

The effects of entrepreneurial role model and effectuation on entrepreneurial intention

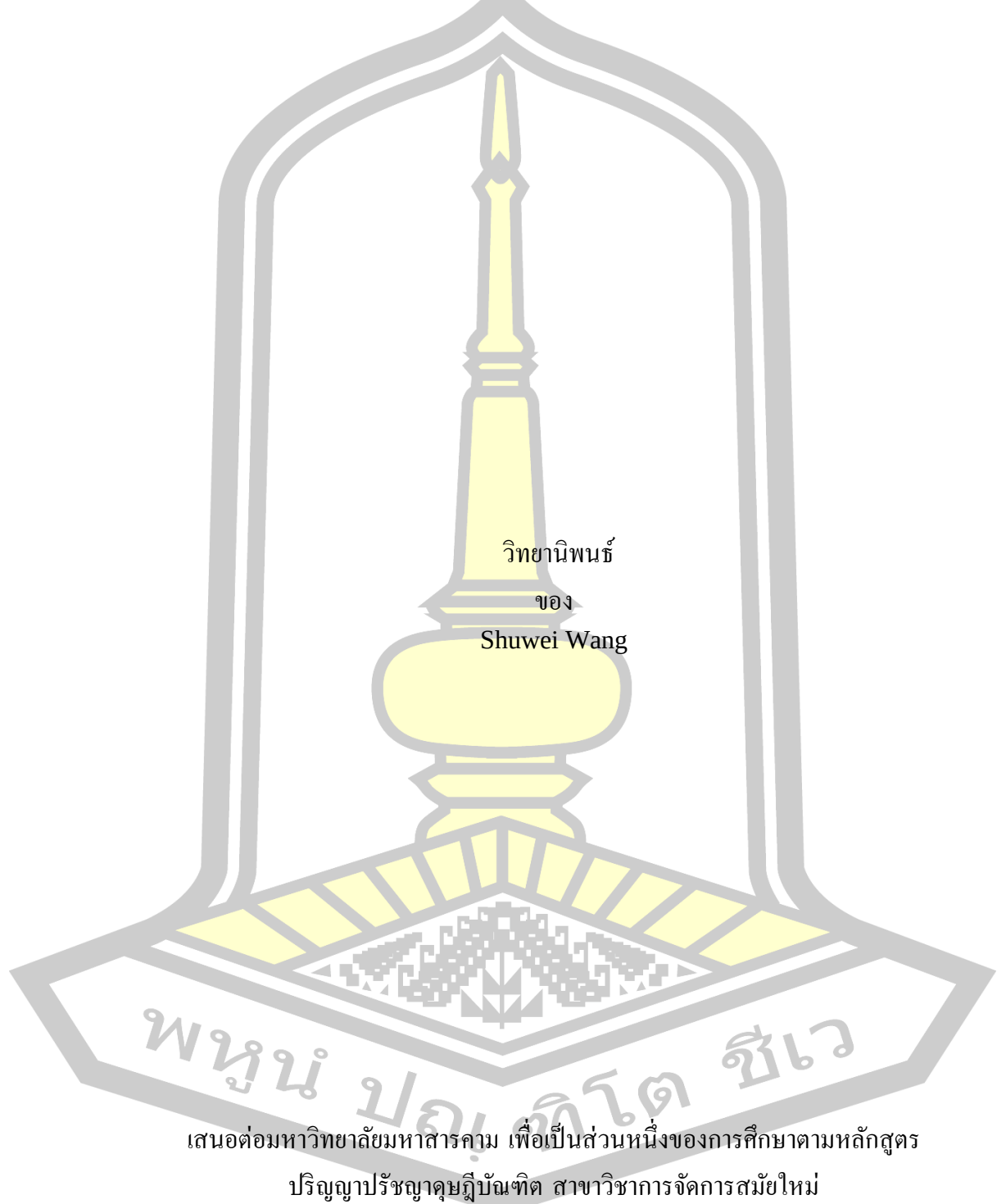
Shuwei Wang

A Thesis Submitted in Partial Fulfillment of Requirements for
degree of Doctor of Philosophy in Modern Management

October 2024

Copyright of Mahasarakham University

ผลกระทบของแบบอย่างของความเป็นผู้ประกอบการและการคำนึงถึงผลลัพธ์ต่อความตั้งใจในการ
เป็นผู้ประกอบการ



