementation of a correlational design documented the EI of health and wellness coaching students and determined the influence of gender, age, and IEO on EI. Quantitative correlational design is appropriate for studies seeking to calculate the degree of relationship between two or more quantitative variables (Creswell & Creswell, 2018). Measuring the variables of a group of individuals is a way to investigate the relationship between the variables (Gravetter & Wallnau, 2015). A quantitative correlational design is non-experimental research used where the assignment of members to a group is not possible (Mertler & Vannatta Reinhart, 2017). This design predicts membership in a group and cannot provide evidence of a causal relationship between gender, age, IEO, and EI.

For the purposes of this study, EI was defined as the student's intention to practice as a self-employed health and wellness coach at any point after program completion. Gender was defined as the participant's identification as female or male, which could have been interpreted by the participant as biological sex or gender identity. Age was defined as the number of years a participant has lived at the time of instrument completion. IEO was defined as the level of pro-entrepreneurial attitudes within three dimensions, innovativeness, proactiveness, and risk-taking (Bolton & Lane, 2012).

Quantifying factors influencing the EI of health and wellness coaching students using a postpositivist approach was the rationale for using a quantitative correlational research design to address the research problem. A postpositivist approach seeks to quantify outcome influencers through research question variables and hypothesis testing (Creswell & Creswell, 2018). The

research objective, to determine the influence of gender, age, and IEO on EI, was supported by the research question. Quantifying EI, gender, age, and IEO allowed for hypothesis testing to determine how much influence the predictor variables exert on the criterion variable.

A quantitative correlational research design was used to address suitability, time, cost, and access constraints. Experimental and quasi-experimental research designs were not suitable because those designs determine causality through assignment to treatment groups, whereas here, the determination of the strengths of relationships within one group without the use of treatment was sought (Creswell & Creswell, 2018). Based on the quantitative correlational research design, a survey method of data collection was chosen to enable completing the data collection from a distant geographic location. Creswell and Creswell (2018) argued Internet-based survey delivery provides access to participants not in geographic proximity, lowering research costs, and increasing access to participants, which increased the likelihood of obtaining an adequate sample size. An Internet-based survey was used to collect data.

Research on EI commonly uses a quantitative correlational design to predict the antecedents of EI using the TPB (Liñán & Fayolle, 2015). Liñán and Fayolle (2015) declared the most commonly referenced theory for EI research published between 2004 and 2013 was the TPB. Koe (2016) examined the influence of IEO on EI using the Bolton and Lane (2012) IEO scale to test the TPB. Perez-Quintana et al. (2017) used multiple regression to predict the EI of university students by examining gender, gender-role orientation, and age, among other variables.

## Research Procedures

Research procedures for quantitative correlational survey research include the population and sample selection, instrumentation, data collection, and data preparation (Creswell &

Creswell, 2018). Describing research procedures in detail increases research credibility (Salkind, 2017). The following research procedures describe the population and sample selection, instrumentation, data collection, and data preparation in detail.

**Population and Sample Selection**

The target population consisted of approximately 150 students enrolled in a Health and Wellness Coaching graduate program at a private, nonprofit, graduate school of alternative medicine on the East Coast. This site was chosen because the program prepares students to test for the NBHWC certification exam and has a large enrollment compared to similar programs elsewhere. Other regionally accredited NBHWC eligible health and wellness coaching programs typically have enrollments of 10-25 students.

A single-stage, cross-sectional, purposive, total population sampling method was used to sample all students. When a small number of cases is being investigated for a population with characteristics of interest, a total population sample is appropriate (Leedy & Ormrod, 2019). Based on an a priori power analysis, to achieve a statistical power of 80% for detecting an effect size of .35 at a probability level of .05, at least 36 cases were needed to be eligible for data analysis (Field, 2017). Using the total population sample, at least a 24% response rate was necessary to support inferential statistical analyses.

The sampling frame consisted of all students majoring in the Health and Wellness Coaching graduate program, who were aged 18 years or older and enrolled in a course at the time of data collection. Students younger than 18 and students not enrolled in coursework were excluded. Conditional site approval was granted by the university (see Appendix A). The university agreed to recruit the student participants and did not supply student email addresses or names.

Participants were recruited through email by the university. The recruitment email began with an introduction, discussed the voluntary nature of participation and confidentiality measures, and contained a link to the survey (see Appendix B). Qualtrics survey software hosted the Internet-based survey, which reiterated the introduction in the recruitment email and discussed consent to participate (see Appendix C). To participate, students indicated consent by checking "I consent, begin survey," and clicking the survey button. Demographic information was self-reported through the survey instrument.

**Instrumentation**

Data were collected using an Internet-based survey instrument. The IEO scale (Bolton & Lane, 2012) was used to measure the IEO of health and wellness coaching students. Bolton and Lane (2012) designed the IEO scale to measure the IEO level of college students. In addition to the IEO scale, the Internet-based survey was used to collect other study variables (i.e., EI, gender, and age) and demographic data (i.e., program of enrollment and ethnicity). See Appendix C for the survey instrument.

**IEO scale.** IEO was measured using the IEO scale, which is a validated instrument developed by Bolton and Lane (2012) to measure the IEO of college students. Ten closed-ended questions comprised three factors of the IEO scale, innovativeness (four items), proactiveness (three items), and risk-taking (three items). The IEO variable was measured as the mean score of the 10-item, 5-point Likert-type scale values ranging from strongly disagree (1) to strongly agree (5). The innovativeness, proactiveness, and risk-taking subscales were measured as the mean score of the respective items, 5-point Likert-type scale values ranging from strongly disagree (1) to strongly agree (5).

The IEO scale was tested on 1,012 undergraduate students at a U.S. university and internal reliability and validity, as well as external validity, were established Bolton and Lane (2012). Cronbach's alpha scores for the 3 factors, which all exceeded .7, were reported as a demonstration of internal consistency. Factor analysis confirmed 3 components extracted with eigenvalues ranging between .51 to .87, accounting for 60% of the total variance. Construct validity was demonstrated through an analysis of correlations between the subscale items with other measures of entrepreneurial propensity. A significant correlation was found between IEO subscales and entrepreneurial propensity measurements.

All items comprising the instrument were chosen for appropriateness to the design. Consistent with similar studies, EI was measured with a single question (Çera et al., 2018). Prior research has tested the relationship between EI and IEO in university students using the IEO scale (Koe, 2016). The IEO scale was developed with a population of U.S. university students similar to the population under study (Bolton & Lane, 2012). See Appendix D for permission to use the IEO scale.

**Data Collection**

Survey information was collected electronically through Qualtrics survey software. A recruitment email containing an introductory statement, voluntariness, confidentiality, and survey link was sent to each participant's university email address (Appendix B). The introductory statement was repeated, and the request for consent language was contained in the Internet-based survey (Appendix C). Introductory statement and request for consent contained information about the risks associated with participation, voluntary participation, and discontinuance possible at any time. Creswell and Creswell (2018) advised research protocols to be designed to protect the anonymity of participants. Data were collected anonymously, and the

Qualtrics anonymize response feature was used to provide a de-identified data file excluding participant identity and IP address. Collected deidentified data were stored on a password-protected desktop computer and scheduled to be destroyed after three years per the American College of Education's and/or research site protocols or research/data security policies.

The data collection period was three weeks. A reminder was sent after the first week and then again after the second week. Participants exited the survey by (a) opting out by not responding to the recruitment email or opting out on the consent page of the survey, (b) entering, but not submitting survey data and letting the collection period expire, or (c) submitting the survey during the collection period. No debriefing was provided, but participants could make contact at any point before, during, or after the data collection to ask questions.

**Data Preparation**

Data were exported from Qualtrics using the export to SPSS function. Mertler and Vannatta Reinhart (2017) suggested data need to be screened prior to analysis to ensure the accuracy of the collected data. SPSS (Version 26.0) was used to transform and screen data before analysis. A total IEO score and specific IEO sub scores for innovativeness, proactiveness, and risk-taking were created by calculating the response value mean for corresponding items.

<div align="center">

**Data Analysis**

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The purpose of the data analyses was to determine the influence of gender, age, and IEO of health and wellness coaching students on EI. The appropriate statistical procedure to determine the relationship among a set of variables is multiple regression (Mertler & Vannatta Reinhart, 2017). Multiple regression was used to investigate whether gender, age, and IEO predicted the EI of a health and wellness coaching student (i.e., student desire to be a self-

employed health and wellness coach). Data screening and analyses were performed using SPSS (Version 26.0) and Intellectus Statistics version 2019.

Before the analysis, the prepared data were screened. A frequency distribution was conducted on all variables to screen for participation criteria and missing data. There were no responses containing values of less than 18 years of age. An evaluation of the severity and likely impact to analysis was performed for variables with missing values.

Checks for dataset suitability for analysis included examining the number of eligible cases and assumptions for linear regression, including linearity, normality, homoscedasticity, multicollinearity, outliers, and autocorrelation. An a priori power analysis indicated to achieve a statistical power of 80% for detecting an effect size of .35 at a probability level of .05, at least 36 cases needed to be eligible for data analysis (Field, 2017). The normality of residuals was examined with a visual assessment of a Q-Q scatterplot (Field, 2017). Homoscedasticity was examined with a scatterplot for a lack of underlying relationship between the residuals and the fitted values (Bates, Mächler, Bolker, & Walker, 2015; Field, 2017; Osborne & Waters, 2002). Variance inflation factors (VIFs) of less than 10 were used to establish the absence of multicollinearity (Menard, 2010). Outliers were determined as any case having a studentized residual (Field, 2017; Stevens, 2009) exceeding the .999 quantile of a $t$-distribution, with the degrees of freedom being $n - 1$, where $n$ is the sample size.

Descriptive and inferential analysis were presented for all quantitative data collected. Frequencies of all variables were given. The hypothesis, which is gender, age, and IEO, individually and collectively, influence the EI of students in health and wellness coach training programs, was tested using multiple regression. Multiple regression was used to investigate which predictor variables (i.e., gender, age, and IEO) are predictors of EI to work as a self-

employed health and wellness coach. A forced entry method of regression was used to force all predictors into the model simultaneously, which is a suitable approach for theory testing, according to Field (2017).

Model summary, ANOVA table, and table of coefficients output were used to test hypotheses and determine model success. An $F$-test was used to assess the prediction of the dependent variable by the collective set of independent variables. The hypothesis was accepted if the ANOVA $F$-test indicated significant F change for predictor variables at a significance level of $p < .05$, where tolerances exceeded 0.1 (Mertler & Vannatta Reinhart, 2017). $R^2$ determined the amount of variance in the dependent variable accounted for by the set of independent variables. A $t$-test was used to evaluate the significance of each predictor, and beta coefficients were used to evaluate the degree of prediction for each independent variable. The dependent variable increased or decreased by the degree of the unstandardized beta coefficient for every one-unit increase in a significant predictor.

**Reliability and Validity**

Addressing threats to reliability and validity through research design helps ensure correct conclusions can be drawn from the collected data (Creswell & Creswell, 2018). Reliability and internal validity were addressed by using a previously validated instrument to measure IEO. Bolton and Lane (2012) tested the reliability and validity of the IEO scale with 1,102 college students. The reliability of scale items was determined by retaining items with a Cronbach's alpha score of .7 or higher. Factor analysis confirmed the retained items loaded onto three distinct factors (i.e., innovativeness, proactiveness, and risk-taking subscales), demonstrating internal validity. Construct validity was determined by the significant correlation between innovativeness, proactiveness, and risk-taking subscales with EI.

The reliability of collected data was established through internal consistency analysis using Cronbach's alpha (Mertler & Vannatta Reinhart, 2017). Construct validity of the IEO scale was established through factor analysis (Mertler & Vannatta Reinhart, 2017). Statistical validity of the linear regression analysis was addressed by attaining a sample size adequate to achieve statistical power for hypothesis testing (Machin, Campbell, Tan, & Tan, 2018) and meeting the assumptions for linear regression analysis (Mertler & Vannatta Reinhart, 2017).

A threat to external validity is the selection of participants with narrow characteristics, which limits the generalizability of findings (Creswell & Creswell, 2018). Health and wellness coaching students in programs eligible for graduates to test for the NBHWC certification exam was a defining characteristic of the target population. Because non-certified coaching programs do not directly prepare students to test for the NBHWC certification exam, there may be a difference in the EI of students choosing between the different career preparation paths. To address the threat to external validity, claims are restricted to the target population (Creswell & Creswell, 2018).

## Ethical Procedures

All research involving human subjects is governed by the U.S. Code of Federal Regulations (45 CFR 46), which calls for the protection of the rights and welfare of human subjects in research (U.S. Department of Health and Human Services, 2018). Data collection procedures were designed to meet all legal requirements and ethical standards as specified in the Belmont Report (National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research, 1978). Protections of human subjects included obtaining Institutional Review Board (IRB) approval before collecting data, providing participants with enough information to reach an informed decision, no use of deception, and use of a protocol minimizing

participant risk. Participants received informed consent in the recruitment email and again at survey link prior to accessing the survey instrument.

The IRB's role is to review and approve human subjects research, ensuring the research meets federal regulations and institutional ethical standards (U.S. Department of Health and Human Services, 2018). Before data collection began, IRB approval from the American College of Education (Appendix E) was obtained. A recruitment email explained the purpose, requirements of participation, confidentiality measures, and information regarding the informed consent process. Participants were informed participation was voluntary, anonymous, and confidential. Consent to participate was obtained from participants before participation.

To protect participants' privacy, participant identity was unknown to the researcher, and no identifying data, such as name or contact information, were collected through the survey instrument (Creswell & Creswell, 2018). Variables and demographic information, including gender, age, and ethnicity, cannot be used to identify specific individuals. Individuals choosing to participate in the survey were anonymous. Collected data were securely stored on a password-protected desktop computer with restricted access. After the dissertation process, aggregated data results were made available to all interested parties, including university faculty and students, through the publication of the dissertation in ProQuest. Data are scheduled to be destroyed after three years per the American College of Education protocols and research/data security policies.

Affiliation did not exist with the data collection site, its faculty, or students. Compensation was not received for the research project. No conflicts of interest existed.

## Chapter Summary

This quantitative correlational methodology was meant to document the EI of health and wellness coaching students and determine the degree of influence exerted by gender, age, and

IEO of students on EI. The research methodology employed Internet-based data collection and descriptive statistics and linear regression for data analyses. Discussion of the method included a rationale for the research design, appropriateness of the quantitative correlational design, and research procedures. Research procedures described the population and sample selection, instrumentation, data collection, and data preparation. Data analysis procedures using multiple regression, the plan to address reliability and validity, and the ethical procedures for the treatment of human subjects were described. Discussion of data analysis results, and the findings, interpretations, and conclusions follow.

