



Exploring the Drivers of Social Entrepreneurship Education: A Social Cognitive Career Theory Perspective in Thai Rajabhat Universities

Chawala Lawatin & Chanta Jhantasana*

Faculty of Management Science, Valaya Alongkorn Rajabhat University under the Royal Patronage, Pathumthani, 13180 Thailand

Article info

Article history:

Received: 12 August 2024

Revised: 15 February 2025

Accepted: 30 October 2025

Keywords:

Social Cognitive Career Theory,
Social entrepreneurship education,
Self-Efficacy, Business analytics

Abstract

This research investigates Thai students' engagement with social entrepreneurship education at Rajabhat University through the lens of Social Cognitive Career Theory (SCCT). The study examines several key variables: programme characteristics (PC), self-efficacy (SE), outcome expectations (OE), intentions to pursue careers in entrepreneurship and data analytics (IED), and study intentions (IS). The innovative curriculum integrates concepts of social entrepreneurship with business analytics and gamification elements. The research surveyed 732 students from high school and vocational institutions. The methodology employed two complementary analytical approaches: Confirmatory Factor Analysis (CFA) to validate the measurement scales and Partial Least Squares Structural Equation Modelling (PLS-SEM) to evaluate relationships between variables. Both analytical methods yielded consistent results, with CFA confirming the validity of the measurement scales. The PLS-SEM analysis revealed several significant findings: programme characteristics substantially influenced self-efficacy and outcome expectations. Self-efficacy emerged as a strong predictor of students' career intentions. However, the study found no direct relationship between outcome expectations and career intentions. These findings highlight the importance of developing educational curricula that specifically target the enhancement of students' self-efficacy while providing clear explanations of expected outcomes. Such an approach appears crucial for improving the effectiveness of entrepreneurial education within the Thai educational context.

Introduction

Social entrepreneurship is crucial in tackling societal challenges, remedying market failures, and enhancing community resilience (Venkataraman, 1997; Narangajavana et al., 2016). In the Thai context, where

micro and small enterprises face challenges such as digital disruption, limited access to financing, and inadequate entrepreneurial skills (Charoenrat & Harvie, 2021), fostering a strong community of social entrepreneurs within educational institutions is vital.

* Corresponding Author
email: Chanta@vru.ac.th

Thailand faces significant economic and social challenges, including escalating inequality, an ageing population, and environmental concerns. The Social Cognitive Career Theory (SCCT) provides a comprehensive framework for understanding the influence of students' self-efficacy, outcome expectations, and environmental support on their learning and career decisions in social entrepreneurship. This scenario necessitates implementing innovative solutions that align business objectives with social responsibilities. Rajabhat Universities are critical in promoting social entrepreneurship education by leveraging their commitment to local development and community service (Doherty & Kittipanya-ngam, 2021). These institutions cater to diverse populations, predominantly in rural areas, where social enterprises can significantly advance local development. They are attuned to regional challenges and can provide tailored educational experiences that address the needs of Thai entrepreneurs, particularly concerning limited digital accessibility and culturally relevant business practices (Chienwattanasook et al., 2019). Moreover, integrating data analytics and gamification into their curricula is crucial, given that small enterprises in Thailand lag behind developed nations in adopting digital literacy and technology.

Given the vast array of career opportunities available to graduates, this study introduces a programme emphasising social entrepreneurship while seamlessly integrating essential employability skills, such as data analytics, through gamification (Lyons et al., 2023). Consequently, graduates develop entrepreneurial skills with a heightened focus on technology, enhancing their employability.

This research employs the SCCT, as articulated by Lent et al. (1994), as a foundational framework to systematically investigate the impact of self-efficacy, outcome expectations, and programme characteristics on students' decisions to engage in social entrepreneurship education. SCCT is particularly relevant as it elucidates how psychological and contextual factors influence students' motivation and involvement in learning activities. Our model analyses five primary factors: Program Characteristics (PC), Student Self-efficacy (SE), Program Outcome Expectancy (OE), Intention to become an Entrepreneur and Data Analyst (IED), and Intention to Study a Degree Program (IS), respectively. In contrast to conventional SCCT research, which predominantly centres on career choices, our study explores individuals' aspirations to pursue training in social entrepreneurship,

an area that has been relatively underexplored within SCCT literature (Tran & Von Korflesch, 2016). Unlike traditional SCCT methodologies that emphasise career selection, our research explicitly analyses the intention to pursue academic study and its relationship to career-enhancing elements. The theoretical foundation of SCCT enables us to examine both career selection and the learning process, particularly how self-efficacy and outcome expectations interplay with programme characteristics to influence students' study intentions.

This study systematically investigates the influence of programme characteristics, self-efficacy, and outcome expectations on students' intentions to engage in social entrepreneurship education, utilising SCCT as a foundational framework. The findings provide significant insights for enhancing curriculum development and policy formulation to encourage greater student participation in social entrepreneurship. The main objective of this study is to examine the factors that influence students' intentions to pursue social entrepreneurship education at Rajabhat University in Thailand using the SCCT framework.

The following sections of this manuscript will cover the literature review, methodology utilised, results, and discussions. These segments, supported by extensive questionnaire results, aim to clarify the intricate dynamics surrounding programme characteristics, SCCT, and student intentions in Thai entrepreneurship education.

Literature Reviews

Social Cognitive Career Theory

The SCCT, based on Albert Bandura's theories, emphasises the dynamic interplay of individual, behavioural, and environmental factors that influence career development. Initially, the SCCT comprised three models focusing on developing interests, decision-making, and academic/professional performance (Lent et al., 1994). Later, two additional models were added to the SCCT: one concentrating on satisfaction and well-being (Lent & Brown, 2008) and another addressing career self-management across the lifespan (Lent & Brown, 2013).

At its core, SCCT revolves around three key concepts: self-efficacy, outcome expectations, and personal goals, which form a three-factor interaction model (Buthelezi et al., 2010). Self-efficacy, influenced by personal performance, vicarious learning, beliefs, and affective states, plays a central role (Bandura, 1997). Furthermore, contextual variables, including background

opportunities and influences on decision-making, significantly affect career interests and decisions (Lent et al., 1994). SCCT interventions aim to increase self-efficacy and overcome barriers by increasing choices, removing obstacles, promoting support and goal setting, supporting self-regulation, and increasing satisfaction (Lent, 2013). Figure 1 illustrates the fundamental variables of SCCT.

Following the research conducted by Tang et al. (2008), the present investigation utilises the SCCT to assess student participation in social entrepreneurship programmes. While these authors focused on aspects such as learning experiences, career self-efficacy, outcome expectancy, career interests, and career choices (Lent & Brown, 2008), our study examines the effects of programme characteristics, self-efficacy, outcome expectancy, entrepreneurial and employment-related skills, as well as study intentions. Drawing on the foundational theories proposed by Lent et al. (1994) and Tang et al. (2008), this research aims to enhance the understanding of the factors influencing students' engagement in initiatives related to social entrepreneurship.

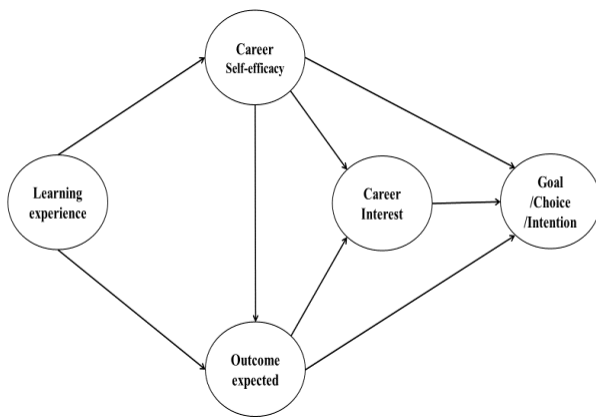


Figure 1 The Concept of SCCT (Lent et al., 1994; Tang et al., 2008)

Gamification for Social Entrepreneurship Education in Rajabhat University

Rajabhat University's social entrepreneurship and business analytics curriculum uses gamification, an innovative teaching strategy that transforms the learning experience by incorporating elements such as competitions. This dynamic approach encourages creativity, critical thinking and collaboration, enhancing theoretical understanding and practical application. Studies by Nadi-Ravandi and Batooli (2022) highlight the effectiveness of gamification in motivating students

and improving engagement in educational institutions. Ruiz-Alba et al. (2019) associate gamification with entrepreneurial intentions and emphasise its potential to strengthen attitudes towards entrepreneurship. Chans & Portuguese Castro (2021) found that gamification increases motivation, engagement and academic performance.