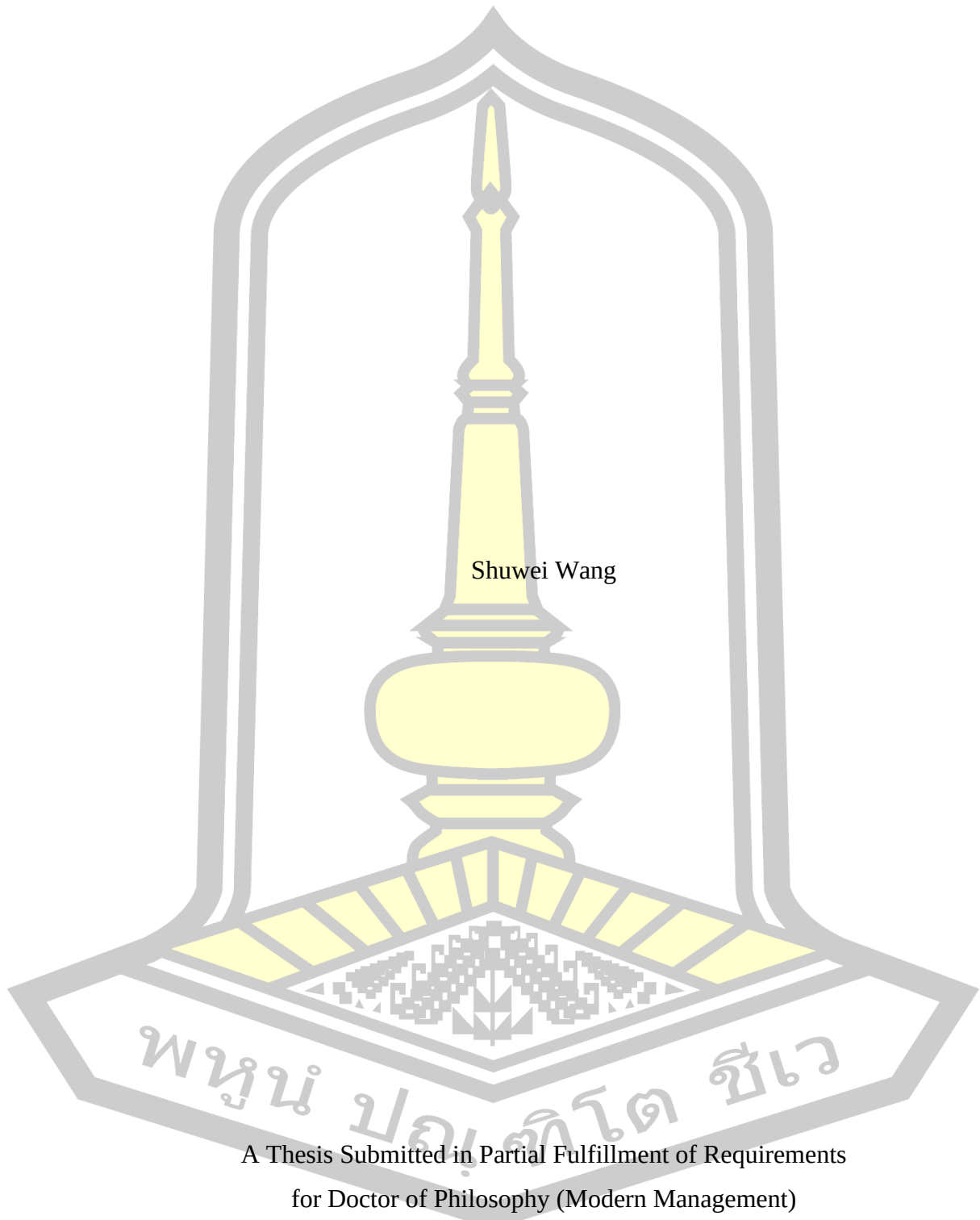
เสนอต่อมหาวิทยาลัยมหาสารคาม เพื่อเป็นส่วนหนึ่งของการศึกษาตามหลักสูตร
ปริญญาปรัชญาดุษฎีบัณฑิต สาขาวิชาการจัดการสมัยใหม่

ตุลาคม 2567

ลิขสิทธิ์เป็นของมหาวิทยาลัยมหาสารคาม

The effects of entrepreneurial role model and effectuation on entrepreneurial
intention

Shuwei Wang



A Thesis Submitted in Partial Fulfillment of Requirements
for Doctor of Philosophy (Modern Management)

October 2024

Copyright of Mahasarakham University



The examining committee has unanimously approved this Thesis, submitted by Ms. Shuwei Wang , as a partial fulfillment of the requirements for the Doctor of Philosophy Modern Management at Mahasarakham University

Examining Committee

Chairman

(Assoc. Prof. Vissanu Zumitzavan ,
Ph.D.)