Chapter 4: Research Findings and Data Analysis Results

The purpose of this research was to document the EI of health and wellness coaching students and determine the influence of gender, age, and IEO of students to aid faculty development of effective entrepreneurial education. A quantitative correlational design was employed to determine whether gender, age, and IEO influence EI. This chapter begins with a restatement of the research question and hypotheses, followed by an explanation of the data collection procedures, data analyses and results, a discussion of the reliability and validity of the measures, and a concluding summary. The following research question and hypotheses guided the research:

Research question: To what degree do gender, age, and IEO, individually and collectively, influence the EI of students in health and wellness coach training programs?

$H1_0$: Gender, age, and IEO, individually and collectively, do not influence the EI of students in health and wellness coach training programs.

$H1a$: Gender, age, and IEO, individually and collectively, influence the EI of students in health and wellness coach training programs.

**Data Collection**

The target population from which participants for this research were drawn consisted of students enrolled in a Health and Wellness Coaching graduate program at an East Coast university. A total population sampling method was used, including all students enrolled in the target programs in the fall 2019 trimester. After IRB approval, university personnel identified 111 students meeting the participation criteria (i.e., 18 years of age or older and enrolled in coursework). The university sent a recruitment email (Appendix B) to potential participants,

which contained a link to the Internet-based survey on Qualtrics. Reminder emails were sent to all potential participants one week and two weeks after the initial recruitment email.

By the end of the 3-week data collection period, 29 survey responses were received, yielding a 26.1% response rate. Of the 29 responses, 1 participant did not consent to participate, 3 participants did not complete the survey, and 1 participant did not provide age, resulting in exclusion from analysis. After exclusions, the total number of survey responses viable for analyses was 24.

The number of responses (24) did not meet the minimum sample size required (36) for linear regression data analyses. A second research site was identified to acquire additional data. The second research site was a national health and wellness certifying organization, and the target population was certified health and wellness coaches who had completed an approved health and wellness coach training program within 12 months of the data collection period. The IRB approved the additional research site and modifications to the data collection protocol. See Table 4 for a summary of research sites and target populations.

All 2,348 certified coaches were sent a recruitment email (Appendix F) by the national certifying organization because the organization was unable to isolate training completion dates. The recruitment email contained a link to the Internet-based survey (Appendix G) on Qualtrics, which included a screening question to determine eligibility. The survey was open for nine days, and no reminder email was sent.

By the end of the one-week data collection period, a total of 265 survey responses were received, yielding an 11.3% response rate. Of the 265 responses, 1 participant did not specify when training was completed, 20 participants did not complete the survey, and 204 participants

78

completed training more than 12 months ago, resulting in exclusion from analysis. After

exclusions, the total number of survey participants from the second research site was 40.

Table 4

*Summary of Research Sites and Target Populations*

| Research Site | Target Population | Group |
| --- | --- | --- |
| East Coast university | Students enrolled in a health and wellness coaching graduate program | Current students |
| National health and wellness certifying organization | Certified health and wellness coaches who had completed an approved health and wellness coach training program within 12 months | Recent students |

## Data Analysis and Results

The quantitative health and wellness coaching student survey was used to determine the

EI of health and wellness coaching students and identify the influence of gender, age, and IEO

on EI. Eleven survey questions identified IEO and EI, while the other questions identified

demographic characteristics. Before conducting data analyses, the two data samples were

combined and then screened for missing variables and outlier cases.

The sample representativeness for each group was determined by comparing the sample

to population characteristics. Descriptive statistics summarize the dataset by measures of central

tendency and variability. Criterion and predictor variables were analyzed independently and

compared by group differences. Final analyses were performed on the combined populations.

Inferential statistics answer the research questions and test hypotheses.

### Data Screening

Data were screened for missing variables. Variable INV4 was missing one case, the value

of which was imputed with the average of INV1, INV2, and INV3 for the case. An age range

between 24 to 75 years contained expected values. Outliers were examined for age and IEO. A

univariate outlier was defined as all values falling outside the mean by a range of $\pm 3.29$ *SD*. The

presence of univariate outliers was not found in age and IEO. One multivariate outlier was

identified and removed, resulting in 63 cases for statistical analyses.

**Sample Representativeness**

To determine sample representativeness, population and sample characteristics were

compared for the first group of participants (i.e., current students). The population was primarily

enrolled in the MA Health and Wellness Coaching program ($n = 67$, 60.4%), female ($n = 107$,

96.4%), and White ($n = 65$, 58.6%). Population demographic characteristics are displayed in

Table 5, and sample demographic characteristics are displayed in Table 7. Sample

representativeness could not be determined because population characteristics were not available

for the second group of participants (i.e., recent students).

Table 5

*Current Students Population Demographic Characteristics*

| Variable | *n* | % |
|---|---|---|
| Program of enrollment | | |
| MA Health and Wellness Coaching | 67 | 60.4 |
| Certificate of Health and Wellness Coaching | 44 | 39.6 |
| Gender | | |
| Male | 4 | 3.6 |
| Female | 107 | 96.4 |
| Ethnicity | | |
| American Indian or Alaska Native | 4 | 3.6 |
| Asian | 3 | 2.7 |
| Black or African American | 26 | 23.4 |
| Hispanic | 3 | 2.7 |
| Native Hawaiian or Pacific Islander | 1 | 0.9 |
| White | 65 | 58.6 |
| Two or more races | 2 | 1.8 |
| Non-resident alien | 3 | 2.7 |
| Unknown | 4 | 3.6 |

Sample representativeness was determined by ethnic groups (groups less than 10% of the population were combined into the "Other" category). A Chi-square goodness of fit test determined the proportion of students within ethnic groups identified in the current sample compared with the sample population was not significantly different, based on $\alpha = 0.05$, $\chi^2(2) = 0.518$, $p = .772$. This finding suggests the sample was representative of the population's ethnic groups (Table 6).

Table 6

*Chi-Square Goodness of Fit Test for Ethnic Groups*

| Ethnic Groups | Observed Frequency | Expected Frequency | $\chi^2$ | DF | p |
|---|---|---|---|---|---|
| Other | 3 | 4.1 | 0.518 | 2 | 0.772 |
| Black or African American | 5 | 5.4 | | | |
| White | 15 | 13.5 | | | |

**Descriptive Statistics**

The characteristics of the sample are described by frequency and percentages for categorical demographic variables (Table 7) and by summary statistics (i.e., mean [$M$], $SD$, number [$n$], standard error of measurement [$SE_M$], minimum [Min], maximum [Max], skewness, and kurtosis) for interval and ratio variables, displayed in Tables 8-10 for current students, recent students, and total students, respectively. Demographic variables included the program of enrollment, training graduation, gender, and ethnicity. Respondents were primarily recent students ($n = 40$, 63.5%). A majority of the respondents were female ($n = 60$, 95.2%). The major ethnic group was White ($n = 52$, 82.5%). The mean age was 43.89 years ($SD = 12.00$).

Table 7

*Frequency Table for Sample Demographic Characteristics*

| Variable | Current Students | | Recent Students | | Total | |
|---|---|---|---|---|---|---|
| | *n* | % | *n* | % | *N* | % |
| Program of enrollment | | | | | | |
| MA Health and Wellness Coaching | 21 | 91.3 | – | – | – | – |
| Certificate of Health and Wellness Coaching | 2 | 8.7 | – | – | – | – |
| Training graduation | | | | | | |
| Within the last 6 months | – | – | 6 | 15.0 | – | – |
| Within the last 12 months | – | – | 34 | 85.0 | – | – |
| Gender | | | | | | |
| Male | 0 | 0 | 3 | 7.5 | 3 | 4.8 |
| Female | 23 | 100.0 | 37 | 92.5 | 60 | 95.2 |
| Ethnicity | | | | | | |
| American Indian or Alaska Native | 0 | 0 | 0 | 0 | 0 | 0 |
| Asian | 1 | 4.4 | 0 | 0 | 1 | 1.6 |
| Black or African American | 5 | 21.7 | 2 | 5.0 | 7 | 11.1 |
| Hispanic | 0 | 0 | 0 | 0 | 0 | 0 |
| Native Hawaiian or Pacific Islander | 0 | 0 | 0 | 0 | 0 | 0 |
| White | 15 | 65.2 | 37 | 92.5 | 52 | 82.5 |
| Two or more races | 2 | 8.7 | 1 | 2.5 | 3 | 4.7 |
| Non-resident alien | 0 | 0 | 0 | 0 | 0 | 0 |
| Group | | | | | | |
| Current students | – | – | – | – | 23 | 36.5 |
| Recent students | – | – | – | – | 40 | 63.5 |

*Note.* Rounding errors prevent ethnicity percentages from totaling 100%.

**Current students.** Interval and ratio variables included age, EI, IEO, INV, PRO, and RSK (Table 8). The average age was 40.43 years ($SD = 11.11$). EI had an average score of 6.09 ($SD = 1.00$). The IEO scale had an average score of 4.00 ($SD = 0.46$). Scores for the IEO subscales, INV, PRO, and RSK had an average of 3.89 ($SD = 0.68$), 4.35 ($SD = 0.66$), and 3.80 ($SD = 0.65$), respectively.

Table 8

*Current Students Summary Statistics for Scale Variables*

| Variable | $n$ | $M$ | $SD$ | $SE_M$ | Min | Max | Skewness | Kurtosis |
|---|---|---|---|---|---|---|---|---|
| Age | 23 | 40.43 | 11.11 | 2.32 | 24.00 | 63.00 | 0.19 | -0.96 |
| EI | 23 | 6.09 | 1.00 | 0.21 | 4.00 | 7.00 | -0.46 | -1.24 |
| IEO | 23 | 4.00 | 0.46 | 0.10 | 2.80 | 4.60 | -0.77 | 0.21 |
| INV | 23 | 3.89 | 0.68 | 0.14 | 2.75 | 4.75 | -0.27 | -1.30 |
| PRO | 23 | 4.35 | 0.66 | 0.14 | 2.33 | 5.00 | -1.35 | 1.94 |
| RSK | 23 | 3.80 | 0.65 | 0.14 | 2.33 | 5.00 | -0.15 | -0.51 |

*Note.* EI = entrepreneurial intention; IEO = individual entrepreneurial orientation; INV = innovativeness; PRO = proactiveness; RSK = risk-taking.

**Recent students.** Interval and ratio variables included age, EI, IEO, INV, PRO, and RSK (Table 9). The average age was 45.88 years ($SD$ = 12.18). EI had an average score of 4.45 ($SD$ = 2.17). The IEO scale had an average score of 3.81 ($SD$ = 0.60). Scores for the IEO subscales, INV, PRO, and RSK, had an average of 3.56 ($SD$ = 0.81), 4.47 ($SD$ = 0.51), and 3.48 ($SD$ = 1.01), respectively.

Table 9

*Recent Students Summary Statistics for Scale Variables*

| Variable | $n$ | $M$ | $SD$ | $SE_M$ | Min | Max | Skewness | Kurtosis |
|---|---|---|---|---|---|---|---|---|
| Age | 40 | 45.88 | 12.18 | 1.93 | 25.00 | 75.00 | 0.14 | -0.50 |
| EI | 40 | 4.45 | 2.17 | 0.34 | 1.00 | 7.00 | -0.23 | -1.46 |
| IEO | 40 | 3.81 | 0.60 | 0.09 | 2.70 | 5.00 | 0.21 | -0.55 |
| INV | 40 | 3.56 | 0.81 | 0.13 | 2.00 | 5.00 | 0.16 | -0.63 |
| PRO | 40 | 4.47 | 0.51 | 0.08 | 3.33 | 5.00 | -0.39 | -1.14 |
| RSK | 40 | 3.48 | 1.01 | 0.16 | 1.00 | 5.00 | -0.55 | -0.34 |

*Note.* EI = entrepreneurial intention; IEO = individual entrepreneurial orientation; INV = innovativeness; PRO = proactiveness; RSK = risk-taking.

**Total.** Interval and ratio variables included age, EI, IEO, INV, PRO, and RSK (Table 10). The average age was 43.89 years ($SD$ = 12.00). EI had an average score of 5.05 ($SD$ = 1.99). The IEO scale had an average score of 3.88 ($SD$ = 0.56). Scores for the IEO subscales, INV,

PRO, and RSK, had an average of 3.68 (*SD* = 0.78), 4.43 (*SD* = 0.56), and 3.60 (*SD* = 0.90),

respectively.

Table 10

*Total Summary Statistics for Scale Variables*

| Variable | *n* | *M* | *SD* | *SE*$_M$ | Min | Max | Skewness | Kurtosis |
|---|---|---|---|---|---|---|---|---|
| Age | 63 | 43.89 | 12.00 | 1.51 | 24.00 | 75.00 | 0.20 | -0.56 |
| EI | 63 | 5.05 | 1.99 | 0.25 | 1.00 | 7.00 | -0.71 | -0.81 |
| IEO | 63 | 3.88 | 0.56 | 0.07 | 2.70 | 5.00 | -0.10 | -0.50 |
| INV | 63 | 3.68 | 0.78 | 0.10 | 2.00 | 5.00 | -0.04 | -0.82 |
| PRO | 63 | 4.43 | 0.56 | 0.07 | 2.33 | 5.00 | -1.00 | 1.33 |
| RSK | 63 | 3.60 | 0.90 | 0.11 | 1.00 | 5.00 | -0.68 | 0.20 |

*Note.* EI = entrepreneurial intention; IEO = individual entrepreneurial orientation; INV = innovativeness; PRO = proactiveness; RSK = risk-taking.

**Analysis of Gender**

EI was compared by gender (*N* = 63); the EI scores were *M* = 2.67, *SD* = 2.08 (males)

and *M* = 5.17, *SD* = 1.92 (females). A two-tailed Mann-Whitney two-sample rank-sum test was

performed to detect significant differences in EI between gender. The result was significant

based on $\alpha$ = 0.05, *U* = 150, *z* = -1.99, *p* = .047 (Table 11). Mean ranks for females (*M* = 33.00)

and males (*M* = 12.00) showed the females' distribution of EI was significantly different from

the males' distribution. Median was significantly larger for females (*Mdn* = 6.00) than males

(*Mdn* = 2.00). A boxplot of the ranks of EI by gender is displayed in Figure 2.