Thomas and Baral (2023) found a significant behavioural and emotional engagement increase during gamified sessions. Da Silva et al. (2019) provide a comprehensive overview and propose a conceptual model for gamification in management education. Kauppinen and Choudhary (2021) examine the impact of Kahoot! in entrepreneurship education, emphasising its effects on engagement, performance, and assessment. Melo et al. (2023) show the positive impact of a simulation game on entrepreneurial intention. Considering the diverse career opportunities, the program emphasises social entrepreneurship and integrates essential employability skills such as business analytics through gamification (Lyons et al., 2023). Lyons et al. (2023) emphasise the significant impact of perceived gamification learning and engagement on student participation in entrepreneurship education.

Program Characteristics (PC)

This study defines PC as *“the program integrates social entrepreneurship, data analytics and game-based learning to educate data-driven, socially responsible entrepreneurs with strong analytical skills, entrepreneurial mindset, ethical awareness and intercultural competence”*. Ramwarungkura (2023) highlighted the essential competencies for social entrepreneurship students and advised that vocational education programmes should cultivate these competencies through relevant courses, practical training, and the accumulation of credits. The PC combines social entrepreneurship, data analytics, and game-based learning to educate data-driven, socially responsible entrepreneurs with strong analytical skills, entrepreneurial thinking, ethical awareness, and intercultural competence (Konakll, 2015). In this holistic programme, students gain insights into business analytics for decision-making and cultivate a global mindset to tackle worldwide social issues. Gamification, capstone projects, design thinking, ethics, and entrepreneurship foster learning and innovation. Continuous assessment guarantees impact and accountability. Researchers indicate that the curriculum fosters perseverance and self-efficacy, assisting students in becoming effective and socially responsible entrepreneurs (Konakll, 2015; Vázquez-Parra et al., 2023). Social entrepreneurship

education enhances employability (Abelha et al., 2020; Winful, 2023). As Thai entrepreneurs typically operate with limited technological resources, the curriculum now includes business analysis skills such as computer literacy and quantitative abilities, thereby enhancing employability. Based on this information, a ten-item questionnaire was developed to evaluate the PC.

Student Self-efficacy (SE)

Self-efficacy beliefs arise from personal successes, observing others, social encouragement and emotional states. This study defines SE as *“learners' confidence in their ability to excel in data-driven social impact initiatives, innovate, lead, communicate effectively, and use technology ethically, supported by mentors and peer support”*. Self-efficacy has significantly influenced students' academic performance (Puozzo & Audrin, 2021). According to Bandura's (1997) theory of social learning, self-efficacy involves the confidence to initiate and maintain behaviours while influencing the environment, which includes confidence in specific tasks and actions (Salas & Cannon-Bowers, 2001). It refers to a person's perception and belief in their abilities and ability to use them effectively to succeed in specific endeavours (Puozzo & Audrin, 2021). Konakll (2015) highlights the important link between effort, perseverance and innovation in social entrepreneurship, with these characteristics predicting self-confidence. The social entrepreneurship curriculum in this study emphasises data-driven impact, innovation, leadership, communication, and ethical technology use and promotes self-efficacy. This approach and program support academic and professional achievement. Based on these findings, a concise five-question self-efficacy test was developed for students.

Program Outcome Expectancy (OE)

Outcome expectations and beliefs about the results of behaviour influence the choice of activity and effort. This study defines OE as *“the expected outcomes or impacts that students anticipate when they enroll in a novel program that combines social entrepreneurship and business analytics”* (Tran, 2019). Social entrepreneurship addresses overlooked problems with positive externalities through sustainable solutions (Santos, 2012). Conversely, business analytics courses seek to integrate “computer literacy” and “quantitative literacy” into business education. Several benefits are anticipated from the current programme. The curriculum imparts knowledge in business analysis, innovative design, and entrepreneurship through communication and teamwork. It trains well-educated professionals in

business analysis and social entrepreneurship who utilise technology ethically, with a strong sense of responsibility for social change. This foundation developed a five-question questionnaire to assess the programme's outcomes.

Intention to become an Entrepreneur and Data Analyst (IED)

This study describes IED as *“the pursuit of ideas for entrepreneurship while learning data analytics. This includes the ambition to develop new businesses, solve real-world problems with an entrepreneurial approach, and communicate data-driven insights to various stakeholders. It also includes learning data analytics skills to combine entrepreneurial skills with data-driven decision making after graduation.”*

Social entrepreneurship education has attracted much attention in recent years. Chengalvala and Rentala (2017) highlight the influence of higher education on entrepreneurial intentions, emphasising factors such as interest, attitude, personality, education and control. Tu et al. (2021) emphasise the importance of social proactivity, innovativeness and risk-taking in the propensity of college graduates to engage in social entrepreneurship. Similarly, Mair and Noboa (2023) focus on perceived desirability and feasibility, which are influenced by empathy, moral judgment, social support and self-efficacy. Iancu et al. (2020) discuss factors that influence social entrepreneurship intention. By integrating these insights into degree programs, graduates are equipped with innovation, leadership and analytical skills, focusing on data literacy, ethical use and project management to address societal challenges through data-driven solutions. This approach meets career needs and prepares students for success. Universities emphasise developing graduates' employability skills, combining generic and specialised skills gained through academic study and practical experience to enhance career opportunities. By incorporating social entrepreneurship and data analytics skills into the curriculum, universities can produce well-prepared graduates to tackle real-world challenges and effectively communicate data insights to diverse audiences.

Intention to Study a Degree Program (IS)

The intention to study a degree program is crucial in understanding study decisions and predicting academic success. Wiswall and Zafar (2015) found that student's educational and career goals significantly influence their choice of the degree program. Hastings et al. (2016) and Pistolesi (2022) support this finding and emphasise the

importance of aligning course offerings with students' goals.

Within the framework of innovative degree programmes that amalgamate various disciplines, including social entrepreneurship and data analytics, the allure of the distinctive curriculum is paramount in attracting prospective students (Janke, 2020). Students meticulously assess whether the programme can effectively address societal challenges through its inventive approach integrating social entrepreneurship, data analytics, and gamification strategies.

Students who perceive alignment between their career aspirations and the programme's objectives are intensely interested in enrolling in the Social Entrepreneurship and Data Analytics programme at Rajabhat University. The programme's distinctive blend of social entrepreneurship, data analytics, and gamification attracts students keen to make a social impact while honing their business and technical skills. A targeted questionnaire was crafted to evaluate prospective students' intentions to enroll and their perceived compatibility with the programme's objectives.

The Conceptual Framework and Hypothesis Development

This study employs SCCT to analyse students' intentions to pursue social entrepreneurship within a data analytics-integrated program (Lent et al., 1994). It examines the relationships among PC, SE, OE, IED, and IS, emphasising the importance of interdisciplinary curricula, experiential learning, and ethical considerations. Unlike traditional applications of SCCT, which primarily focus on career selection (Lent & Brown, 2019), this study extends its scope to encompass program selection, highlighting how interdisciplinary programs enrich entrepreneurial learning and informed decision-making (Sheu & Bordon, 2017). Six hypotheses are formulated based on this theoretical framework.