Advisor

(Asst. Prof. Atthaphon Mumi ,
Ph.D.)

Co-advisor

(Asst. Prof. Achariya Issarapaibool ,
Ph.D.)

Committee

(Assoc. Prof. Sujinda Popaitoon ,
Ph.D.)

External Committee

(Assoc. Prof. Thanet Wattanakul ,
Ph.D.)

Mahasarakham University has granted approval to accept this Thesis as a partial fulfillment of the requirements for the Doctor of Philosophy Modern Management

(Asst. Prof. Charuay Savithi , Ph.D.)
Dean of Mahasarakham Business
School

(Assoc. Prof. Krit Chaimoon , Ph.D.)
Dean of Graduate School

TITLE	The effects of entrepreneurial role model and effectuation on entrepreneurial intention		
AUTHOR	Shuwei Wang		
ADVISORS	Assistant Professor Atthaphon Mumi , Ph.D. Assistant Professor Achariya Issarapaibool , Ph.D.		
DEGREE	Doctor of Philosophy	MAJOR	Modern Management
UNIVERSITY	Maharakham University	YEAR	2024

ABSTRACT

The influence of entrepreneurial role model on entrepreneurial intention has garnered increasing attention, yet the existing literature lacks comprehensive research on how role model enhances entrepreneurial intention through the shaping of individual effectual thinking. Drawing on effectuation theory, this study examines the impact of entrepreneurial role model on entrepreneurial intention using a sample of 582 college students in China. The results of PLS-SEM analyses reveal a positive effect of entrepreneurial role model on entrepreneurial intention. Specifically, effectuation, comprising four dimensions—flexibility, affordable loss, pre-commitments, and experimentation—mediates the direct relationship between entrepreneurial role model and entrepreneurial intention. Additionally, goal orientation is found to negatively moderate the relationship between entrepreneurial role model and effectuation, while entrepreneurial self-efficacy positively moderates this relationship. Entrepreneurial resilience positively moderates the relationship between effectuation and entrepreneurial intention, and personality traits such as openness and extraversion both positively moderate the relationship between effectuation and entrepreneurial intention. This study extends the literature on the impact of entrepreneurial role model by proposing that the model enhance individual entrepreneurial intention by shaping effectual thinking logic. It offers a theoretical explanation for the mechanisms and boundary conditions through which entrepreneurial role model influence entrepreneurial intention, providing valuable insights for educators and practitioners on how to cultivate effectual thinking in individuals and enhance their entrepreneurial intentions.

Keyword : Entrepreneurial role model, Effectuation, Entrepreneurial intention, Goal orientation, Entrepreneurial self-efficacy, Entrepreneurial resilience, Openness, Extraversion

ACKNOWLEDGEMENTS

The journey of pursuing a Ph.D. is undoubtedly filled with challenges, but for me, it has also been an incredibly meaningful life experience. From my home country to abroad, I have persistently studied amidst a busy work schedule, which has certainly been a significant challenge. Throughout nearly four years of academic pursuit, I have strived to balance my studies, work, and life. During the stages of conceptualizing and writing my dissertation, I often began my studies at five in the morning, dedicating an average of seven to eight hours a day to focused learning. I am especially grateful to my family for providing a peaceful study environment, allowing me to complete many crucial learning tasks.

I am deeply thankful to my mother for her strict guidance since my childhood. She has instilled in me a constant thirst for knowledge and a mindset of continuous improvement. I hope she can witness my efforts from heaven and feel proud of my achievements. I also want to thank my son, who initially had doubts about my studies but later quietly accepted my frequent absences due to academic commitments. I hope that one day he will understand that, as a mother who loves him deeply, I aspire to set an example through my actions and cultivate his lifelong passion for learning, which is a significant motivation for me to pursue a Ph.D. Additionally, I am grateful to my husband, who, despite wishing for an easier life for me, has supported me practically to complete my studies. I also extend my gratitude to my family and friends who have continuously cared for and supported me. Although I cannot name each of them here, their encouragement and recognition have been my driving force.