Table 11

*Two-Tailed Mann-Whitney Test for EI by Gender*

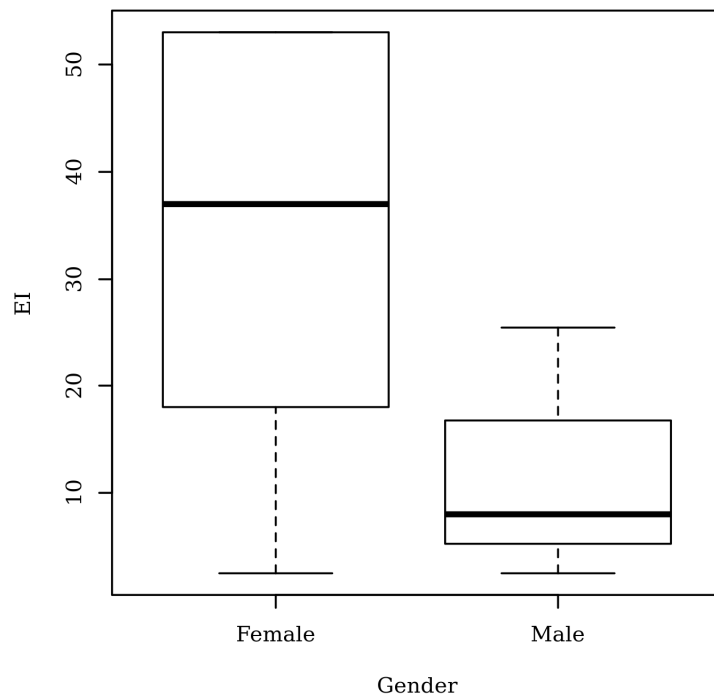| | Mean Rank | | | | |
|---|---|---|---|---|---|
| Variable | Female | Male | *U* | *z* | *p* |
| EI | 33.00 | 12.00 | 150.00 | -1.99 | .047 |

*Figure 2*: Ranks of EI by gender.

**Analysis of Age**

Age was grouped into ranges. Distribution of age by group was 26.6% ($n = 17$) for $< 36$, 54.7% ($n = 35$) for 36-55, and 18.8% ($n = 12$) for $> 55$. See Figure 3 for age group distribution. The mean of EI was calculated for each age group. The mean EI for age groups was 4.82 ($SD = 2.33$) for $< 36$ years, 4.97 ($SD = 1.95$) for 36-55 years, and 5.75 ($SD = 1.55$) for $> 55$ years. Table 12 displays $n$, $M$, and $SD$ for EI by age group.

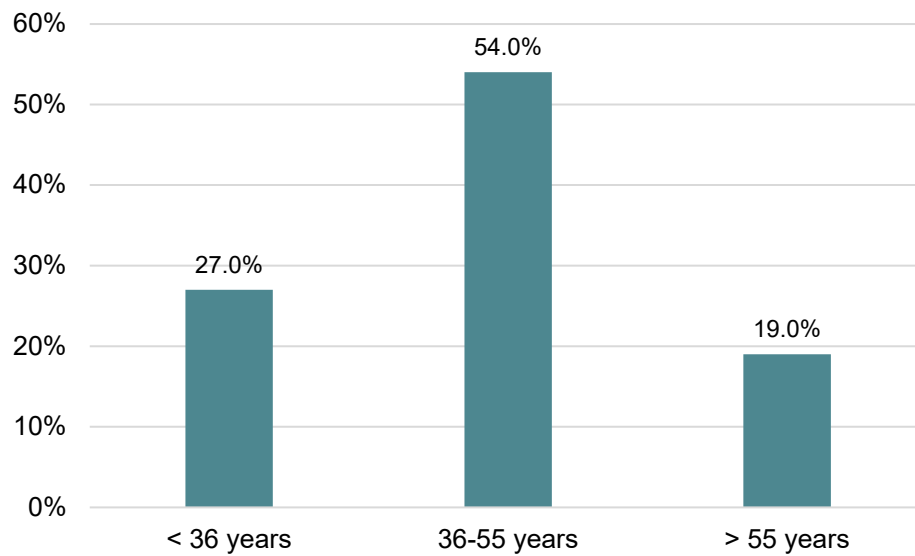*Figure 3*: Age group distribution of participants.

Table 12

*Number, Mean, and SD for EI by Age Group*

|  | | *EI* | |
| --- | --- | --- | --- |
| Age Group | *n* | *M* | *SD* |
| < 36 years | 17 | 4.82 | 2.33 |
| 36-55 years | 34 | 4.91 | 1.94 |
| > 55 years | 12 | 5.75 | 1.55 |

**Analysis of IEO**

IEO was compared by gender. The mean IEO score was $M = 4.10$, $SD = 0.40$ (males) and $M = 3.87$, $SD = 0.56$ (females). Results of a Shapiro-Wilk (SW) test were used to evaluate the normalcy of the distribution of IEO. The normality assumption was met based on non-significant SW test results using $\alpha = 0.05$, $W = 0.99$, $p = .651$.

Levene's test results were used to evaluate whether the variance of IEO was homogeneous among genders. The homogeneity of variance assumption was met for IEO based on non-significant Levene's test results using $\alpha = 0.05$, $F(1, 61) = 0.94$, $p = .335$. Non-significant

two-tailed independent samples *t*-test results using $\alpha = 0.05$, $t(61) = -0.70$, $p = .487$, indicated the null hypothesis could not be rejected, which indicates the IEO mean was not significantly different between genders. Table 13 presents the *t*-test results, and Figure 4 presents a bar plot of the means.

Table 13

*Two-Tailed Independent Samples t-Test for IEO by Gender*

| | Female | | Male | | | | |
|---|---|---|---|---|---|---|---|
| Variable | *M* | *SD* | *M* | *SD* | *t* | *p* | *d* |
| IEO | 3.87 | 0.56 | 4.10 | 0.40 | -0.70 | .487 | 0.47 |

*Note.* IEO = individual entrepreneurial orientation. *N* = 63. Degrees of freedom for the *t*-statistic = 61. *d* indicates Cohen's *d*.
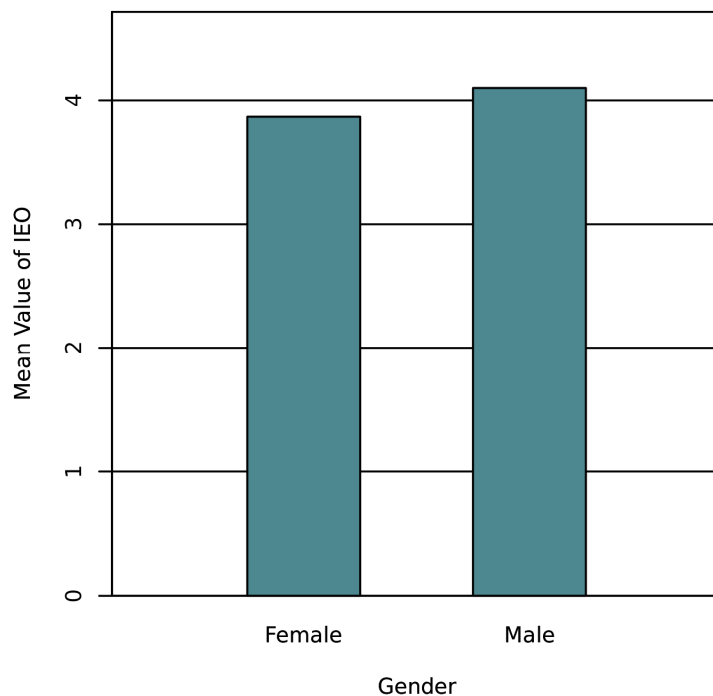


*Figure 4*: IEO means by gender.

The mean of IEO was calculated for age groups. Mean IEO for age groups was *M* = 3.61, *SD* = 0.59 for < 36 years, *M* = 3.90, *SD* = 0.44 for 36-55 years, and *M* = 4.20, *SD* = 0.67 for > 55 years. Table 14 presents *n*, *M*, and *SD* for IEO by age group.

Table 14

*Number, Mean, and SD for IEO by Age Group*

|  | IEO | | |
| --- | --- | --- | --- |
| Age Group | N | M | SD |
| < 36 years | 17 | 3.61 | 0.59 |
| 36-55 years | 34 | 3.90 | 0.44 |
| > 55 years | 12 | 4.20 | 0.67 |

## Group Differences

To determine if there were significant differences in the entrepreneurial characteristics of the two samples, statistical analyses were performed. The statistical analyses used to compare EI and IEO characteristics between the two student groups were the independent samples $t$-test, Mann-Whitney $U$ test, and Welch's $t$-test. Homogeneity of variance and normality assumptions were evaluated with a SW test and Levene's test, respectively.

**EI.** Results of a SW test were used to evaluate the normalcy of the distribution of EI. The normality assumption was met based on significant SW test results using $\alpha = 0.05$, $W = 0.85$, $p <$ .001. Levene's test results were used to evaluate whether the variance of EI was homogeneous among the student groups. Assumption of homogeneity of variance was violated for EI based on significant Levene's test results using $\alpha = 0.05$, $F(1, 61) = 16.83$, $p < .001$.

Welch's $t$-test was used to determine equality of means. The mean of EI was significantly different between groups based on the significant results of the two-tailed independent samples $t$-test using $\alpha = 0.05$, $t(58.81) = 4.08$, $p < .001$. The mean EI of the current students was significantly higher than the EI of the recent students. Table 15 displays $t$-test results, and Figure 5 displays a bar plot of the means. The frequency distribution of EI by group is displayed in Figure 6.

Table 15

*Two-Tailed Independent Samples t-Test for EI by Group*

| Variable | Current | | Recent | | t | p | d |
|---|---|---|---|---|---|---|---|
| | *M* | *SD* | *M* | *SD* | *t* | *p* | *d* |
| EI | 6.09 | 1.00 | 4.45 | 2.17 | 4.08 | < .001 | 0.97 |

*Note.* EI = entrepreneurial intention. *N* = 63. Degrees of freedom for the *t*-statistic = 58.81. *d* indicates Cohen's *d*.
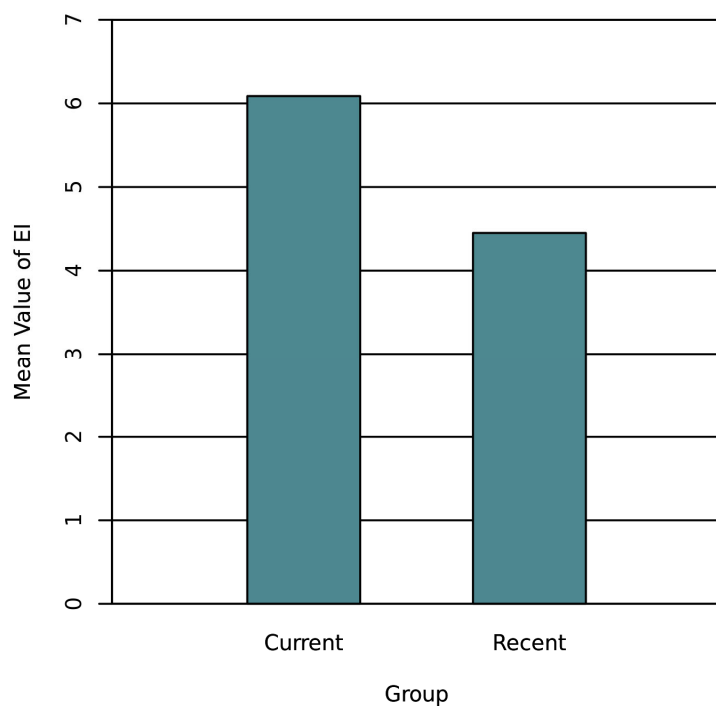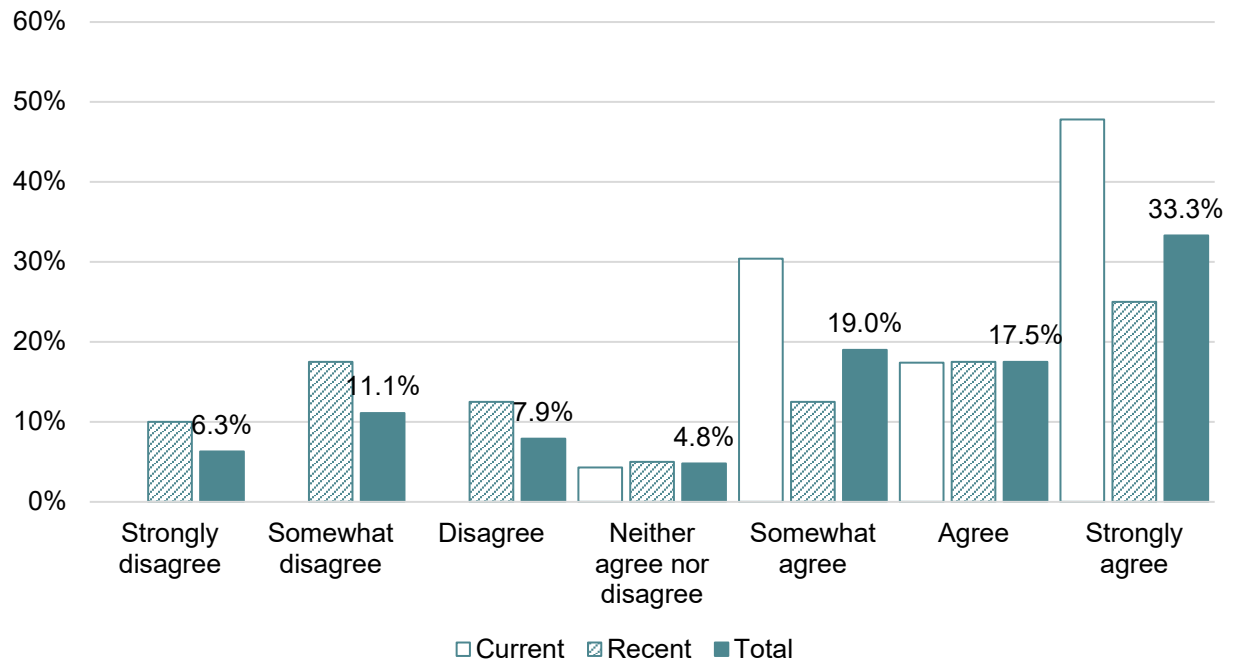


*Figure 5*: EI means by group.

*Figure 6*: Frequency distribution of EI by group for the statement, "I plan(ned) to work as a self-employed health and wellness coach."