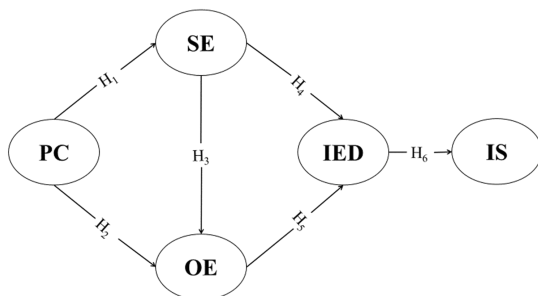


Figure 2 Conceptual Framework

Hypothesis 1 illustrates the relationship between Programme Characteristics (PC) and Student Self-efficacy (SE). Integrating diverse information, fostering positive social change, ethical decision-making, and creative thinking enhances students' self-efficacy (Liu et al., 2021). Moreover, practical experiences such as projects, internships, and mentoring bolster self-efficacy through real-world application (Botha & Bignotti, 2016). Factors contributing to entrepreneurial self-efficacy include cultural and institutional contexts, organisational characteristics, education, work experience, role models, and individual differences (Newman et al., 2019). Therefore, the hypothesis is articulated as:

H1: The programme's characteristics will positively and statistically significantly impact students' self-efficacy.

Hypothesis 2 explores how programme characteristics (PC) affect outcome expectations (OE) through three key mechanisms: (1) industry involvement and a focus on social change, which shape students' expectations of real-world impact; (2) integrated features such as gamification, ethical principles and the development of entrepreneurial skills, which enhance students' anticipated learning outcomes (Li et al., 2023; Willison, 2007); and (3) practical applications through projects and internships, which bolster students' confidence in achieving programme outcomes (Botha, & Bignotti, 2016). Collectively, these elements cultivate positive expectations about acquiring the tools and skills essential for social entrepreneurship and data analytics. Therefore:

H2: The programme's characteristics positively and significantly influence expectations regarding programme outcomes.

Hypothesis 3 examines the relationship between self-efficacy (SE) and outcome expectations (OE) through specific pathways: (1) Students with higher self-efficacy invest more effort and demonstrate greater resilience in pursuing their goals (Bandura, 1997; Pajares, 2003); (2) confidence in their abilities leads to higher expectations of success in key programme areas such as data analysis, design thinking, entrepreneurship, and technology use; and (3) mentorship strengthens this self-efficacy-expectation relationship by providing guided mastery experiences (Wiebe et al., 2018). Therefore:

H3: Student self-efficacy positively influences programme outcome expectations.

Hypothesis 4 examines how self-efficacy (SE) influences entrepreneurial intentions (IED) through three key mechanisms: (1) confidence specific to programmes nurtures career aspirations in social entrepreneurship and data analytics; (2) self-efficacy enhances job-seeking readiness and improves workforce transition abilities (Creed et al., 2001); and (3) elevated self-efficacy reduces anxiety and boosts intrinsic motivation, leading to stronger entrepreneurial intentions (Razak, 2021). This hypothesis highlights how mastering entrepreneurial and analytical skills enhances students' confidence to pursue entrepreneurial ventures. Therefore:

H4: Students' self-efficacy positively influences their intention to engage in entrepreneurship through business analysis.

Hypothesis 5 explores the connection between outcome expectations (OE) and entrepreneurial intentions (IED) through two primary pathways: (1) students who anticipate favourable programme outcomes are more inclined to pursue careers in social entrepreneurship and data analytics after graduation, and (2) strong outcome expectations enhance career interest and perceived employability (Tang et al., 2008; Lent & Brown, 2019). Research indicates that when students believe in the programme's ability to impart essential skills and knowledge, they cultivate stronger intentions to utilise these capabilities in entrepreneurial ventures. Therefore:

H5: Positive programme outcome expectations for graduates positively influence entrepreneurial intentions and employability in data analytics.

Hypothesis 6 investigates how entrepreneurial intentions (IED) drive programme enrolment through three mechanisms: (1) students with entrepreneurial aspirations are attracted to programmes that align with their career goals, particularly those that integrate social entrepreneurship, data analytics, and gamification; (2) perceived programme-career alignment enhances enrolment intentions (Cranmer, 2006); and (3) students' beliefs about career development influence their programme selection, especially when they perceive clear pathways to achieving their entrepreneurial and analytical objectives. This relationship indicates that career intentions are a key motivator for educational choices. Therefore:

H6: The intention to become an entrepreneur and data analyst positively influences the intention to enroll in the program.

Research Methodology

1. Population and Samples

The survey included unknown students from Pathum Thani High School and a vocational school. With an infinite number of students, a minimum sample size of 400 is recommended (Yamane, 1967). The web-based tool by Soper (2024) recommends 174 samples for a model with an effect size of 0.15, a statistical power of 0.80, a significance level of 0.05, 29 indicators, and five latent components. The sample of high school and vocational school students in Pathum Thani Province is 738, exceeding the required size of 400 and the calculated size of 174.

2. Research Instrument

The questionnaire underwent rigorous development and validation to ensure research quality. Three experts evaluated its content validity using the Index of Item-Objective Congruence (IOC), yielding scores of 0.75–1.00 across most items. Reliability testing demonstrated high internal consistency with Cronbach's Alpha coefficients ranging from 0.936 to 0.965, following best-practice procedures for scale development and validation (Boateng et al., 2018). This validation process enhanced the instrument's credibility and appropriateness for the study's objectives. It included five latent variables: PC, IED, OE, SE, and IS. PC describes the social entrepreneurship and data analytics major, while IED measures students' entrepreneurial intentions and perceived employability in business analytics (Atitsogbe et al., 2019). OE measures students' expectations of their skills and competencies after graduation, and SE measures their confidence in completing the degree program (Bandura, 1977). Explanation of the variable sources in the questionnaire, mainly those developed by the authors, specifically PC, OE, and IED, is as follows:

Program Characters (PC): Developed from a literature review on curriculum design that integrates entrepreneurship and data analytics, ensuring that students acquire essential entrepreneurial and analytical skills, drawing from development scales such as Ramwarungkura (2023).

Output Expectation (OE): Based on studies of key graduate skills in data analytics, design, entrepreneurship, and communication, which are crucial for workforce readiness, including Tran (2019).

Self-Efficacy (SE): Grounded in Bandura's (1997) self-efficacy theory, highlighting the belief in one's ability to succeed, along with Puozzo and Audrin's

(2021) work on academic and personal growth.

Intention to Study (IS): This concept, derived from Wiswall and Zafar (2015), is supported by Hastings et al. (2016) and Pistolesi (2022), who emphasise the importance of aligning course offerings with students' goals. Innovative programmes that combine social entrepreneurship and data analytics attract students through their unique curriculum design (Janke, 2020).

Intention to Entrepreneurship & Business Analytics (IED): This concept is drawn from the literature on entrepreneurial intentions and business analytics, focusing on students' aspirations to utilise data analytics in business ventures. It is inspired by the works of Chengalvala and Rentala (2017), Tu et al. (2021), and Mair and Noboa (2023).

3. Collection of Data

A stratified random sampling method was utilised to represent vocational and high school students in Pathum Thani. Data were collected from Pathum Thani Technical College and high schools in Mueang Pathum Thani between 20 May and 22 June 2024. Teachers received training on research objectives and questionnaire administration to ensure data consistency. Participants provided informed consent, and their responses remained anonymous, ensuring validity and generalisability.

4. Data Analysis

In PLS-SEM, model evaluation comprises three key components: Model fit, measurement model, and structural model (Hair et al., 2017).

Model fit: Model fit assessment includes criteria such as standardised root mean square residuals (SRMR), geodesic discrepancy (dG), and unweighted least squares discrepancy (dULS), which should be below the 99th percentile. Alternatively, an SRMR value below 0.08 can be considered acceptable (Henseler et al., 2016).

The measurement model and CFA assess the reliability and validity of the correlations between latent variables and observed indicators. Key criteria include indicator reliability (factor loadings > 0.708), internal consistency (CR, ρ_A , ρ_C , $\alpha > 0.70$), convergent validity (AVE > 0.50), and discriminant validity (HTMT, HTMT2 ratio < 0.85). A rigorous CFA ensures the quality of the measurement scales for the subsequent structural model testing in PLS-SEM.

The structural model evaluates the assumed relationships between latent variables. The criteria include the significance and relevance of the path coefficients, the coefficient of determination (R^2) for the explained variance, and the effect size (f^2) to evaluate the

effects. Significance is determined by a t-value ≥ 1.96 and a p-value < 0.05 .