I am especially thankful to my advisor, professor Mumi. Throughout my Ph.D. journey, professor Mumi has undoubtedly been one of the most influential individuals. I feel immensely proud to have met such a knowledgeable, patient, and compassionate advisor. His professional expertise, selfless encouragement, and meticulous guidance have led me to where I am today. During the process of conceptualizing and writing my dissertation, professor Mumi patiently provided guidance; his professionalism and empathy are truly admirable. Even when I made mistakes, he always recognized my strengths and pointed out issues with the hope of bettering me. From him, I have seen the professional spirit and noble character of a teacher, and I have come to deeply understand

the importance of encouraging education. It is hard to imagine how I could have completed my studies without his encouragement and support. Here, I once again express my deepest gratitude to professor Mumi. I am also grateful to my co-advisor, professor Issarapaibool, whose optimistic and cheerful personality has inspired me to keep moving forward. Additionally, I would like to thank professor Sujinda, whose professionalism, rigor, and dedication to academic excellence have left a lasting impression on me.

Reflecting on over four years of study, I must also thank myself. During the pursuit of my Ph.D., I constantly challenged myself, courageously stepped out of my comfort zone, explored the breadth and depth of knowledge, and achieved personal growth and confidence rebuilding. I believe that one day in the future, when I look back on this time, I will be proud of my relentless efforts. I look forward to having the opportunity to return to the Maha campus someday, to stroll on its soft grass, and to warmly greet the little squirrels on the trees.