To inspect for significant differences in EI between student groups, a two-tailed Mann-Whitney two-sample rank-sum test was performed. The result was significant using $\alpha = 0.05$, $U = 651.5$, $z = -2.81$, $p = .005$. The distribution of EI for the current student group was significantly different from EI for the recent student group based on the mean ranks for current students ($M = 40.33$) and recent students ($M = 27.21$). The median was significantly larger for current students ($Mdn = 6.00$) than recent students ($Mdn = 5.00$). Two-tailed Mann-Whitney $U$ test results are displayed in Table 16, and a boxplot of the ranks of EI by group are displayed in Figure 7.

Table 16

*Two-Tailed Mann-Whitney Test for EI by Group*

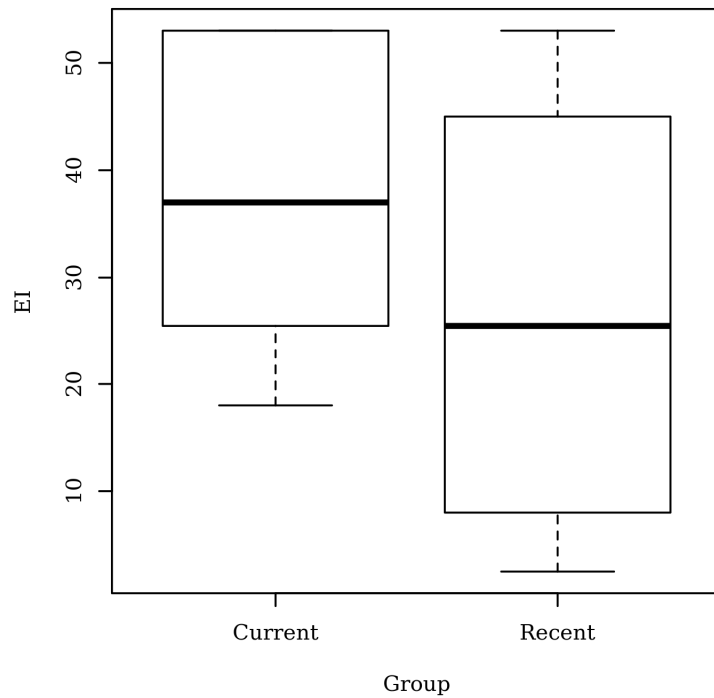| Variable | Mean Rank | | $U$ | $z$ | $p$ |
| | Current | Recent | | | |
|---|---|---|---|---|---|
| EI | 40.33 | 27.21 | 651.50 | -2.81 | .005 |

*Figure 7*: Ranks of EI by group.

**IEO.** Results of a SW test were used to evaluate the normalcy of the distribution of IEO. The normality assumption was met based on non-significant SW test results using $\alpha = 0.05$, $W = 0.99$, $p = .651$. Levene's test results were used to evaluate whether the variance of IEO was homogeneous among the student groups. The homogeneity of variance assumption was met for IEO based on non-significant Levene's test results using $\alpha = 0.05$, $F(1, 61) = 1.81$, $p = .183$. Non-significant two-tailed independent samples *t*-test results using $\alpha = 0.05$, $t(61) = 1.31$, $p = .195$, indicated the mean of IEO between groups was not significantly different. Table 17 displays the *t*-test results, and Figure 8 displays a bar plot of the means.
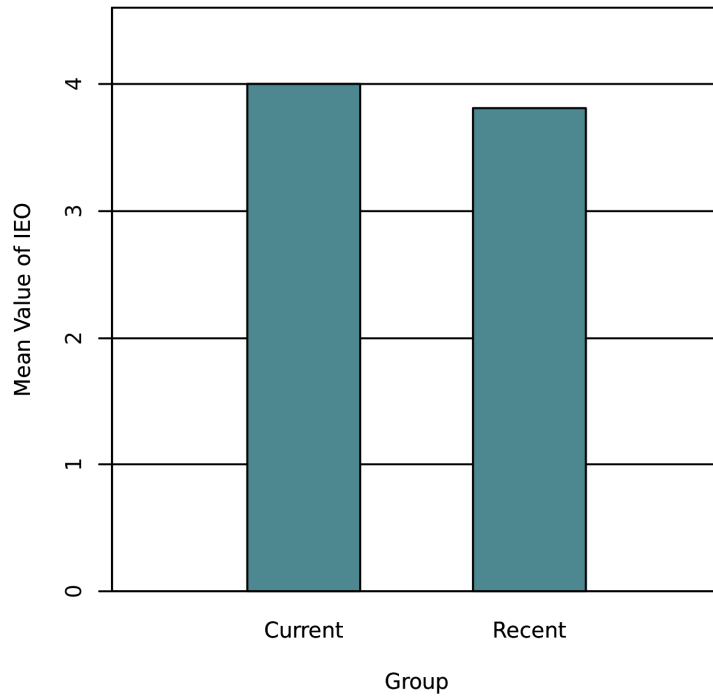
Table 17

*Two-Tailed Independent Samples t-Test for IEO by Group*

| Variable | Current | | Recent | | t | p | d |
|---|---|---|---|---|---|---|---|
| | *M* | *SD* | *M* | *SD* | | | |
| IEO | 4.00 | 0.46 | 3.81 | 0.60 | 1.31 | .195 | 0.35 |

*Note.* IEO = individual entrepreneurial orientation. $N = 63$. Degrees of freedom for the *t*-statistic = 61. *d* indicates Cohen's *d*.



*Figure 8*: IEO means by group.

## Reliability and Validity of the IEO Scale and Subscales

To establish the reliability of the IEO scale and the IEO subscales (INV, PRO, and RSK), a Cronbach's alpha coefficient was calculated for IEO, INV, PRO, and RSK variables. Reliability was rated questionable, acceptable, and good by Cronbach's alpha coefficient scores of > .6, > .7 , and > .8, respectively. Responses from the total data set ($N = 63$) were used to calculate Cronbach's alpha coefficient because groups (i.e., current and recent) had equivalent IEO and subscale ratings.

The 10 IEO items had acceptable reliability ($\alpha = 0.79$). Four INV items had acceptable reliability ($\alpha = 0.77$). Three PRO items had questionable reliability ($\alpha = 0.66$). Three RSK items had good reliability ($\alpha = 0.80$). Results of reliability analysis are displayed in Table 18.

Table 18

*Reliability Table for IEO Scale and Subscales*

| Scale | No. of Items | $\alpha$ | Lower Bound | Upper Bound |
|-------|-------------|----------|-------------|-------------|
| IEO | 10 | 0.79 | 0.71 | 0.86 |
| INV | 4 | 0.77 | 0.68 | 0.86 |
| PRO | 3 | 0.66 | 0.52 | 0.80 |
| RSK | 3 | 0.80 | 0.72 | 0.88 |

*Note.* IEO = individual entrepreneurial orientation; INV = innovativeness; PRO = proactiveness; RSK = risk-taking. A 95% confidence interval was used to calculate the lower and upper bounds of Cronbach's $\alpha$.

## Linear Regression Analyses for Hypotheses Testing

Separate linear regressions were used to examine the research question to assess whether individual predictor variables (i.e., gender, age, and IEO) significantly predicted EI while controlling for group differences. Multiple regression was used to examine the research question to assess whether all predictor variables combined predicted EI while controlling for group differences. Group differences in EI were controlled for by adding group to regression models. All regression analyses were performed using the "Enter" variable selection method.

**Tests of assumptions of linear regression analysis for individual predictor variables.** Data were subjected to the following assumptions to assess validity of results: (a) a linear relationship, (b) normality, (c) little multicollinearity (for multiple regression only), (d) homoscedasticity, (e) no outliers, and (f) no autocorrelation. Linearity between the criterion and each separate predictor variable (i.e., EI-gender and group, EI-age and group, and EI-IEO and group) was determined by visual inspection of Q-Q scatterplots of model residuals (see Figures 9-11) and scatterplots of residuals against the predicted values (see Figures 12-14). The assumption of linearity was met for all relationships.

The assumption of normality was assessed using a Q-Q scatterplot where quantiles of the residuals may not greatly differ from theoretical quantiles because substantial differences might signal unreliable parameter estimates. The Q-Q scatterplots suggest the assumption of normality was met for EI-gender and group and EI-age and group and was violated for EI-IEO and group. Figures 9-11 present Q-Q scatterplots of the model residuals.
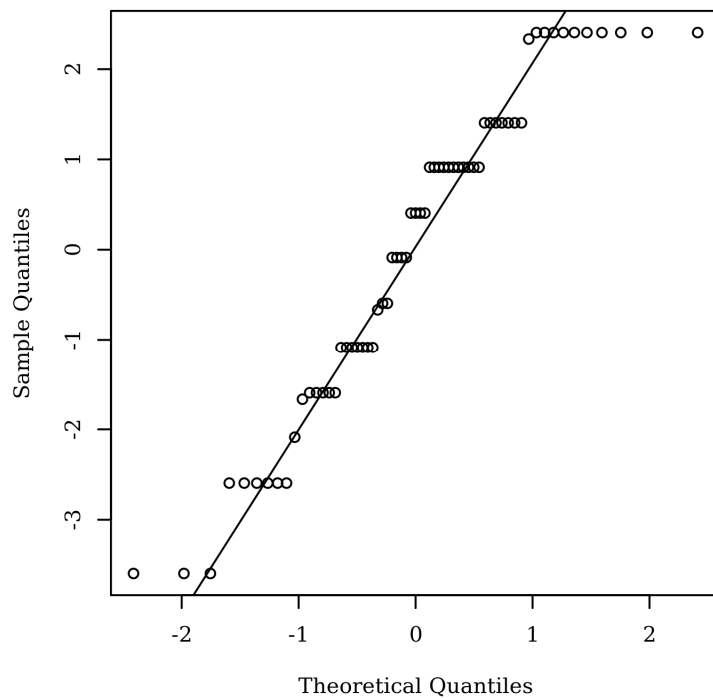


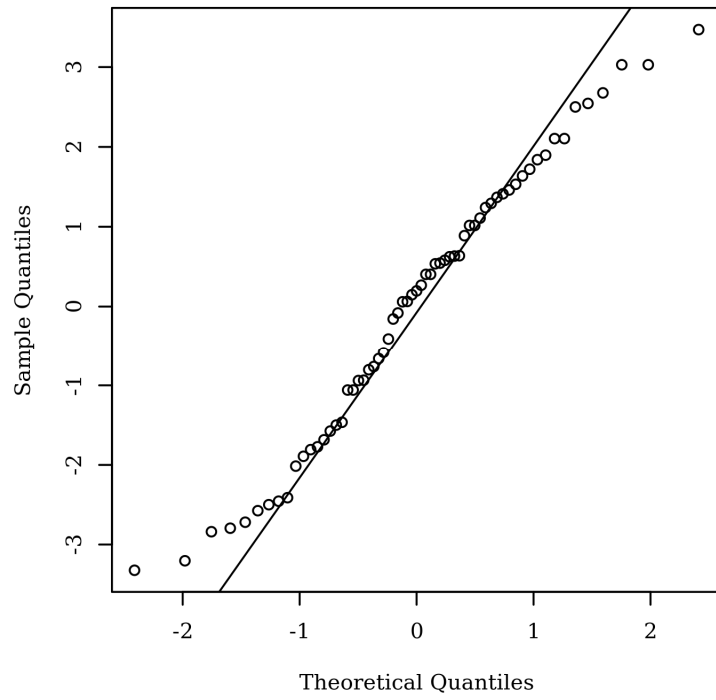*Figure 9:* Q-Q scatterplot for normality of regression model residuals for EI-gender and group.

*Figure 10:* Q-Q scatterplot for normality of regression model residuals for EI-age and group.
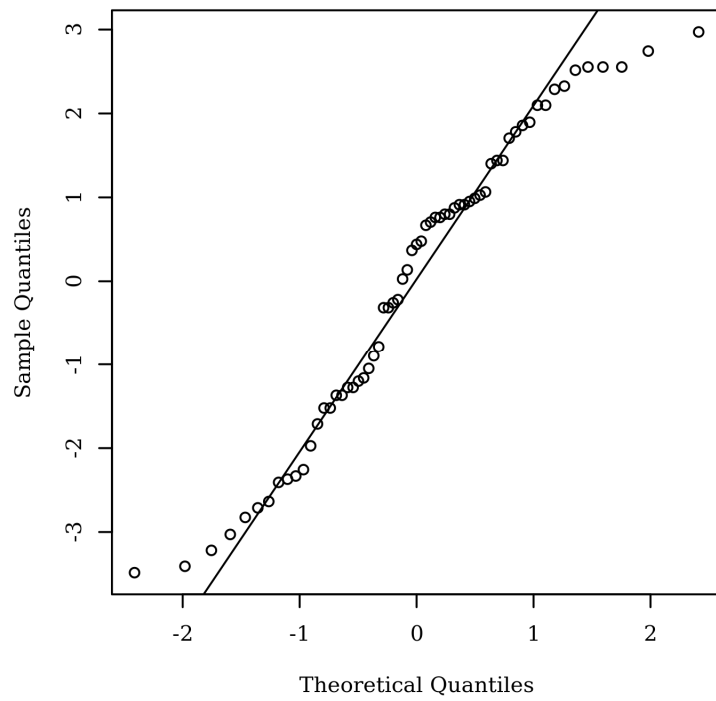


*Figure 11:* Q-Q scatterplot for normality of regression model residuals for EI-IEO and group.

Results of a SW test were used to evaluate the normalcy of the distribution of model residuals. For EI-gender and group, the normality assumption was violated based on significant SW test results using $\alpha = 0.05$, $W = 0.93$, $p = .002$. The normality assumption was met for EI-age and group, based on non-significant SW test results using $\alpha = 0.05$, $W = 0.98$, $p = .230$. For EI-IEO and group, the normality assumption was violated based on significant SW test results using $\alpha = 0.05$, $W = 0.95$, $p = .019$.

Model residuals were plotted against the predicted values to examine homoscedasticity. A random distribution of points with no curvature and a mean of zero was apparent, suggesting the assumption of homoscedasticity was met for EI-gender and group. Points appeared non-randomly distributed for EI-age and group and EI-IEO and group, indicating the assumption was violated. Figures 12-14 display scatterplots of predicted values and model residuals.