Results & Discussion

Respondent Data

The survey engaged 732 respondents from Pathum Thani vocational and high school programs. The predominant demographic among the respondents consisted of vocational students in their final year (Year 3), aged between 18 and 19 years, which aligns with the primary target demographic of this study. Since gender and education level were not central analytical variables, comprehensive demographic distributions have been omitted to maintain brevity. These findings provide substantial insights into the demographic composition of prospective students, thus facilitating the development of social entrepreneurship and data analytics programs that align with their educational backgrounds and career aspirations.

Total Model Fit

The saturated CFA model indicates a poor fit when comparing CFA and PLS-SEM, as the SRMR, dULS, and dG values exceed the bootstrap thresholds. For PLS-SEM, the SRMR value of the saturated model indicates a good fit, but the dULS and dG values argue against it. Although CFA performs better on the SRMR value for the saturated model, both methods show an inadequate fit when the dULS and dG values are considered. Various fit indices and contextual factors should be considered in the overall evaluation of the model (Henseler et al., 2016; Hair et al., 2017).

Table 1 Model fit

Model		CFA			PLS-SEM		
		Value	HI95	HI99	Value	HI95	HI99
Saturate model	SRMR	0.0437	0.0325	0.0364	0.0462	0.0308	0.0343
	dULS	0.4821	0.2667	0.3352	0.9294	0.4133	0.5107
	dG	1.0177	0.4532	0.5773	1.8552	0.8541	1.2818

Measurement Model of CFA & PLS-SEM

In this study, the CFA is used to assess the reliability and validity of the scale, using the same criteria as for the PLS-SEM measurement model (Hair et al., 2017). The scale development process involved several steps to ensure the scale's psychometric properties are sound (DeVellis, 2017). First, a thorough literature review was conducted to identify the relevant constructs and their theoretical underpinnings (Carpenter, 2018). Based on this review, an initial pool of items was

created to capture the essence of each construct (Boateng et al., 2018). The items were then subjected to expert review to assess their face and content validity (Taherdoost, 2016). A pilot study was then conducted to refine the scale and assess its preliminary psychometric properties (Johanson & Brooks, 2010). The data collected in the pilot study was analysed using CFA to assess the reliability and validity of the scale (Brown, 2015). The measurement model was evaluated using the same criteria as the PLS-SEM, including factor loadings, composite reliability (CR), average variance extracted (AVE), and discriminant validity (Hair et al., 2019). Following the Confirmatory Factor Analysis (CFA) results, the scale was refined by removing or modifying items that failed to meet the established criteria (Worthington & Whittaker, 2006). The revised scale was then employed on a larger sample to validate its psychometric properties and ascertain its generalizability (DeVellis, 2017).

The latent variables' internal consistency, indicator reliability, and convergent validity were demonstrated, with all parameters meeting the required thresholds (Hair et al., 2019). However, problems with discriminant validity between IED, SE, and IS were identified, with IED acting as a mediator between SE and IS. To address these issues, a cross-loading analysis was conducted (Henseler et al., 2015). The item with the highest cross-loading, IED5, was removed first to improve the discriminant validity between IED and IS. As there were still problems with discriminant validity, items IS2

and IS3 were subsequently removed. To establish discriminant validity between SE and IED, item IED2 was removed, followed by the removal of SE5, thereby achieving discriminant validity in the PLS-SEM model (Fornell & Larcker, 1981). All measurement criteria of CFA and PLS-SEM are almost identical. The HTMT2 consistently demonstrates identical values for discriminant validity in both CFA and PLS-SEM. The lowest correlation is noted in the IS-PC pair at 0.0506. In contrast, the highest correlation is observed in the IED-SE pair at 0.8448. Both the CFA and PLS-SEM models produce congruent values.

This study used the SCCT to examine students' aspirations to study social entrepreneurship in a program that combines it with data analysis (Lent et al., 1994). The framework combined program characteristics, student self-efficacy, expectations of program outcomes, intentions related to social entrepreneurship and data analysis, and study intentions. Figure 3 presents the CFA results from ADANCO, illustrating the validity measurement scale. While the SCCT is commonly used to examine people's career choices (Lent & Brown, 2019), this study extends its application to the context of study intention. Similar adaptations of the SCCT have been used in other research contexts. For example, Oh et al., (2025) used the SCCT to examine the factors that influence international students' decision to study abroad and found that self-efficacy and outcome expectations play an important role.

Table 2 Loading, Internal Consistency and AVE of CFA and PLS-SEM

Items	Loading		Alpha		AVE	
	CFA	PLS-SEM	CFA	PLS-SEM	CFA	PLS-SEM
Program Characters (PC) (Alpha = 0.956)			0.9677	0.9677	0.7502	0.7502
PC1 The course focuses on social entrepreneurship, data analytics and game-based learning.	0.7643	0.7643				
PC2 The course emphasizes data-driven social entrepreneurs who improve society.	0.8215	0.8215				
PC3 The course enables learners to analyse and interpret data effectively.	0.8180	0.8180				
PC4 Project-based learning and internships teach social entrepreneurship and data analysis.	0.8269	0.8269				
PC5 Games enhance learning and creatively engage learners to capture their attention.	0.8796	0.8796				
PC6 Encourage design thinking, innovation and social entrepreneurship in the classroom.	0.9203	0.9203				
PC7 Anchor the ethical and legal obligation to socially responsible entrepreneurship.	0.9140	0.9140				
PC8 Enhance entrepreneurial skills like leadership, communication, problem-solving, and adaptability.	0.8946	0.8946				
PC9 Promoting understanding of cultural and international social differences.	0.8947	0.8947				
PC10 Supporting learners in assessing their social entrepreneurship skills effectively.	0.9128	0.9128				

Table 2 (Continue)

Items	Loading		Alpha		AVE	
	CFA	PLS-SEM	CFA	PLS-SEM	CFA	PLS-SEM
Output expectation (Graduate skills) (OE) (Alpha = 0.965)			0.9453	0.9453	0.8120	0.8120
OE1 Gamification can help graduates to develop creative problem-solving skills.	0.9048	0.9048				
OE2 Gamification helps graduates to develop unique problem-solving skills.	0.9038	0.9038				
OE3 Graduates learn to be entrepreneurs by learning how to plan, finance, grow and manage a business.	0.9418	0.9418				
OE4 Social entrepreneurship and data analytics graduates require sales, communication, and teamwork skills.	0.9824	0.9824				
Self-Efficacy (SE) (Alpha = 0.936)			0.9646	0.9646	0.8719	0.8719
SE1 Considering these factors, I can excel in the selected university's courses.	0.8967	0.8967				
SE2 I am eager to pursue a four-year Bachelor's degree in Data Analytics and Social Entrepreneurship with a focus on gamification.	0.8940	0.8940				
SE3 I am confident that I will be successful in the areas of data analytics and social entrepreneurship.	0.8989	0.8989				
SE4 Mentor and peer support boost program confidence.	0.9147	0.9147				
Intention to Entrepreneur & Data Analyst (IED) (Alpha = 0.950)			0.9170	0.9170	0.7862	0.7863
IED1 I intend to launch my own business within a few years of graduating.	0.9216	0.9216				
IED3 I see myself as someone likely to take the initiative to start a business.	0.8809	0.8809				
IED4 After graduation, I'll be skilled in complex data analysis using various tools.	0.8565	0.8565				
Intention to Study (IS) (Alpha = 0.940)			-	-	1.0000	1.0000
IS1 I am interested in enrolling in the Social Entrepreneurship and Data Analytics program.	1.0000	1.0000				