Shuwei Wang

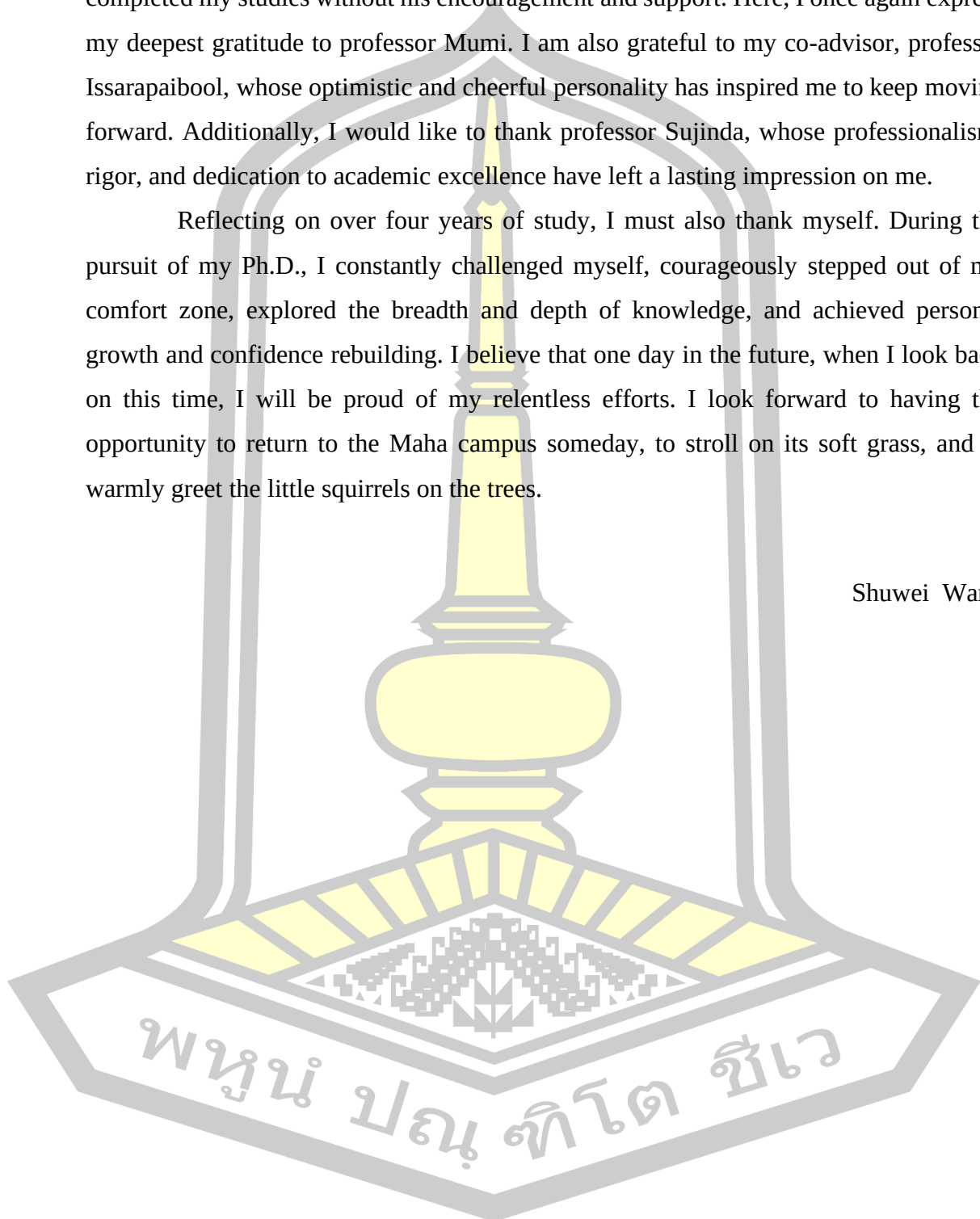


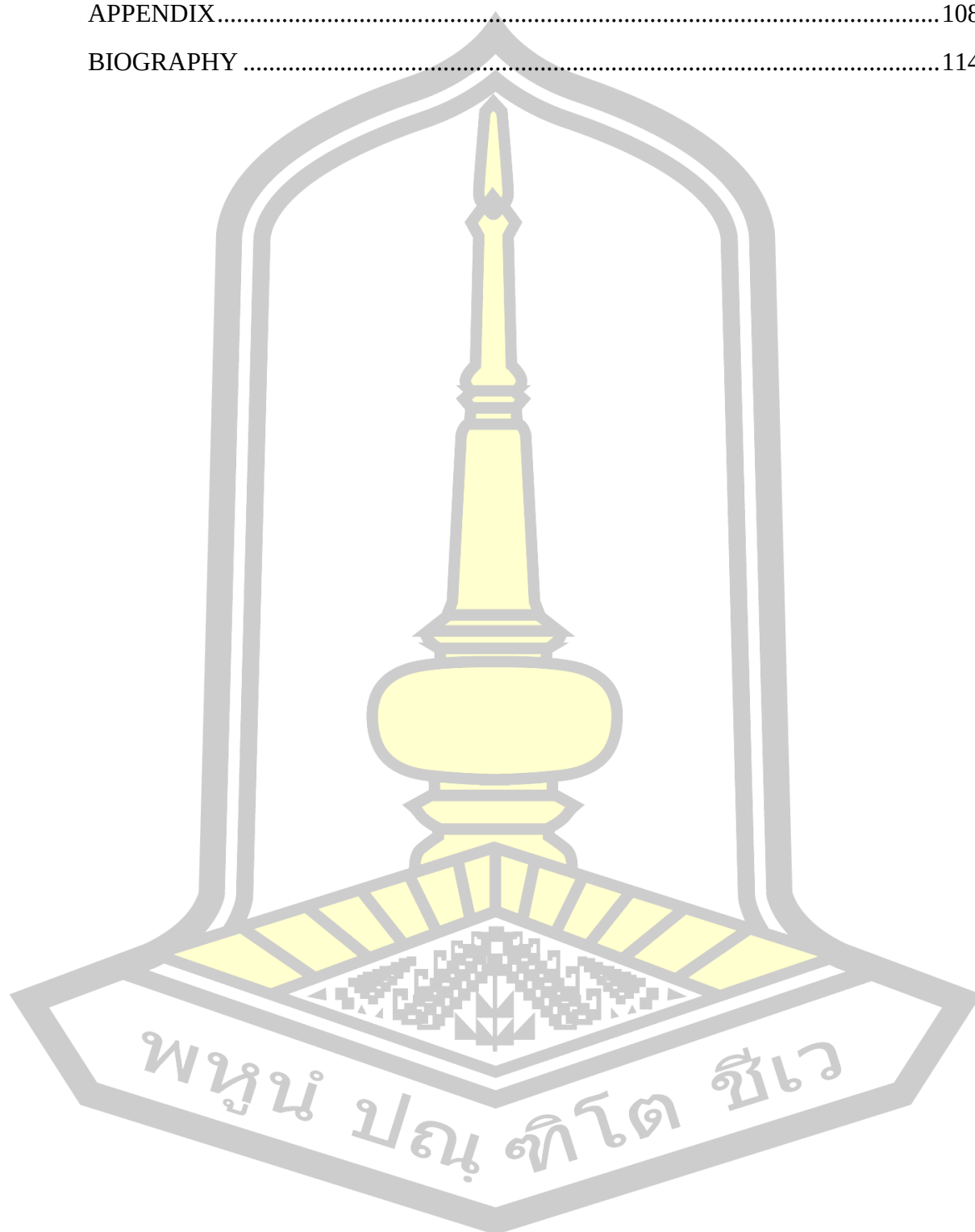
TABLE OF CONTENTS

	Page
ABSTRACT.....	D
ACKNOWLEDGEMENTS.....	E
TABLE OF CONTENTS.....	G
LIST OF TABLES.....	K
LIST OF FIGURES	M
Chapter 1 Introduction	1
1.1 Background.....	1
1.2 Problem Statement.....	2
1.3 Research Questions.....	4
1.4 Objectives of the Study.....	4
1.5 Significance of the Study.....	5
1.6 The Scope of the Study.....	5
1.7 Structure of the Study.....	6
Chapter 2 Literature Review and Hypothesis Development.....	7
2.1 Theoretical Foundation: Entrepreneurial Decision Logic Theory	7
2.2 Literature Review of Entrepreneurial Intention.....	12
2.2.1 Concept of Entrepreneurial Intention	12
2.2.2 Research Dimensions of Entrepreneurship Intention.....	13
2.2.3 Recent Studies and Trends of Entrepreneurship Intention	17
2.3 Literature Review of Entrepreneurial Role Model	18
2.3.1 Originality and Concept of Entrepreneurial Role Model	18
2.3.2 Research Dimensions of Entrepreneurial Role Model	19
2.3.3 Recent Studies and Trends of Entrepreneurial Role Model	25
2.3.4 Entrepreneurial Intention through Role Model	26
2.4 Literature Review of Effectuation	28

2.4.1 The Concept of Effectuation	28
2.4.2 Research Dimensions of Effectuation	29
2.4.3 Recent Studies and Trends of Effectuation	31
2.4.4 The Mediating Role of Effectuation.....	32
2.5 Literature Review of Goal Orientation	34
2.5.1 The Concept of Goal Orientation	34
2.5.2 Research Dimensions of Goal Orientation.....	36
2.5.3 Recent Studies and Trends of Goal Orientation	37
2.5.4 The Moderating Role of Goal Orientation	38
2.6 Literature Review of Entrepreneurial Self-efficacy.....	39
2.6.1 The Concept of Entrepreneurial Self-efficacy.....	39
2.6.2 Research Dimensions of Entrepreneurial Self-efficacy	39