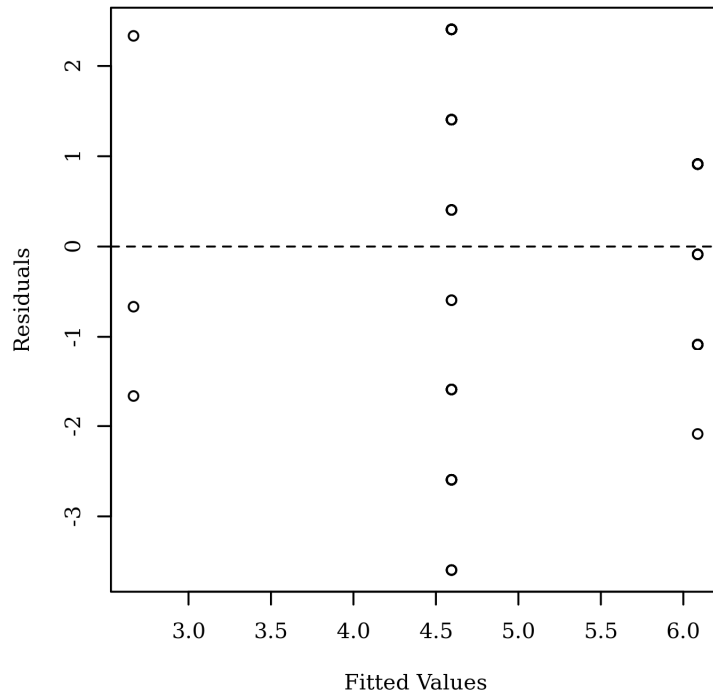*Figure 12*: Residuals scatterplot examining homoscedasticity for EI-gender and group.
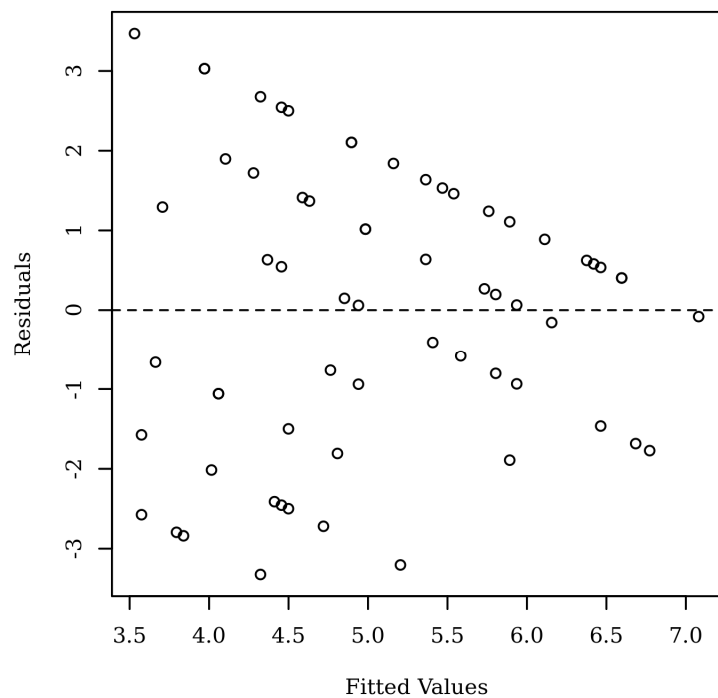
*Figure 13*: Residuals scatterplot examining homoscedasticity for EI-age and group.
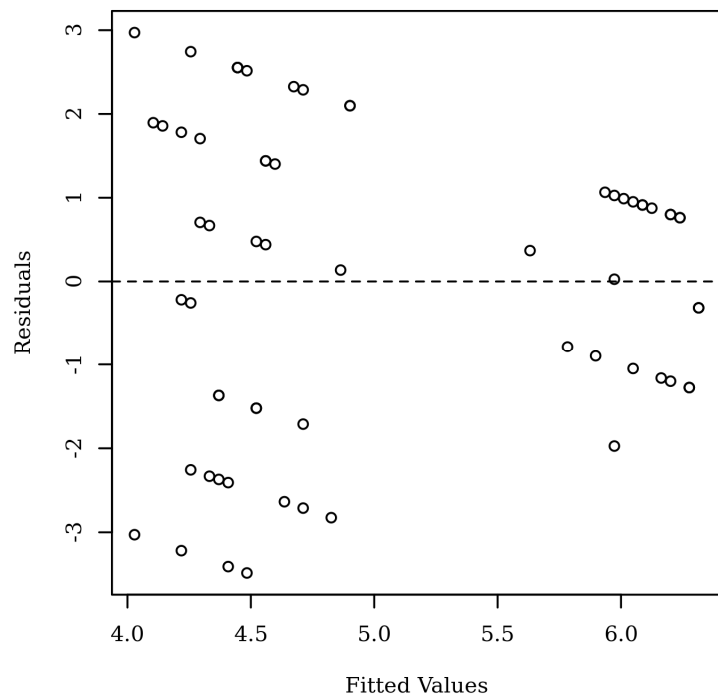


*Figure 14*: Residuals scatterplot examining homoscedasticity for EI-IEO and group.

Multicollinearity between predictors was assessed by calculating VIFs. The acceptable

limit for VIFs was considered < 10. All predictor variables in the regression models had VIFs

< 10, indicating the multicollinearity assumption was met. Tables 19-21 present the VIFs for each predictor in the model.

Table 19

*VIF for Gender and Group*

| Variable | VIF |
|----------|-----|
| Gender | 1.03 |
| Group | 1.03 |

Table 20

*VIF for Age and Group*

| Variable | VIF |
|----------|-----|
| Age | 1.05 |
| Group | 1.05 |

Table 21

*VIF for IEO and Group*

| Variable | VIF |
|----------|-----|
| IEO | 1.03 |
| Group | 1.03 |

*Note.* IEO = individual entrepreneurial orientation.

Influential points (outliers) were identified by calculating studentized residuals and plotting the absolute values against the observation numbers. For EI-gender and group, EI-age and group, and EI-IEO and group, a case was considered to be an outlier when the absolute value of a studentized residual was greater than 3.23 at the 0.999 quartile of a *t*-distribution with 62 degrees of freedom. Figures 15-17 display the studentized residuals plots of the observations.
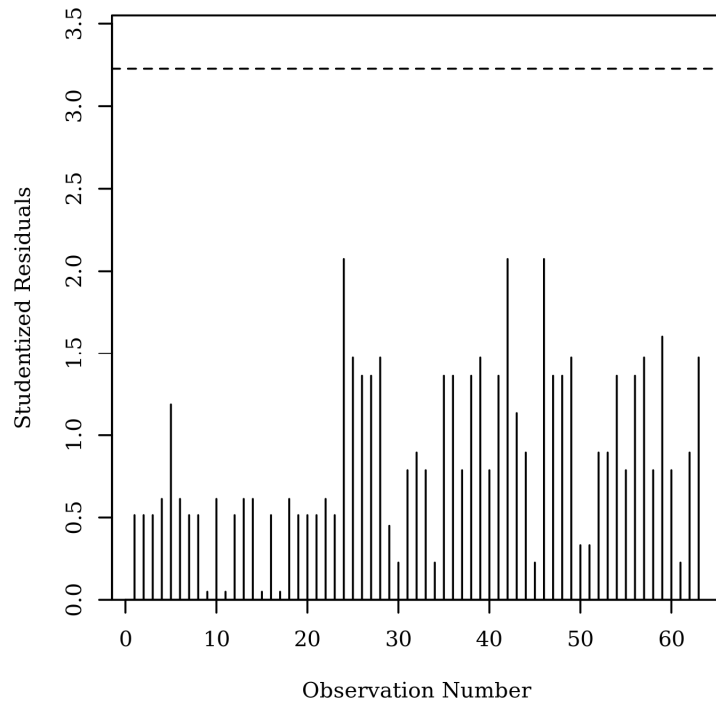
*Figure 15*: Studentized residuals plot for outlier discovery for EI-gender and group.
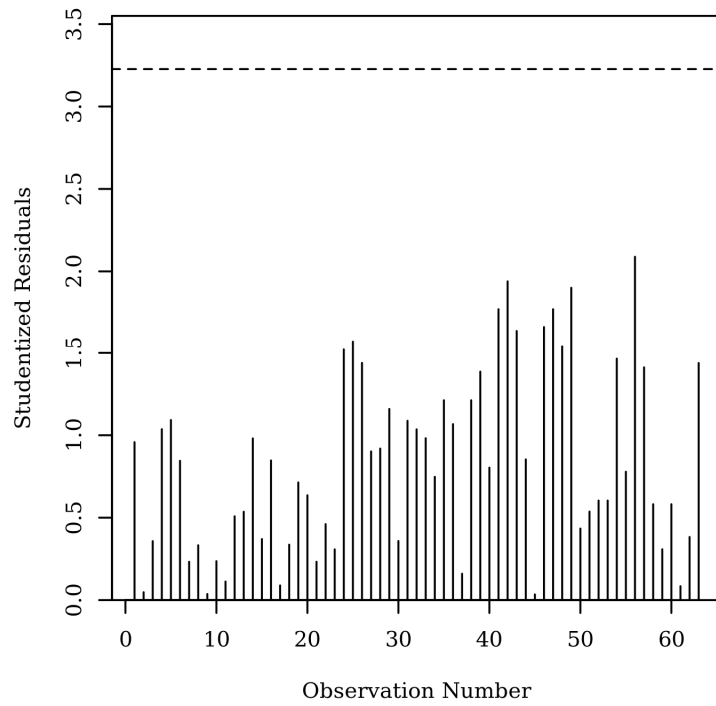


*Figure 16*: Studentized residuals plot for outlier discovery for EI-age and group.
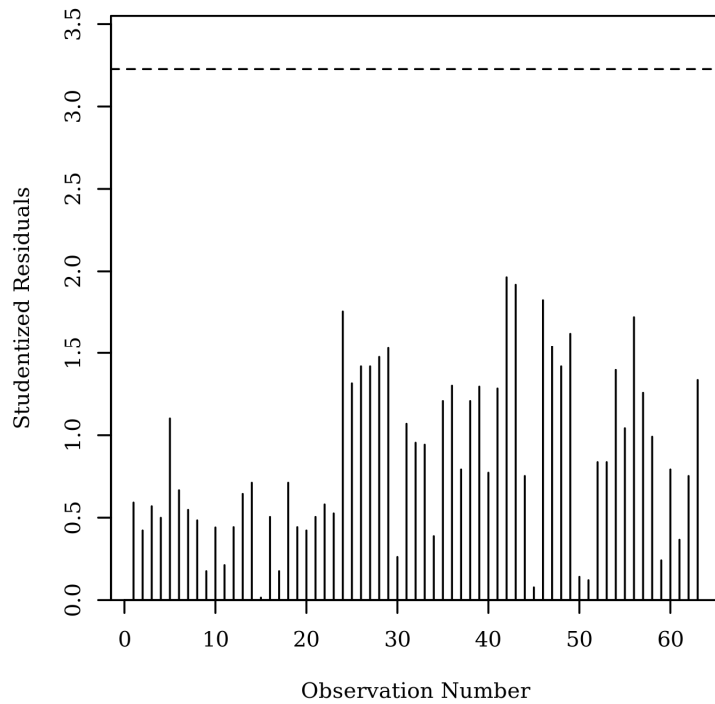
*Figure 17*: Studentized residuals plot for outlier discovery for EI-IEO and group.

Autocorrelation was assessed with a Durbin-Watson test. For EI-gender and group, the result was not significant, $DW = 1.90$, $p = .298$. For EI-age and group, the result was not significant, $DW = 1.90$, $p = .303$. For EI-IEO and group, the result was not significant, $DW = 1.83$, $p = .205$. Results indicated little to no autocorrelation among the residuals for all three predictor variables.

Tests of assumptions were met for linearity, multicollinearity, outliers, and autocorrelation for all individual predictor variables (i.e., gender, age, and IEO). The normality assumption was met for age and not met for gender and IEO. The homoscedasticity assumption was met for gender and not met for age and IEO. Due to the violation of homoscedasticity for age and IEO, ordinal logistic regression, which does not require homoscedasticity, was used to confirm linear regression interpretation, and findings were consistent between the two statistical analyses.

**Results of linear regression for individual predictor variables.** For gender and group predicting EI, the linear regression model results were significant, $F(2,60) = 7.59$, $p = .001$, $R^2 = 0.20$, suggesting gender and group explained roughly 20% of the variance in EI. The male category of gender did not predict EI, $B = -1.93$, $t(60) = -1.78$, $p = .080$. Within this sample, gender did not have a significant effect on the mean of EI. The recent category of group significantly predicted EI, $B = -1.49$, $t(60) = -3.11$, $p = .003$. Within this sample, results suggest moving from the current to the recent category of group decreases the mean value of EI by 1.49 units on average. The regression model results are summarized in Table 22. The null hypothesis (i.e., gender does not individually influence EI) was not rejected.

Table 22

*Linear Regression Results for Gender and Group Predicting EI*

| Variable | *B* | *SE* | CI | *β* | *t* | *p* |
|---|---|---|---|---|---|---|
| (Intercept) | 6.09 | 0.38 | [5.33, 6.84] | 0.00 | 16.18 | < .001 |
| GenderMale | -1.93 | 1.08 | [-4.09, 0.24] | -0.21 | -1.78 | .080 |
| GroupRecent | -1.49 | 0.48 | [-2.45, -0.53] | -0.36 | -3.11 | .003 |

*Note.* CI is at the 95% confidence level. Results: $F(2,60) = 7.59$, $p < .001$, $R^2 = 0.20$ Unstandardized regression equation: EI = 6.09 - 1.93*GenderMale - 1.49*GroupRecent.

For age and group predicting EI, the linear regression model results were significant, $F(2,60) = 8.82$, $p < .001$, $R^2 = 0.23$, suggesting age and group explained roughly 23% of the variance in EI. Age significantly predicted EI, $B = 0.04$, $t(60) = 2.29$, $p = .026$. This suggests, on average, a one-year increase in age increases the value of EI by 0.04 units. The recent category of group significantly predicted EI, $B = -1.88$, $t(60) = -3.94$, $p < .001$. Within this sample, results suggest moving from the current to the recent category of group decreases the mean value of EI by 1.88 units on average. The regression model results are summarized in Table 23. The null hypothesis (i.e., age does not individually influence EI) was rejected.

Table 23

*Linear Regression Results for Age and Group Predicting EI*

| Variable | B | SE | CI | β | t | p |
|---|---|---|---|---|---|---|
| (Intercept) | 4.31 | 0.86 | [2.58, 6.03] | 0.00 | 4.99 | < .001 |
| Age | 0.04 | 0.02 | [0.01, 0.08] | 0.27 | 2.29 | .026 |
| GroupRecent | -1.88 | 0.48 | [-2.83, -0.92] | -0.46 | -3.94 | < .001 |

*Note.* CI is at the 95% confidence level. Results: $F(2,60) = 8.82$, $p < .001$, $R^2 = 0.23$ Unstandardized regression equation: EI = 4.31 + 0.04*Age - 1.88*GroupRecent.