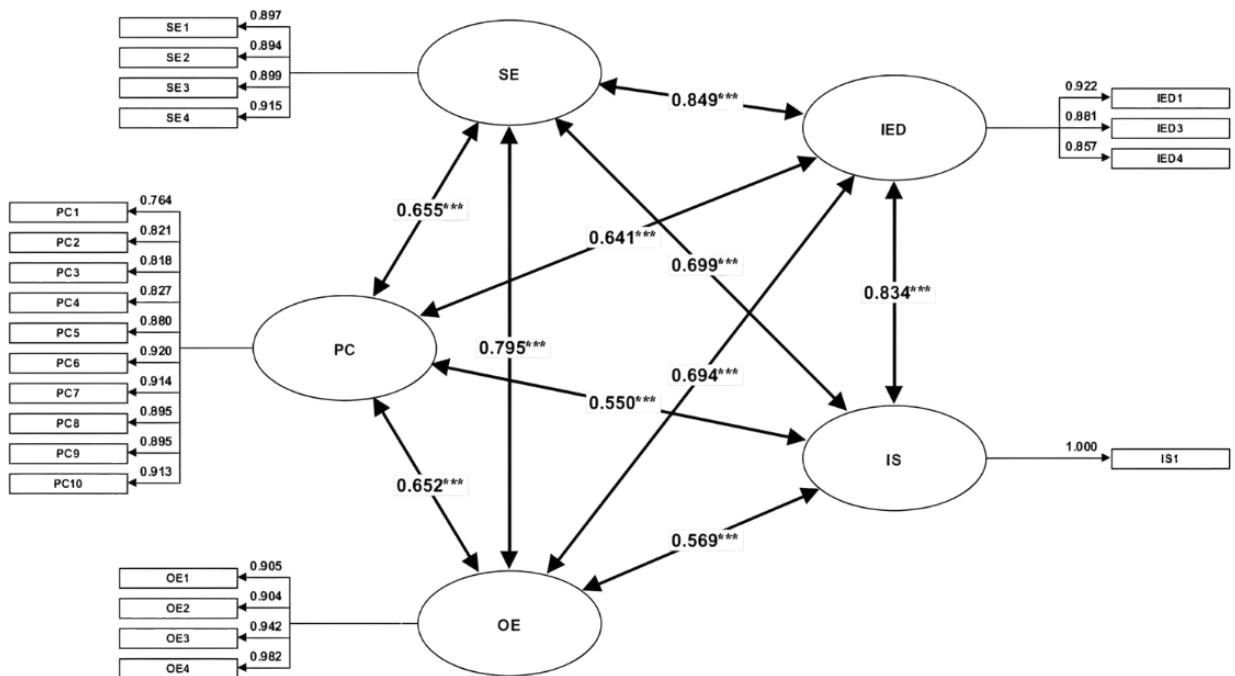


Figure 3 CFA Result

The present study contributes to the growing body of research applying SCCT to various educational contexts. It demonstrates its versatility in understanding the factors influencing students' intentions to study in specific fields or programs (Sheu & Bordon, 2017). By focusing on the unique context of social entrepreneurship and business analytics education, this study provides valuable insights into the factors that influence students' intentions toward interdisciplinary majors and the potential role of such majors in fostering social entrepreneurship and data-driven decision-making skills.

Structural Model

The results of the structural model, as shown in Figure 4, support the fitted SCCT model and the proposed hypotheses. Below is a summary of the results of the hypothesis tests:

Hypothesis 1 (H1), which states that program characteristics (PC) have a positive and statistically significant impact on students' self-efficacy (SE), is supported ($\beta = 0.655$, $p < 0.01$, 95% CI [0.578, 0.730]).

Hypothesis 2 (H2), which states that program characteristics (PC) have a positive and significant influence on outcome expectancy (OE), is also supported ($\beta = 0.230$, $p < 0.001$, 95% CI [0.114, 0.351]).

Hypothesis 3 (H3), which states that students' self-efficacy (SE) positively influences outcome expectancy (OE), is supported ($\beta = 0.645$, $p < 0.01$, 95% CI [0.529, 0.748]).

Hypothesis 4 (H4), which states that students' self-efficacy (SE) has a positive influence on their intention to become an entrepreneur and data analyst (IED), is supported ($\beta = 0.806$, $p < 0.01$, 95% CI [0.636, 0.976]).

Hypothesis 5 (H5), which states that positive program outcome expectations (OE) positively influence intention to become an entrepreneur and data analyst (IED), is not supported ($\beta = 0.053$, $p > 0.05$, 95% CI [-0.132, 0.232]). This finding indicates that students' career intentions may be shaped by factors beyond the perceived benefits of the program, including financial considerations, risk perceptions, and cultural attitudes toward entrepreneurship.

Hypothesis 6 (H6), stating that intention to become an entrepreneur and data analyst (IED) has a positive influence on intention to enrol in the program (IS), is supported ($\beta = 0.834$, $p < 0.01$, 95% CI [0.781, 0.880]).

The model explained a considerable amount of variance in the endogenous variables, with R-squared

values of 0.430 for self-efficacy (SE), 0.663 for outcome expectancy (OE), 0.720 for intention to become an entrepreneur and data analyst (IED), and 0.696 for intention to study (IS).

The structural model results strongly support the adjusted SCCT model and underscore the critical role of program characteristics in shaping student self-efficacy and outcome expectancy. Self-efficacy is a key factor influencing students' intention to become entrepreneurs and data analysts, which strongly predicts their intention to enroll in the program. However, the results do not support the hypothesised relationship between outcome expectations and students' career intentions in this context. This study illuminates Thai students' intentions to learn social entrepreneurship. The revised SCCT structural model reveals the complex relationship between program characteristics, self-efficacy, outcome expectations, intention to become an entrepreneur and data analyst, and enrollment decisions.

The results support most of the hypothesised relationships and confirm the significant role of program characteristics in shaping students' self-efficacy and outcome expectations (H1 and H2). This is consistent with previous research highlighting the importance of well-designed curricula in fostering students' positive perceptions and confidence (Liu et al., 2021). Integrating social entrepreneurship, data analytics, and gamification strategies into the program seems promising for engaging and motivating students (Lyons et al., 2023). Furthermore, the study highlights the crucial role of self-efficacy in fostering entrepreneurial intentions and perceived employability in business analytics (H4). This finding is consistent with the work of Bandura (1997) and Pajares (2003), who suggest that self-efficacy is associated with increased effort, determination and resilience. The positive influence of self-efficacy on outcome expectations (H3) highlights the dynamic relationship between these constructs, as Wiebe et al. (2018) suggested.

However, the rejection of hypothesis H5 indicates that outcome expectations do not significantly influence entrepreneurial intentions or employability within this context. This finding contrasts with the conclusions of Tang et al. (2008) and Lent & Brown (2019), who reported a positive association between outcome expectations and career interests. The observed discrepancy may be attributed to the specific context of social entrepreneurship education in Thailand, which suggests a necessity for further investigation. While

SCCT posits that outcome expectations positively influence career intentions (Lent et al., 1994), this study identified no significant relationship ($p > 0.05$) between OE and IED. This finding diverges from research conducted in Western contexts (Tang et al., 2008), indicating that students who perceived more incredible benefits from the program were more inclined to pursue entrepreneurship. It is plausible that cultural and economic factors unique to Thailand influence students' career decisions in a manner that differs from these Western interpretations.

motivation by examining how program characteristics, self-efficacy, and outcome expectations influence students' intentions to enroll in social entrepreneurship education (Tang et al., 2008; Sheu & Bordon, 2017). This adaptation of SCCT significantly increases its relevance to entrepreneurship education, particularly in emerging economies where social entrepreneurship plays a crucial role in economic and social development (Mair & Noboa, 2023; Liu et al., 2021).

From a practical perspective, the study offers valuable insights for educational institutions and

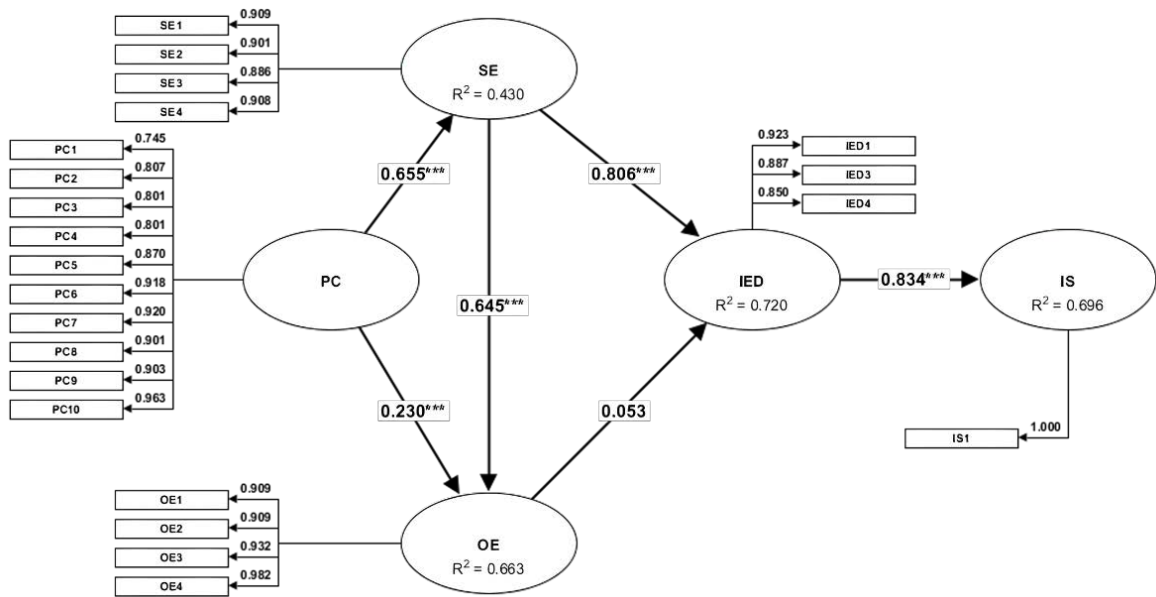


Figure 4 Structural Model Results of the Study

The strong support for H6 highlights the central role of entrepreneurial intentions and perceived employability in students' study decisions. This confirms the findings of Cranmer (2006) and Fantinelli et al. (2023) who found a positive correlation between career aspirations and intention to enroll in specific degree programs.

This research expands the application of SCCT beyond conventional models of career choice by incorporating the concept of study intentions, an area that has received inadequate attention in prior research (Tran & Von Korflesch, 2016; Lent & Brown, 2019). The current study offers novel insights into the relationship between educational program selection and career

policymakers in Thailand. The findings suggest that developing programs that promote self-efficacy and communicate expected outcomes can significantly increase student participation in social entrepreneurship education. This can be achieved by integrating experiential learning opportunities, mentoring support, and collaborations with industry (Botha & Bignotti, 2016).

Factors Influencing Entrepreneurial Intentions in Thailand

Restating the Unexpected Finding (H5 Rejection): The study identified no significant relationship ($p > 0.05$) between organizational engagement (OE) and entrepreneurial dynamics (ED), which contradicts

previous research (Tang et al., 2008; Lent & Brown, 2019) that emphasised a positive association between program benefits and career intentions. This discrepancy implies that Thailand's unique context may significantly impact students' career decisions.

Possible Explanations in the Thai Context:

- **Risk Aversion and Job Security:** Thai students frequently perceive entrepreneurship as a high-risk endeavour, preferring stable employment opportunities within the government or corporate sectors (Mair & Noboa, 2023), in contrast to Western economies where entrepreneurship is more widely accepted (Tang et al., 2008).

- **Financial Constraints and Limited Support:** Initiating a business requires capital, networks, and mentorship, resources that are often unavailable to many vocational and high school students (Chengalvala & Rentala, 2017), rendering entrepreneurship appear unattainable without adequate financial or institutional support.

- **Entrepreneurship versus Traditional Employment:** Although students recognise the advantages of entrepreneurial education, the allure of stable salaries and career development opportunities within established organisations often surpasses the perceived risks associated with business ownership (Tchokoté et al., 2025).

These findings underscore the necessity for enhanced entrepreneurial support in Thailand, including funding, mentorship, and policy incentives to mitigate risk perceptions. Future research should investigate how financial and cultural factors impact career choices in emerging economies with underdeveloped entrepreneurial ecosystems.

Implications of the Research Findings

Educational institutions can enhance social entrepreneurship education by developing curricula emphasising students' self-efficacy through experiential learning, gamification, and collaborations with industry partners. The findings indicate significant policy implications for Rajabhat Universities. These institutions should establish integrated support centres that provide mentorship, funding, and incubation services while adhering to moderation, rationality, and self-immunity principles, as outlined by Ketprapakorn and Kantabutra (2019). Furthermore, universities should collaborate with local small and medium-sized enterprises (SMEs) and social enterprises to offer practical training opportunities (Smith & Woodworth, 2012). It is imperative to implement

a community-based learning approach that incorporates project-based work. Additionally, developing faculty expertise in digital tools and gamification is essential to ensure the effective delivery of the program (Roslan et al., 2020). Establishing networks among Rajabhat Universities would further facilitate the sharing of resources and the exchange of best practices.

Limitations and Future Research

Limitations: This study presents significant insights, albeit with certain limitations. The cross-sectional design restricts causal inference, indicating a necessity for longitudinal research to investigate the long-term effects of social entrepreneurship education on students' careers (Delmar & Johnson, 2015). The concentration on Thailand may hinder generalizability, underscoring the imperative to validate the adapted SCCT model across diverse sociocultural contexts (Vázquez-Parra et al., 2023). Qualitative methodologies, such as interviews and case studies, may provide deeper insights into the role of self-efficacy in social entrepreneurship, facilitating program design and policy development. This study contributes to the comprehension of the factors propelling social entrepreneurship education in Thailand, with the adapted SCCT model serving as a robust framework for the formulation of effective programs aimed at cultivating socially responsible leaders (Minai et al., 2018; Mukhtar et al., 2021).

Recommendations for Future Research: Future studies should adopt longitudinal designs to assess long-term impacts, conduct cross-cultural comparisons to enhance generalizability, and employ qualitative methods for deeper insights into self-efficacy's influence on social entrepreneurship, informing educational program design and policy development.

Conclusion

The adapted SCCT model elucidates the determinants of social entrepreneurship education at Thai Rajabhat Universities. Significant factors encompass program characteristics, self-efficacy, and anticipated outcomes, influencing entrepreneurial objectives and enrollment choices. This study emphasises the necessity of well-structured curricula, experiential learning opportunities, and mentorship programs to cultivate self-efficacy and enhance student engagement. The significance of self-efficacy in shaping entrepreneurial intentions and employability is consistent with the findings of Bandura (1997) and Pajares (2003), reinforcing the importance of student confidence. Furthermore,

the study accentuates the necessity for transparent communication regarding expected outcomes, as posited by Wiebe et al. (2018). The rejection of Hypothesis 5 indicates distinctive challenges within Thailand's social entrepreneurship education sector, thereby necessitating further investigation. Practical implications include developing programs designed to bolster self-efficacy, facilitate real-world project experiences, and nurture collaborations with industry stakeholders, as suggested by Botha and Bignotti (2016). Using PLS-SEM for scale validation is advocated, enhancing research efficiency, as Hair et al. (2017) noted.

Ethical research

The Valaya Alongkorn Rajabhat University Institutional Review Board (IRB) has approved this project under project number 0102/2566 for ethical research involving human subjects before data collection.

Declaration of Generative AI and AI-Assisted Technologies in the Writing Process

During the preparation of this manuscript, the author used Grammarly for grammar checking. The final content was reviewed and edited by me, the author, for accuracy and the integrity of the publication.

Conflict of Interests

The author declares no conflicts of interest.