For IEO and group predicting EI, the linear regression model results were significant, $F(2,60) = 6.18$, $p = .004$, $R^2 = 0.17$, suggesting IEO and group explained roughly 17% of the variance in EI. IEO did not predict EI, $B = 0.38$, $t(60) = 0.89$, $p = .375$. Within this sample, a one-unit increase in IEO does not have a significant effect on EI. The recent category of group significantly predicted EI, $B = -1.56$, $t(60) = -3.21$, $p = .002$. Within this sample, results suggest moving from the current to the recent category of group decreases the mean value of EI by 1.56 units on average. The regression model results are summarized in Table 24. The null hypothesis (i.e., IEO does not individually influence EI) was not rejected.

Table 24

*Linear Regression Results for IEO and Group Predicting EI*

| Variable | B | SE | CI | β | t | p |
|---|---|---|---|---|---|---|
| (Intercept) | 4.57 | 1.74 | [1.08, 8.05] | 0.00 | 2.62 | < .001 |
| IEO | 0.38 | 0.42 | [-0.47, 1.23] | 0.11 | 0.89 | .375 |
| GroupRecent | -1.56 | 0.49 | [-2.54, -0.59] | -0.38 | -3.21 | < .001 |

*Note.* IEO = individual entrepreneurial orientation. CI is at the 95% confidence level. Results: $F(2,61) = 6.18$, $p = .004$, $R^2 = 0.17$. Unstandardized regression equation: EI = 4.57 + 0.38*IEO - 1.56*GroupRecent

**Tests of assumptions of linear regression analysis for all predictor variables combined.** Linear regression analysis was performed to evaluate whether gender, age, and IEO significantly predicted EI while controlling for group differences. All of the predictor variables were included in the linear regression model using the "Enter" variable selection method. Linearity between the criterion and all predictor variables combined (i.e., EI-gender, age, IEO, and group) was determined by visual inspection of Q-Q scatterplots of model residuals (see Figure 18) and scatterplots of residuals against the predicted values (see Figure 19). The assumption of linearity was met.

The assumption of normality was assessed using a Q-Q scatterplot where quantiles of the residuals may not greatly differ from theoretical quantiles because substantial differences might signal unreliable parameter estimates. The Q-Q scatterplots suggest the assumption of normality was met. Figure 18 displays a Q-Q scatterplot of the model residuals.  Results of a SW test were used to evaluate the normalcy of the distribution of IEO. The normality assumption was met based on non-significant SW test results using $\alpha = 0.05$, $W = 0.98$, $p = .287$.
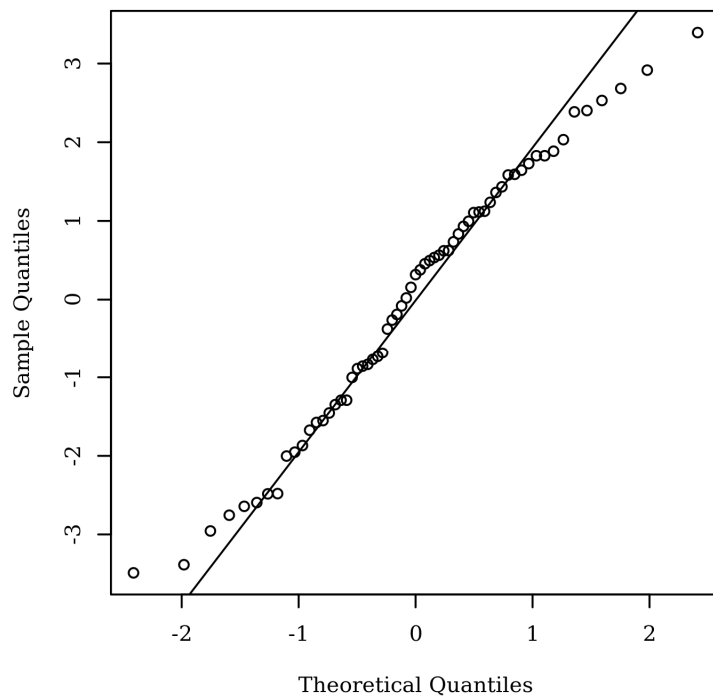


*Figure 18:* Q-Q scatterplot for normality of regression model residuals for EI-group, gender, age, and IEO.

Model residuals were plotted against the predicted values to examine homoscedasticity. Non-randomly distributed points indicated the assumption of homoscedasticity was not met. Due to the violation of homoscedasticity for age and IEO, ordinal logistic regression, which does not require homoscedasticity, was used to confirm linear regression interpretation, and findings were consistent between the two statistical analyses. Figure 19 displays a scatterplot of model residuals and predicted values.
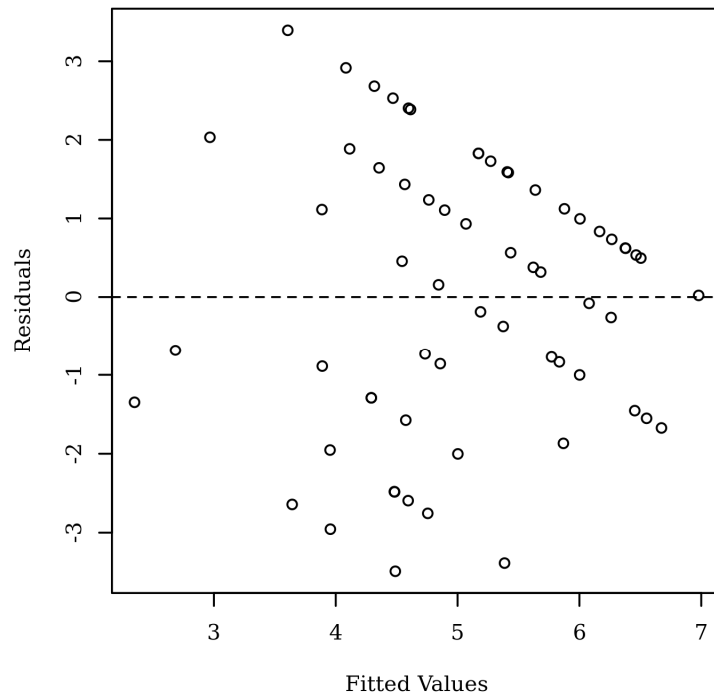
*Figure 19*: Residuals scatterplot examining homoscedasticity for EI-group, gender, age, and IEO.

Multicollinearity between predictors was assessed by calculating VIFs. The acceptable

limit for VIFs was considered < 10. All predictor variables in the regression model had VIFs

< 10 indicating the multicollinearity assumption was met. The VIF for each predictor in the

model is displayed in Table 25.

Table 25

*VIF for Group, Gender, Age, and IEO*

| Variable | VIF |
| --- | --- |
| Group | 1.19 |
| Gender | 1.10 |
| Age | 1.25 |
| IEO | 1.21 |

*Note.* IEO = individual entrepreneurial orientation.

Influential points (outliers) were identified by calculating studentized residuals and

plotting the absolute values against observation numbers. Cases with an absolute value of a

studentized residual greater than 3.23 at the 0.999 quartile of a *t* distribution with 62 degrees of

freedom were regarded as outliers. No outliers were found. The studentized residuals plot of the observations is displayed in Figure 20.
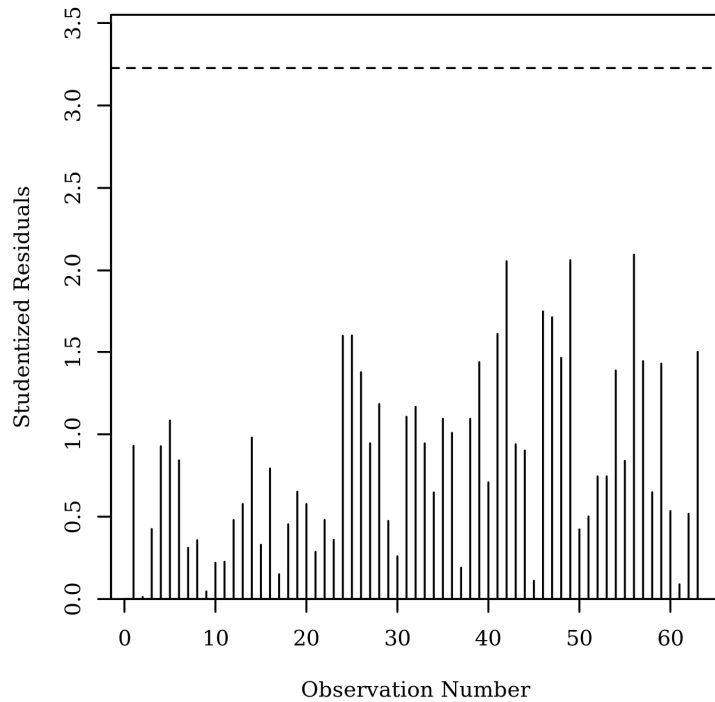


*Figure 20*: Studentized residuals plot for outlier discovery for EI-group, gender, age, and IEO.

Autocorrelation was assessed with a Durbin-Watson test. The result was not significant, $DW = 1.97$, $p = .399$. Results indicated little to no autocorrelation among the residuals.

**Results of linear regression for all predictor variables combined.** Linear regression model results were significant, $F(4,58) = 5.02$, $p = .002$, $R^2 = 0.26$, suggesting group, gender, age, and IEO explained roughly 26% of the variance in EI. The recent category of group significantly predicted EI, $B = -1.67$, $t(58) = -3.31$, $p = .002$. Within this sample, results suggest moving from the current to the recent category of group decreases the mean value of EI by 1.67 units on average. The male category of gender did not predict EI, $B = -1.67$, $t(58) = -1.52$, $p = .134$, which suggests moving between gender categories does not have a significant effect on the mean of EI.

Age did not predict EI, $B = 0.04$, $t(58) = 1.72$, $p = .090$. A one-year increase in age does not have a significant effect on EI. IEO did not predict EI, $B = 0.19$, $t(58) = 0.44$, $p = .663$. A one-unit increase in IEO does not have a significant effect on EI. Regression model results are summarized in Table 26. The null hypothesis (i.e., gender, age, and IEO subscales do not collectively influence EI) was not rejected.

Table 26

*Linear Regression Results for Group, Gender, Age, and IEO Predicting EI*

| Variable | *B* | *SE* | CI | *β* | *t* | *p* |
|---|---|---|---|---|---|---|
| (Intercept) | 3.85 | 1.70 | [0.45, 7.25] | 0.00 | 2.27 | .027 |
| GroupRecent | -1.67 | 0.51 | [-2.68, -0.66] | -0.41 | -3.31 | .002 |
| GenderMale | -1.67 | 1.10 | [-3.86, 0.53] | -0.18 | -1.52 | .134 |
| Age | 0.04 | 0.02 | [-0.01, 0.08] | 0.22 | 1.72 | .090 |
| IEO | 0.19 | 0.44 | [-0.69, 1.08] | 0.05 | 0.44 | .663 |

*Note.* IEO = individual entrepreneurial orientation. CI is at the 95% confidence level. Results: $F(4,58) = 5.02$, $p <$ .001, $R^2 = 0.26$. Unstandardized regression equation: IE = 3.85 - 1.67*GroupRecent - 1.67*GenderMale + 0.04*Age + 0.19*IEO.

**Reliability and Validity**

Threats to reliability and validity were controlled by using a validated instrument for data collection, meeting the assumptions of statistical analyses performed, and limiting generalization of findings to the target population. The reliability and internal validity of the IEO scale were determined by Cronbach's alpha analysis. Cronbach's alpha scores indicating acceptable to good reliability of the instrument were retained for the IEO scale (0.79) and INV (0.77) and RSK (0.80) subscales. For comparability to other studies, PRO (.66) was retained despite the questionable reliability. Determination of construct validity of the IEO scale was not possible due to insufficient sample size ($N = 63$), as confirmatory factor analysis assumptions require a sample size greater than 300.

Attaining a sample size greater than the minimum required sample size of 36 was adequate to achieve statistical power for hypotheses testing, which contributed to internal validity. Internal validity was addressed by meeting the linear regression assumptions of linearity, homoscedasticity, multicollinearity, outliers, and autocorrelation. Although the normality assumption was violated in some analyses, linear regression is robust to violations of normality where the sample size is at least 10 observations per parameter. Based on the evidence of instrument validity and internal validity of statistical analyses, confidence in the interpretations of the predicted effects and relationships between variables can be assumed.

The threat to external validity was the limitation of the generalizability of findings due to the selection of participants with narrow characteristics. A defining characteristic of the target population was the training program's NBHWC eligibility. Because there may be a difference in the EIs of students graduating from non-certified training programs, to address the threat to external validity, claims are restricted to students of NBHWC-eligible training programs.

## Chapter Summary

The data collected provided answers to the research question: To what degree do gender, age, and IEO, individually and collectively, influence the EI of students in health and wellness coach training programs? Data were collected and analyzed from 2 samples comprising 23 students enrolled in an NBHWC-eligible training program, and 40 students who recently graduated from an NBHWC-eligible training program. A comparison of characteristics between current and recent students revealed current students had greater EI than recent students, but both groups had similar IEO scores. Linear regression analyses of the individual predictor variables indicated age significantly influenced EI positively when group was controlled. Gender and IEO did not significantly influence EI when the group was controlled. Collectively, gender, age, and

IEO did not significantly influence EI when the group was controlled. Next, findings, interpretations, and conclusions are discussed. Limitations of the study, recommendations for further study, and implications for leadership are addressed.

Chapter 5: Discussion and Conclusion

The purpose of this research was to document the EI of health and wellness coaching students and determine the influence of gender, age, and IEO of students. Much of what is known about the individual effects of gender, age, and IEO on EI in college students was based on research with business students. EI can vary by educational field of study, and little research has been conducted on the EI of healthcare workers or students. The research was undertaken because sociodemographic characteristics of health and wellness coaching students, the students' EIs (i.e., interest in self-employment) and orientations, and how gender, age, and IEO work together to influence EI was unknown. Knowing the proportion of health and wellness coaching students intending to enter private practice establishes the level of need for entrepreneurial education in health and wellness coach training programs, and understanding the relationship between gender, age, IEO, and EI can help faculty develop responsive entrepreneurial education content.