References

- Abelha, M., Fernandes, S., Mesquita, D., Seabra, F., & Ferreira-Oliveira, A. T. (2020). Graduate employability and competence development in higher education—A systematic literature review using PRISMA. *Sustainability*, 12(15), 5900. <https://doi.org/10.3390/su12155900>
- Atitsogbe, K. A., Mama, N. P., Sovet, L., Pari, P., & Rossier, J. (2019). Perceived employability and entrepreneurial intentions across university students and job seekers in Togo: The effect of career adaptability and self-efficacy. *Frontiers in Psychology*, 10, 180. <https://doi.org/10.3389/fpsyg.2019.00180>
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. W. H. Freeman.
- Boateng, G. O., Neilands, T. B., Frongillo, E. A., Melgar-Quinonez, H. R., & Young, S. L. (2018). Best practices for developing and validating scales for health, social, and behavioral research: A primer. *Frontiers in Public Health*, 6, 149. <https://doi.org/10.3389/fpubh.2018.00149>
- Botha, M., & Bignotti, A. (2016). Internships enhancing entrepreneurial intent and self-efficacy: Investigating tertiary-level entrepreneurship education programmes. *The Southern African Journal of Entrepreneurship and Small Business Management*, 8(1), a45. <https://doi.org/10.4102/sajesbm.v8i1.45>
- Brown, T. A. (2015). *Confirmatory factor analysis for applied research* (2nd ed.). The Guilford Press.
- Carpenter, S. (2018). Ten steps in scale development and reporting: A guide for researchers. *Communication Methods and Measures*, 12(1), 25–44. <https://doi.org/10.1080/19312458.2017.1396583>
- Chans, G. M., & Portuguese Castro, M. (2021). Gamification as a strategy to increase motivation and engagement in higher education chemistry students. *Computers*, 10(10), 132.
- Charoenrat, T., & Harvie, C. (2017). Thailand's SME participation in ASEAN and East Asian regional economic integration. *Journal of Southeast Asian Economies*, 34(1) 148–174. <https://doi.org/10.1355/ae34-1f>
- Chengalvala, S., & Rentala, S. (2017). Intentions towards social entrepreneurship among university students in India. *International Journal of Research - Granthaalayah*, 5(6), 406–413.
- Chienwattanasook, K., Jermittiparsert, K., & Jarinto, K. (2019). The influence of entrepreneurial orientation, entrepreneurial education and university support on the entrepreneurial intentions of Thai graduates, with the moderating role of culture. *International Journal of Innovation, Creativity and Change*, 10(1), 198–220.
- Cranmer, S. (2006). Enhancing graduate employability: Best intentions and mixed outcomes. *Studies in Higher Education*, 31(2), 169–184. <https://doi.org/10.1080/03075070600572041>
- Creed, P. A., Bloxsome, T. D., & Johnston, K. (2001). Self-esteem and self-efficacy outcomes for unemployed individuals attending occupational skills training programs. *Community, Work & Family*, 4(3), 285–303.
- Da Silva, R. J. R., Rodrigues, R. G., & Leal, C. T. P. (2019). Gamification in management education: A systematic literature review. *BAR - Brazilian Administration Review*, 16(2), e180103. <https://doi.org/10.1590/1807-7692bar2019180103>
- Delmar, F., & Johnson, A. R. (2015). Doing theory predicted longitudinal research in entrepreneurship: Linking process to outcomes. In *Academy of Management 75th Annual Meeting* (pp. 1–40). <https://doi.org/10.5465/AMBPP.2015.12348abstract>
- Doherty, B., & Kittipanya-Ngam, P. (2021). The emergence and contested growth of social enterprise in Thailand. *Journal of Asian Public Policy*, 14(2), 251–271. <https://doi.org/10.1080/17516234.2020.1777628>
- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39–50. <https://doi.org/10.1177/002224378101800104>

- Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2017). *A primer on partial least squares structural equation modeling (PLS-SEM)* (2nd ed.). SAGE Publications.
- Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review*, 31(1), 2–24. <https://doi.org/10.1108/EBR-11-2018-0203>
- Hastings, J. S., Neilson, C. A., Ramirez, A., & Zimmerman, S. D. (2016). (Un)informed college and major choice: Evidence from linked survey and administrative data. *Economics of Education Review*, 51, 136–151. <https://doi.org/10.1016/j.econedurev.2015.06.005>
- Henseler, J., Hubona, G., & Ray, P. A. (2016). Using PLS path modelling in new technology research: Updated guidelines. *Industrial Management & Data Systems*, 116(1), 2–20. <https://doi.org/10.1108/IMDS-09-2015-0382>
- Iancu, A., Popescu, L., & Popescu, V. (2021). Factors influencing social entrepreneurship intentions in Romania. *Economic Research-Ekonomska Istraživanja*, 34(1), 1190–1201. <https://doi.org/10.1080/1331677X.2020.1820358>
- Janke, S. (2020). Prospective effects of motivation for enrollment on well-being and motivation at university. *Studies in Higher Education*, 45(12), 2413–2425. <https://doi.org/10.1080/03075079.2019.1612353>
- Johanson, G. A., & Brooks, G. P. (2010). Initial scale development: Sample size for pilot studies. *Educational and Psychological Measurement*, 70(3), 394–400. <https://doi.org/10.1177/0013164409355692>
- Kauppinen, A., & Choudhary, A. I. (2021). Gamification in entrepreneurship education: A concrete application of Kahoot! *The International Journal of Management Education*, 19(3), 100563. <https://doi.org/10.1016/j.ijme.2021.100563>
- Ketprapakorn, N., & Kantabutra, S. (2019). Sustainable social enterprise model: Relationships and consequences. *Sustainability*, 11(14), 3772. <https://doi.org/10.3390/su11143772>
- Konaklı, T. (2015). Effects of Self-Efficacy on Social Entrepreneurship in Education: A Correlational Research. *Research in Education*, 94(1), 30–43.
- Lent, R. W. (2013). Social cognitive career theory. In S. D. Brown & R. W. Lent (Eds.), *Career development and counseling: Putting theory and research to work* (2nd ed., pp. 115–144). Wiley.
- Lent, R. W., & Brown, S. D. (2008). Social cognitive career theory and subjective well-being in the context of work. *Journal of Career Assessment*, 16(1), 6–21. <https://doi.org/10.1177/1069072707305769>
- Lent, R. W., & Brown, S. D. (2013). A social cognitive model of career self-management: Toward a unifying view of adaptive career behavior across the life span. *Journal of Counseling Psychology*, 60(4), 557–568. <https://doi.org/10.1037/a0033446>
- Lent, R. W., & Brown, S. D. (2019). Social cognitive career theory at 25: Empirical status of the interest, choice, and performance models. *Journal of Vocational Behavior*, 115, 103316. <https://doi.org/10.1016/j.jvb.2019.06.004>
- Lent, R. W., Brown, S. D., & Hackett, G. (1994). Toward a unifying social cognitive theory of career and academic interest, choice, and performance. *Journal of Vocational Behavior*, 45(1), 79–122. <https://doi.org/10.1006/jvbe.1994.1027>
- Li, M., Ma, S., & Shi, Y. (2023). Examining the effectiveness of gamification as a tool promoting teaching and learning in educational settings: A meta-analysis. *Frontiers in Psychology*, 14, 1253549. <https://doi.org/10.3389/fpsyg.2023.1253549>
- Liu, T., Yu, X., Liu, M., Wang, M., Zhu, X., & Yang, X. (2021). A mixed method evaluation of an integrated course in improving critical thinking and creative self-efficacy among nursing students. *Nurse Education Today*, 106, 105067. <https://doi.org/10.1016/j.nedt.2021.105067>
- Lyons, R. M., Fox, G., & Stephens, S. (2023). Gamification to enhance engagement and higher-order learning in entrepreneurial education. *Education + Training*, 65(3), 416–432. <https://doi.org/10.1108/ET-05-2022-0204>
- Mair, J., & Noboa, E. (2006). Social entrepreneurship: How intentions to create a social venture are formed. In J. Mair, J. Robinson, & K. Hockerts (Eds.), *Social Entrepreneurship* (pp. 121–135). Palgrave Macmillan. https://doi.org/10.1057/9780230625655_8
- Melo, F. L. N. B. de, Soares, A. M. J., Sampaio, L. M. B., & Lima-de-Oliveira, R. (2023). The impact of gamification on entrepreneurial intention in a Brazilian technical business school. *Brazilian Administration Review*, 20(1), e210033. <https://doi.org/10.1590/1807-7692bar2023210033>
- Minai, M. S., Raza, S., bin Hashim, N. A., Zain, A. Y. M., & Tariq, T. A. (2018). Linking entrepreneurial education with firm performance through entrepreneurial competencies: A proposed conceptual framework. *Journal of Entrepreneurship Education*, 21(4), 1–9.
- Mukhtar, S., Wardana, L. W., Wibowo, A., & Narmaditya, B. S. (2021). Does entrepreneurship education and culture promote students' entrepreneurial intention? The mediating role of entrepreneurial mindset. *Cogent Education*, 8(1), 1918849. <https://doi.org/10.1080/2331186X.2021.1918849>
- Narangajavana, Y., Gonzalez-Cruz, T., Garrigos-Simon, F. J., & Cruz-Ros, S. (2016). Measuring social entrepreneurship and social value with leakage: Definition, analysis and policies for the hospitality industry. *International Entrepreneurship and Management Journal*, 12, 911–934. <https://doi.org/10.1007/s11365-016-0396-5>
- Nadi-Ravandi S, & Batooli Z. (2022) Gamification in education: A scientometric, content and co-occurrence analysis of systematic review and meta-analysis articles. *Education and Information Technologies*, 27(7), 10207–10238. <https://doi.org/10.1007/s10639-022-11048-x>.

- Newman, A., Obschonka, M., Schwarz, S., Cohen, M., & Nielsen, I. (2019). Entrepreneurial self-efficacy: A systematic review of the literature on its theoretical foundations, measurement, antecedents, and outcomes, and an agenda for future research. *Journal of Vocational Behavior*, 110, 403–419. <https://doi.org/10.1016/j.jvb.2018.05.012>
- Oh, J., Shim M., & Kim S. (2025). Investigating the mediating role of career aptitude on the career path of international students. *Career Development International*, Vol. 30 No. 4 pp. 411–425. <https://doi.org/10.1108/CDI-12-2023-0426>
- Olivier, E., Archambault, I., De Clercq, M., & Galand, B. (2019). Student self-efficacy, classroom engagement, and academic achievement: Comparing three theoretical frameworks. *Journal of Youth and Adolescence*, 48(2), 326–340. <https://doi.org/10.1007/s10964-018-0952-0>
- Pajares, F. (2003). Self-efficacy beliefs, motivation, and achievement in writing: A review of the literature. *Reading & Writing Quarterly*, 19(2), 139–158. <https://doi.org/10.1080/10573560308222>
- Pistolesi, N. (2022). Advising students on their field of study: Evidence from a French university reform. *Labour Economics*, 74, 102092. <https://doi.org/10.1016/j.labeco.2016.12.002>
- Puozzo, I. C., & Audrin, C. (2021). Improving self-efficacy and creative self-efficacy to foster creativity and learning in schools. *Thinking Skills and Creativity*, 42, 100966. <https://doi.org/10.1016/j.tsc.2021.100966>
- Ramwarungkura, A. (2023). The Approaches of Developing Based on the Concept of Competency Based Curriculum for Social Entrepreneurship of Vocational Education Programs in Thailand. *Thammasat Review*, 26(2), 102–140. retrieved from <https://sc01.tci-thaijo.org/index.php/tureview/article/view/240581>
- Razak, N. (2022). How self-efficacy drives job performance: The role of job anxiety and intrinsic motivation. *Journal Manajemen*, 25(2), 190–205. <https://doi.org/10.24912/jm.v25i2.735>
- Roslan, M. H. H., Hamid, S., Ijab, M. T., Yusop, F. D., & Norman, A. A. (2022). Social entrepreneurship in higher education: Challenges and opportunities. *Asia Pacific Journal of Education*, 42(3), 588–604. <https://doi.org/10.1080/02188791.2020.1859354>
- Ruiz-Alba, J. L., Soares, A., Rodríguez-Molina, M. A., & Banoun, A. (2019). Gamification and entrepreneurial intentions. *Journal of Small Business and Enterprise Development*, 26(5), 661–680. <https://doi.org/10.1108/JSBED-09-2018-0266>
- Salas, E., & Cannon-Bowers, J. A. (2001). The science of training: A decade of progress. *Annual Review of Psychology*, 52(1), 471–499. <https://doi.org/10.1146/annurev.psych.52.1.471>
- Santos, F. M. (2012). A positive theory of social entrepreneurship. *Journal of Business Ethics*, 111(3), 335–351. <https://doi.org/10.1007/s10551-012-1413-4>
- Sheu, H. B., & Bordon, J. J. (2017). SCTT research in the international context: Empirical evidence, future directions, and practical implications. *Journal of Career Assessment*, 25(1), 58–74. <https://doi.org/10.1177/1069072716657826>
- Smith, I. H., & Woodworth, W. P. (2012). Developing social entrepreneurs and social innovators: A social identity and self-efficacy approach. *Academy of Management Learning & Education*, 11(3), 390–407. <https://doi.org/10.5465/amle.2011.0016>
- Soper, D. S. (2024). *A-priori sample size calculator for structural equation models* [Software]. <https://www.danielsoper.com/statcalc>
- Taherdoost, H. (2016). Validity and reliability of the research instrument; How to test the validation of a questionnaire /survey in a research. *International Journal of Academic Research in Management*, 5(3), 28–36. <https://doi.org/10.2139/ssrn.3205040>
- Tang, M., Pan, W., & Newmeyer, M. D. (2008). Factors influencing high school students' career aspirations. *Professional School Counseling*, 11(5), 285–295. <https://doi.org/10.1177/2156759X0801100502>
- Tchokoté, I. D., Bawack, R., & Nana, A. (2025). Attitude over norms: Reevaluating the dominance of attitude in shaping entrepreneurial intentions among higher education students in Global South countries. *The International Journal of Management Education*, article 101144. <https://doi.org/10.1016/j.ijme.2024.101144>
- Thomas, N. J., & Baral, R. (2023). Mechanism of gamification: Role of flow in the behavioral and emotional pathways of engagement in management education. *The International Journal of Management Education*, 21(1), 100718. <https://doi.org/10.1016/j.ijme.2022.100718>
- Tran, A. T. P., & Von Korflesch, H. (2016). A conceptual model of social entrepreneurial intention based on the social cognitive career theory. *Asia Pacific Journal of Innovation and Entrepreneurship*, 10(1), 17–38. <https://doi.org/10.1108/APJIE-12-2016-007>
- Tran, T. P. A. (2019). *Social entrepreneurial intention: An empirical study in Vietnam*. LAP LAMBERT Academic Publishing.
- Tu, B., Bhowmik, R., Hasan, M. K., Asheq, A. A., Rahaman, M. A., & Chen, X. (2021). Graduate students' behavioral intention towards social entrepreneurship: Role of social vision, innovativeness, social proactiveness, and risk taking. *Sustainability*, 13(11), 6386. <https://doi.org/10.3390/su13116386>
- Vázquez-Parra, J. C., Alonso-Galicia, P. E., Cruz-Sandoval, M., Suárez-Brito, P., & Carlos-Arroyo, M. (2023). Social entrepreneurship, complex thinking, and entrepreneurial self-efficacy: Correlational study in a sample of Mexican students. *Administrative Sciences*, 13(4), 104. <https://doi.org/10.3390/admsci13040104>

- Venkataraman, S. (1997). The distinctive domain of entrepreneurship research: An editor's perspective. In J. Katz & R. Brockhaus (Eds.), *Advances in entrepreneurship, firm emergence, and growth* (Vol. 3, pp. 119–138). JAI Press.
- Wiebe, E., Durepos, G., & Mills, A. J. (Eds.). (2018). *Encyclopedia of case study research*. SAGE Publications. <https://doi.org/10.4135/9781412957397>
- Willison, J. (2007). Vision & choice: Ethical characteristics of academic development programs. *Journal of University Teaching & Learning Practice*, 4(2), 14–30.
- Winful, E. C., Snowden, M., Halsall, J. P., Quaye, J. N. A., Hyams-Ssekasi, D., Opuni, F. F., Frimpong Opuni, F., & Opoku-Asante, K. (2022). Graduate employability in Ghana: Embedding social enterprise skills within the higher education framework. *Emerald Open Research*, 1(3). <https://doi.org/10.1108/EOR-03-2023-0018>
- Wiswall, M., & Zafar, B. (2015). Determinants of college major choice: Identification using an information experiment. *The Review of Economic Studies*, 82(2), 791–824. <https://doi.org/10.1093/restud/rdv044>
- Worthington, R. L., & Whittaker, T. A. (2006). Scale development research: A content analysis and recommendations for best practices. *The Counseling Psychologist*, 34(6), 806–838. <https://doi.org/10.1177/0011000006288127>
- Yamane, T. (1967). *Statistics: An introductory analysis* (2nd ed.). Harper and Row.