The literature shows health and wellness coaching is a nascent field whose rapid growth and efforts to professionalize the field have resulted in the newly created National Board Certification for Health and Wellness Coaching (NBC-HWC) and proliferation of coach training programs arising to meet demand. One-third of practicing health and wellness coaches are self-employed, suggesting health and wellness coaching students intending to follow in the same path may need to develop entrepreneurial competencies. Entrepreneurial competencies are learned skills, but entrepreneurial education within health and wellness coach training programs may be inadequate to prepare students to become self-employed. Understanding the entrepreneurial characteristics of students can aid the development of entrepreneurial education content. The TPB can be used as a framework for predicting EI in health and wellness coaching students and

understanding how gender, age, and IEO influence the desire to be self-employed. Generally, entrepreneurial research indicates women have lower EI than men do, age is negatively associated with EI, and IEO is positively associated with EI.

A quantitative correlational method was employed to investigate the research question and test hypotheses. The relationships among EI (criterion variable) and gender, age, and IEO (predictor variables) were examined through non-experimental design to predict membership in a group, which does not provide evidence of a causal relationship. Descriptive statistics documented student EI, and linear regression analyses were used to determine the relationship between EI and gender, age, and IEO, individually and collectively.

The collected data provided demographic and entrepreneurial characteristic information about the EI of health and wellness coaching students, revealing the majority of students wanted to be self-employed after completing training (Figure 6). The IEO scores (Table 10) were moderate, indicating health and wellness coaching students were positively oriented toward entrepreneurship. Health and wellness students ranked themselves moderately on innovativeness and risk-taking and high on proactiveness characteristics. The data provided no evidence gender or IEO influenced EI. Age was found to significantly influence entrepreneurial orientation and age, and the group accounted for roughly 24% of the variance in EI. EI increases with age. No support was found for gender, age, and IEO collectively influencing EI.

A discussion of the research findings, interpretations of the data, and resulting conclusions follow. Limitations of the study are explained. Recommendations for future research are considered, and the implications of the study for leadership are explored.

**Findings, Interpretations, Conclusions**

To illustrate how knowledge was extended in the health and wellness coaching field, a comparison of the research findings to the literature is presented. The meaning of the findings derived from an interpretation of the findings situated within the context of the theoretical and conceptual framework is described. These findings and corresponding interpretations documented the demographic and entrepreneurial characteristics of health and wellness coaching students and extended EI and IEO research to the health and wellness coaching field. Conclusions drawn from the interpretation of the findings are discussed.

**Group Differences**

Current students had significantly higher EI ($M = 6.09$) than recent students ($M = 4.45$), and a higher percentage of current students (95.8%) were interested in being self-employed after graduation than recent students (69.8%). The difference in EI between current and recent students was unexpected. Small sample size and desirability bias were assumed to be factors due to the absence of responses indicating low EI in current students. If data were collected from more current students, greater variation in EI might have been found. Current students who were enrolled in a training program at the time of data collection may have been more susceptible to desirability bias and consequently rated EI higher based on the name of the study than recent students who had completed training. An alternative explanation is current students have higher EI due to the homogeneity of the regional economic environment compared to the heterogeneity of the national economic environment of recent students.

The means of IEO were comparable between groups (i.e., current students $M = 4.00$; recent students $M = 3.81$). Because IEO characteristics were similar for current and recent students, combining these groups for analyses seemed plausible. As a result of finding

differences in EI between groups, group was used as a control in statistical analyses to increase the confidence in the interpretation of EI data.

**Entrepreneurial Intention**

The percentage of students indicating some degree of EI to become self-employed as a health and wellness coach was 69.8%. Health and wellness coaching students' EI to become self-employed was much higher than the 37.9% of practicing coaches who were self-employed (Wolever et al., 2016). No comparisons of the EI of health and wellness coaching students could be made to health and allied health fields, as little research has been conducted concerning the EI of healthcare workers or students (Marques et al., 2018; Wall, 2015).

**Gender**

Most of the health and wellness coaching students were female (95.2%). Gender distribution for practicing health and wellness coaches is unknown. A lower percentage of female coaches practicing in all disciplines combined (73.0%) was reported (International Coach Federation and PricewaterhouseCoopers, 2016). Female students ($M = 5.17$) scored significantly higher on EI than male students did ($M = 2.67$); a finding inconsistent with a majority of research reporting lower rates of EI for women than men (Goktan & Gupta, 2015; Shinnar et al., 2017) or the few studies reporting no differences (Chaudhary, 2017; Ojewumi et al., 2018). The finding women had higher EI than men should be treated with caution, as the number of men in the sample may not have been adequate for interpretation.

Linear regression did not show an influence of gender on EI as hypothesized. Research has reported gender influences the antecedents of EI, PA, SN, and PBC (Caro-González et al., 2017; Dawson & Henley, 2015; Entrialgo & Iglesias, 2016). Due to the small number of men in the sample, the finding gender does not influence EI should be treated with caution.

Interpretation of the data is insufficient to draw conclusions about the relationship between gender and EI or to situate findings within the context of the EI literature.

**Age**

The mean age of students was 44 years, and 54.0% of health and wellness coaching students were 36-55 years old, which is comparable to the 53.5% of practicing health and wellness coaches in this age range (Wolever et al., 2016). When comparing EI by age group, > 55 years ($M = 5.75$) had the highest EI followed by 36-55 years ($M = 4.91$), and < 36 years ($M = 4.82$). Linear regression analysis determined age individually influences EI with roughly 23% of the variance in EI being explainable by age and group. Age had a positive influence on EI; EI increases with age. The positive influence of age on EI is inconsistent with other research where age has had a negative (Hatak et al., 2015), curvilinear (Bohlmann et al., 2017), or inverse U-shaped (Kautonen, Hatak, et al., 2015) association with EI or was not associated (Debarliev et al., 2015; Mouselli & Khalifa, 2017). Dawson and Henley (2015) reported EI increased with age for women but decreased for men, which may account for the positive association found in this sample comprising mostly women.

Finding a significant relationship between age and EI when age is used as a predictor instead of a control variable is consistent with the literature (Bohlmann et al., 2017; Kautonen, Hatak, et al., 2015). Having a wide range of ages in the sample contributed to the plausibility of the findings. Based on the research methodology, theoretical framework, sample characteristics, and grounding within the literature, the findings are likely an accurate depiction of the relationship between age and EI; EI increases with age within health and wellness coaching students.

**Individual Entrepreneurial Orientation**

Reliability was confirmed for the IEO scale and two of the three subscales (i.e., innovativeness and risk-taking). The proactiveness subscale had questionable reliability but was included in the analyses to promote comparability to other research. Sample size was too small to confirm validity through factor analysis. Cronbach's alpha coefficient scores exceeding .7 were consistent with scores reported by the IEO scale developer (Bolton & Lane, 2012) and other researchers (Koe, 2016).

Health and wellness coaching students ranked moderate on the IEO scale with a mean score of 3.88 on a scale ranging from 1-5, indicating students were positively oriented toward entrepreneurship. Mean scores for innovativeness (3.68) and risk-taking (3.60) were moderate, and proactiveness (4.43) was high. Limited use of the IEO scale to measure IEO (Koe, 2016) hindered the comparison of IEO scores to other fields of study.

To investigate the influence of IEO on EI, IEO was analyzed as a composite construct. Linear regression did not show an influence of IEO on EI as hypothesized. This finding was inconsistent with research treating IEO as a composite construct where IEO has been positively associated with IE (Ibrahim & Mas'ud, 2016; Koe, 2016). Research employing some form of the IEO scale with significant findings has been based on larger sample sizes ranging between 155 to 335 participants (Ibrahim & Mas'ud, 2016; Koe, 2016; Yusoff et al., 2016). Interpretation of the data is insufficient to draw conclusions about the relationship between IEO and IE or to situate findings within the context of the IE literature.

**Collective Influence of Gender, Age, and IEO**

Examination of the influence of gender, age, and IEO collectively on IE resulted in finding no relationship between the variables. Given gender and IEO were found to have no

influence on IE individually, finding a lack of relationship between the variables collectively follows. In the presence of gender and IEO, age was no longer a significant predictor of IE, indicating gender and IEO were confounding variables. Concluding a lack of collective influence of gender, age, and IEO on IE should be treated with caution due to the ambiguity of interpretations of the individual findings for gender and IEO.

**Theoretical and Conceptual Framework**

The TPB served as the theoretical framework for this research from which the conceptual framework was derived. The conceptual framework proposed gender, age, and IEO directly influenced IE. Gender and IEO did not directly influence IE, meaning a student's self-reported gender does not explain the student's desire to become self-employed as a health and wellness coach, nor do IEO characteristics. Age was found to influence EI directly, meaning as a student ages, the student's desire to become self-employed as a health and wellness coach increases. Gender and IEO may indirectly influence IE.

**Conclusions**

The data analyzed provided documentation of demographic and entrepreneurial characteristics of health and wellness coaching students indicating a majority of students wanted to become self-employed health and wellness coaches (69.8%), which was larger than the rate of self-employed practicing coaches (37.9%). Most students were between 36 and 55 years old (54.7%) and were female (95.3%), which is consistent with the demographics of practicing coaches. The IEO of students was moderate ($M = 3.84$). Students reported moderate levels of innovativeness ($M = 3.65$) and risk-taking ($M = 3.57$) and high levels of proactiveness ($M = 4.38$). The large proportion of health and wellness coaching students desiring to become self-employed demonstrated a need for entrepreneurial education within coach training programs,

especially considering the gap between the rate of self-employment of practicing coaches and the level of desire for self-employment of students. Knowledge of these student demographic and entrepreneurial characteristics could be used to tailor entrepreneurial education content to health and wellness coaching students (Pruett & Şeşen, 2017). For example, entrepreneurial education content should be taught using best practices for adult learners, and content could consider levels of IEO dimensions.

The data analyzed provided few definitive answers about the individual and collective influence of gender, age, and IEO on EI in health and wellness coaching students. Age was individually found to positively influence IE. The result of not finding an influence of gender or IEO on EI was inconclusive. Collective influence of gender, age, and IEO on EI was not found. Partial support of the hypothesis was found for age individually influencing EI. There was no support of the hypothesis found for gender and IEO individually influencing IE or a collective influence of gender, age, and IEO. Research results were not conclusive about the relationship between gender, age, IEO, and EI in health and wellness coaching students.

The three objectives of the research were achieved: to provide faculty with student characteristics information useful for curriculum development, to increase student awareness of IEO, and to extend the EI research to the health and wellness coaching population. The purpose of the research to document the EI of health and wellness coaching students and determine the degree of influence by gender, age, and IEO was partially fulfilled. Documentation of health and wellness coaching students' EI was achieved. Determination of the individual and collective influence of gender, age, and IEO on EI was limited. Despite the limited findings, the research provided useful information about health and wellness coaching students.

**Limitations**

Limitations were present in this research with respect to measurement and sample, which may limit drawing conclusions and generalizability of findings. The conceptual framework specified a direct relationship between variables shown to influence EI but could have included different or additional variables to predict EI. Due to the variation of fields of study characteristics such as between business and agriculture, other variables may have better-reflected influencers of EI in health and wellness coaching students. A single question was used to measure EI. Thompson (2009) recommended using a multi-item construct to measure EI.

The IEO scale was developed with a sample of college students but has not yet been widely used. Student IEO and EI were measured up to a year after completing coach training. Shirokova et al. (2016) advised the proximal measurement of EI to reduce the likelihood of events changing intentions. Although measurement issues may have contributed to the research limitations, EI research is characterized by ad hoc measurements (Liñán & Chen, 2009).

Several aspects of the sample contributed to the research limitations. Representativeness of the recent student sample was not able to be determined, but there was no evidence showing the sample was not representative. The two samples collected varied in EI necessitating controlling for group characteristics during statistical analyses. Male observations were low in the sample, weakening interpretations of gender comparisons. Unequal group sizes were accounted for in the statistical analyses. A priori calculations of power indicated the sample size provided sufficient strength to detect large effects, but a larger sample size would have increased the ability to detect more subtle effects.

**Recommendations**

Coach training program curricula require careful design to meet student need (Broadbear & Broadbear, 2017). National standards for practice have been established, but the standards for practice do not address the development of the entrepreneurial skills needed for successful self-employment in the field (Jordan et al., 2015). The results of this research indicate there is a clear demand for entrepreneurial education to prepare students for self-employment.

Faculty should consider how best to prepare students for success in private practice. Health and wellness coach training programs should conduct curriculum mapping to evaluate the entrepreneurial education content within the training program. If missing from the curriculum, entrepreneurial education content should be added. Entrepreneurial education should be tailored to student characteristics and needs. Best practices in entrepreneurial education for health and wellness coaching students should take into consideration the feminization of the field, the needs of older students, and the moderate IEO of the students.

Professional organizations should evaluate the appropriateness of adding entrepreneurial competency to health and wellness coaching training programs and certification requirements. Organizations should consider adding entrepreneurial education content to member services. Evidence-based entrepreneurial education content can be provided as free or paid content, and organizations are encouraged to work with agencies such as the Small Business Administration to provide regionally relevant resources for members. Content about starting a private practice should be tailored to the specific needs of health and wellness coaches (Schwab, 2016). Self-employed nurses found a business support network valuable (Wall, 2015). Creating a mentor program, matching new entrepreneur health and wellness coaches with seasoned practicing

coaches, may provide support to close the gap between the percentage of students who desire to be self-employed and the percentage of coaches in private practice.

Additional research is recommended to determine how best to support the entrepreneurial education needs of health and wellness coaching students. The study should be replicated with non-NBHWC-approved training programs, larger sample sizes, and with a greater number of men. To broaden understanding of the antecedents of EI, more elements (e.g., gender-role orientation, family background, self-efficacy) could be incorporated into the conceptual framework. Gender, age, and IEO should be treated as indirect influences instead of direct influences of EI within the conceptual framework. To broaden the understanding of IEO, the IEO scale should be evaluated as a multidimensional construct to examine the role of innovativeness, proactiveness, and risk-taking.

Research should be undertaken to determine the presence and nature of gaps in the entrepreneurial education of health and wellness coach training programs to prepare coaches for self-employment in the field. An explanation for the positive relationship between age and EI in health and wellness coaching students can be investigated with additional research using life span theory. Intention-action research should be conducted to uncover how many health and wellness coaching students with EI go on to become self-employed in the field after training. Qualitative research should be conducted to understand the experiences of health and wellness coaching students seeking self-employment. Increasing what is known about health and wellness coaching students' entrepreneurial characteristics and the support needed to help students become successfully self-employed can increase the effectiveness of entrepreneurial education.

**Implications for Leadership**

Knowledge gained from this research may be beneficial to health and wellness coaching students, coach training program faculty and administrators, health and wellness professional organizations, and researchers of EI and health professions. Analyses and findings of this research revealed a large proportion of health and wellness coaching students want to become self-employed after graduation, and student EI increases with age. IEO characteristics of health and wellness coaching students were made known. The influence of gender and IEO on EI was not substantiated.

The results of this research should lead to the incorporation of entrepreneurial education content into health and wellness coach training programs. Health and wellness coach training program faculty and administrators can evaluate program curriculum and use these research findings to tailor entrepreneurial education content to student needs. Leaders are urged to further examine how training programs support student EI by assessing student entrepreneurial skill development outcomes. Strengthening training program entrepreneurial education content and student entrepreneurial skill development outcomes can help future students by ensuring the development of entrepreneurial competence to better support self-employment goals. Health and wellness coach training programs with robust entrepreneurial education content could be more competitive for student enrollment over programs not offering entrepreneurial skill development.

Student demographic information can yield valuable insights for leaders of professional organizations about new practitioners entering the health and wellness coaching field. The information can be used for planning and marketing to recruit new members, set policy, and advance the field of health and wellness. Professional organizations can drive policy changes to ensure entrepreneurial competency is supported by coach training program curricula. Increasing

success rates of self-employed health and wellness coaches can lead to the growth of the industry and increase access to services for the public.

Researchers should capitalize on the foundation this research provided to conduct additional research to advance the field of health and wellness coaching and contribute to the body of EI and IEO research. More research with the health and wellness coaching population is needed to corroborate EI, age, gender, and IEO findings. Results from additional health and wellness coaching research could potentially benefit other health and allied health fields.

**Conclusion**

This research has provided insight into the EIs of health and wellness coaching students. Findings documented the majority of students intend to be self-employed after training and revealed the health and wellness field of study yields an EI profile different from other fields of study concerning the positive relationship between age and EI. Although the findings are preliminary, a foundation from which to investigate the support for the EI of health and wellness coaching students has been built. While there has been rapid growth and efforts to professionalize the field, these have primarily focused on systematizing certification and training programs in health and wellness coaching rather than examining the unique characteristics of students drawn to the field and investigating how to integrate students' professional goals into the curriculum. Students' desire to enter the field in a self-employed manner is evident, but current approaches may stop short of thoroughly preparing students to transition successfully as such. Coach training program faculty and professional organizations have an opportunity to act on the information presented in this research by ensuring proper entrepreneurial support is provided in addition to the development of skilled practitioners. Substantive support for the development of entrepreneurial competence of health and wellness coaching students stretches

well beyond the classroom and has the potential to strengthen self-employment success rates, which supports the growth of the field, and ultimately could expand the field's contribution to population health.

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Appendix A

Access to the Student Population

From: Rebecca Pille, Ph.D.; M.S.; CHWC; CWP
Sent: Thursday, February 28, 2019 10:08 AM
To: Babcock, Jyenny
Cc: Steffany Moonaz, Ph.D.
Subject: MUIH: Conditional Approval for Original Research

Greetings Jyenny,

This message provides conditional site authorization for Jyenny Babcock to conduct research concerning influences of health and wellness coaching students' entrepreneurial intention at Maryland University of Integrative Health (MUIH), subject to the following conditions: 1) study receives IRB approval from American College of Education, and 2) a copy of the approved proposal, including attachments, is provided to MUIH's IRB, which is under the direction of Dr. Steffany Moonaz.

Sincerely,

Rebecca Pille, Ph.D.; M.S.; CHWC; CWP
Department Chair - Coaching
Maryland University of lntegrative Health
7750 Montpelier Road, Laurel, MD 20723
Phone: 410-888-9048 | ext. 6782 rpille@muih.edu | www.muih.edu

Appendix B

Recruitment Email: Current Students

Greetings Health and Wellness Coaching Students,

As students in graduate programs, you understand the importance of research that supports the field of Health and Wellness Coaching. You now have the opportunity to contribute to original research by participating as a research subject. This research, titled, Influences of Health and Wellness Coaching Students' Entrepreneurial Intention: A Correlational Study, was approved by the American College of Education Institutional Review Board.

Jyenny Babcock, a doctoral candidate at American College of Education, is conducting research that explores the relationship between gender, age, individual entrepreneurial orientation, and entrepreneurial intention in health and wellness coaching students. You are being asked to participate because you are enrolled in a health and wellness coaching program at MUIH. By participating, you will not only provide information on the topic, you will learn about the research by participating in it. Your participation is entirely voluntary.

If you agree to participate in this research, you will be asked to complete a web-based survey about your gender, age, entrepreneurial orientation, and entrepreneurial intention. The estimated time to complete the survey is less than 10 minutes. Should you decide to participate, you may stop at any time, for any reason. You may choose to skip any questions you do not wish to answer. Participation is anonymous and your individual responses will be kept confidential. There is no penalty for not participating.

If you are interested in participating in the research, go to the survey site at http://fullerton.qualtrics.com/jfe/form/SV_3siZMObgQcktcEt.

Over the next two weeks, I will send out a couple of reminder messages. Because I will not know who is or is not participating, you can ignore the messages based on your decision.

Many thanks for your consideration,



**Rebecca Pille, Ph.D.; M.S.; CHWC; CWP**
Department Chair - Coaching
**Maryland University of Integrative Health**
7750 Montpelier Road, Laurel, MD 20723
Phone: 410-888-9048 | ext. 6782
rpille@muih.edu | www.muih.edu

Appendix C

Request for Consent and Survey Instrument: Current Students

Welcome to the survey!

Dear Health and Wellness Coaching Student:

Jyenny Babcock, a doctoral candidate at American College of Education, invites you to participate in research which explores the relationship between gender, age, individual entrepreneurial orientation, and entrepreneurial intention specifically in health and wellness coaching students. You are being asked to participate because you are enrolled in a health and wellness coaching program at the Maryland University of Integrative Health.

Your participation is entirely voluntary. Please read the information in this announcement and ask questions about anything you do not understand before deciding whether or not to participate. If you agree to participate in this research, you will be asked to complete a web-based survey about your gender, age, entrepreneurial orientation, and entrepreneurial intention. The estimated time to complete the survey is less than 10 minutes. Should you decide to participate, you may stop at any time, for any reason. You may choose to skip any questions you do not wish to answer.

Participation is anonymous and your individual responses will be kept confidential. If you choose to participate, you will not be identified and your individual responses will not be disclosed. Results of this research will be published and aggregate-level data will be provided to your university, but will not include any information making it possible to identify individual participants. There are minimal anticipated risks if you decide to participate in this research that are no greater than those encountered in daily life. Although you will not receive any direct benefit from participating in this research, your feedback will help advance the body of knowledge concerning the entrepreneurial intentions of health and wellness coaching students.

This research was approved by the American College of Education Institutional Review Board on September 9, 2019. If you wish to ask questions about this research, please contact Jyenny Babcock, Doctoral Candidate at American College of Education at jyenny.babcock@gmail.com or 310-521-0560. You may also contact the American College of Education Institutional Review Board at IRB@ace.edu.

By clicking "I consent, begin survey" below, you acknowledge your participation in the research is voluntary, you are at least 18 years of age, and you are aware you may choose to terminate your participation at any time and for any reason.

Thank you for your consideration,

Jyenny Babcock
Doctoral Candidate

Appendix C (Continued)

American College of Education

Please note this survey is best displayed on a laptop or desktop computer. Some features may be less compatible for use on a mobile device.

- o    I consent, begin the survey (1)
- o    I do not consent, I do not wish to participate (0)

---

What program are you currently enrolled in?
- o    MA Health and Wellness Coaching (1)
- o    Certificate of Health and Wellness Coaching (2)

What is your gender?
- o    Male (0)
- o    Female (1)

What is your age in years?

_____

What is your race/ethnicity?
- o    American Indian or Alaska Native (1)
- o    Asian (2)
- o    Black or African American (3)
- o    Hispanic (4)
- o    Native Hawaiian or Pacific Islander (5)
- o    White (6)
- o    Two or more races (7)
- o    Non-resident alien (8)

Appendix C (Continued)

Please rate your agreement with each statement: Strongly agree (5), Somewhat agree (4), Neither agree nor disagree (3), Somewhat disagree (2), Strongly disagree (1)

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

After graduation, I plan to work as a <u>self-employed</u> health and wellness coach.

o       Strongly agree (7)

o       Agree (6)

o       Somewhat agree (5)

o       Neither agree nor disagree (4)

o       Somewhat disagree (3)

o       Disagree (2)

o       Strongly disagree (1)

Appendix D

Permission to Use IEO Scale Instrument

**From:** Bolton, Dawn
**Sent:** Tuesday, December 4, 2018 12:21 PM
**To:** Babcock, Jyenny
**Subject:** RE: Doctoral candidate seeking permission for IEO instrument use

Dear Ms. Babcock,
Thank you for your interest in my IEO Scale! You have my permission to use it in your survey. I look forward to reading about your findings.
Good luck as you finish your doctorate,
Dawn Bolton

*Dr. Dawn Langkamp Bolton*
*Department of Management and*
*Center for Entrepreneurship & Innovation*
*Gordon Ford College of Business*
*Western Kentucky University*
*www.wku.edu/cei*
**#StartSomething!**

Appendix E

IRB Approval

ACE

AMERICAN COLLEGE
*of* EDUCATION

September 9, 2019

To:     Jyenny Babcock
        Byron Barton, Dissertation Committee Chair

From:   *Becky Gerambia*
        Becky Gerambia
        Assistant Chair, Institutional Review Board
        Office of Institutional Analytics

Re:     IRB Approval

"Influences of Health and Wellness Coaching Students' Entrepreneurial Intention: A Correlational Study"

The American College of Education IRB has reviewed your application, proposal, and any related materials. We have determined that your research provides sufficient protection of human subjects.

Your research is therefore approved to proceed. The expiration date for this IRB approval is one year from the date of review completion, September 9, 2020. If you would like to continue your research beyond this point, including data collection and/or analysis of private data, you must submit a renewal request to the IRB.

Our best to you as you continue your studies.

Appendix F

Recruitment Email: Recent Students

Greetings NBC-HWC,

As a National Board Certified Health & Wellness Coach, you understand the importance of research that supports the field of Health and Wellness Coaching. You now have the opportunity to contribute to original research by answering a short web-based survey. This research, titled, Influences of Health and Wellness Coaching Students' Entrepreneurial Intention: A Correlational Study, was approved by the American College of Education Institutional Review Board.

Jyenny Babcock, a doctoral candidate at American College of Education, is conducting research that explores the relationship between gender, age, individual entrepreneurial orientation, and entrepreneurial intention in health and wellness coaching students. You are being asked to participate because you may have completed a health and wellness coaching training program.  Your participation is entirely voluntary.

If you agree to participate in this research, you will be asked to complete a web-based survey about your gender, age, entrepreneurial orientation, and entrepreneurial intention. The estimated time to complete the survey is less than 7 minutes. Should you decide to participate, you may stop at any time, for any reason. Participation is anonymous and your individual responses will be kept confidential. There is no penalty for not participating.

If you are interested in participating in the research, go to the survey site at
http://fullerton.qualtrics.com/jfe/form/SV_1XozQroyONOiUoR.

This survey will be open for one week but the data collection period may be extended until enough survey responses have been collected for analyses.  However, no reminder email will be sent.  If you are interested in participating in this research aimed at advancing the field of Health and Wellness Coaching, please consider doing so by 11/27/19.

Many thanks for your consideration,

Leigh-Ann Webster
Executive Director
National Board for Health & Wellness Coaching

Appendix G

Request for Consent and Survey Instrument: Recent Students

Welcome to the survey!

Dear Health and Wellness Coach:

Jyenny Babcock, a doctoral candidate at American College of Education, invites you to participate in research which explores the relationship between gender, age, individual entrepreneurial orientation, and entrepreneurial intention specifically in health and wellness coaching students. You are being asked to participate because you may have completed a health and wellness coaching training program.

Your participation is entirely voluntary. Please read the information in this announcement and ask questions about anything you do not understand before deciding whether or not to participate. If you agree to participate in this research, you will be asked to complete a web-based survey about your gender, age, entrepreneurial orientation, and entrepreneurial intention. The estimated time to complete the survey is less than 7 minutes. Should you decide to participate, you may stop at any time, for any reason. You may choose to skip any questions you do not wish to answer.

Participation is anonymous and your individual responses will be kept confidential. If you choose to participate, you will not be identified and your individual responses will not be disclosed. Results of this research will be published using aggregate-level data but will not include any information making it possible to identify individual participants. There are minimal anticipated risks if you decide to participate in this research that are no greater than those encountered in daily life. Although you will not receive any direct benefit from participating in this research, your feedback will help advance the body of knowledge concerning the entrepreneurial intentions of health and wellness coaching students.

This research was approved by the American College of Education Institutional Review Board on September 9, 2019. If you wish to ask questions about this research, please contact Jyenny Babcock, Doctoral Candidate at American College of Education at jyenny.babcock@gmail.com or 310-521-0560. You may also contact the American College of Education Institutional Review Board at IRB@ace.edu.

By clicking "I consent, begin survey" below, you acknowledge your participation in the research is voluntary, you are at least 18 years of age, and you are aware you may choose to terminate your participation at any time and for any reason.

Thank you for your consideration,

Jyenny Babcock
Doctoral Candidate

Appendix G (Continued)

American College of Education

Please note this survey is best displayed on a laptop or desktop computer. Some features may be less compatible for use on a mobile device.

- o        I consent, begin the survey (1)
- o        I do not consent, I do not wish to participate (0)

---

At which institution did you complete your Health and Wellness Coaching training program?

_____

Approximately how long ago did you complete your Health and Wellness Coaching training program?
- o        within the last 6 months (1)
- o        within the last 12 months (2)
- o        more than 12 months ago (3)

What is your gender?
- o        Male (0)
- o        Female (1)

What is your age in years?

_____

What is your race/ethnicity?
- o        American Indian or Alaska Native (1)
- o        Asian (2)
- o        Black or African American (3)
- o        Hispanic (4)
- o        Native Hawaiian or Pacific Islander (5)
- o        White (6)
- o        Two or more races (7)
- o        Non-resident alien (8)

Appendix G (Continued)

Please rate your agreement with each statement: Strongly agree (5), Somewhat agree (4), Neither agree nor disagree (3), Somewhat disagree (2), Strongly disagree (1)

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

At the time I graduated from my Health and Wellness Coaching training program, I planned to work as a self-employed health and wellness coach

- o      Strongly agree (7)

- o      Agree (6)

- o      Somewhat agree (5)

- o      Neither agree nor disagree (4)

- o      Somewhat disagree (3)

- o      Disagree (2)

- o      Strongly disagree (1)