2.6.3 Recent Studies and Trends of Entrepreneurial Self-efficacy.....	40
2.6.4 The Moderating Role of Entrepreneurial Self-efficacy.....	41
2.7 Literature Review of Entrepreneurial Resilience.....	42
2.7.1 The Concept of Entrepreneurial Resilience.....	42
2.7.2 Research Dimension of Entrepreneurial Resilience.....	43
2.7.3 Recent Studies and Trends of Entrepreneurial Resilience.....	45
2.7.4 The Moderating Role of Entrepreneurial Resilience.....	45
2.8 Literature Review of Personality	46
2.8.1 The Concept of Personality	46
2.8.2 Research Dimensions of Personality	47
2.8.3 Recent Studies and Trends of Personality	48
2.8.4 The Moderating Role of Personality	49
2.9 Conceptual Model and Hypotheses Summary.....	50
Chapter 3 Empirical Research Design and Data Analysis.....	52
3.1 Population and Sampling Method	52
3.1.1 Population.....	52
3.1.2 Sampling Method	52

3.2 Questionnaire Design and Measurement of Variables	53
3.2.1 Questionnaire Design	53
3.2.2 Measurement of Variables	53
3.3 Statistical Techniques	56
3.3.1 Data Collection	56
3.3.2 Statistical Techniques	58
Chapter 4 Results	61
4.1 External Model Setting	61
4.2 Descriptive Statistical Analysis	61
4.3 Measurement Model Analysis	63
4.3.1 Internal Consistency and Convergent Validity	63
4.3.2 Correlation Analysis and Discriminant Validity	66
4.3.3 Common Method Bias Test	68
4.4 Structural Model Analysis	70
4.4.1 Multicollinearity	70
4.4.2 Coefficient of Determination for Structural Equation Model	70
4.4.3 Predictive Validity of the Structural Equation Model	71
4.4.4 Research Hypothesis Test	72
Chapter 5 Discussion and Conclusions	78
5.1 Discussion	78
5.1.1 The Relationship Between Entrepreneurial Role Model and Entrepreneurial Intention	78
5.1.2 Mediating Mechanism of Entrepreneurial Role Model and Entrepreneurial Intention	79
5.1.3 Boundary Conditions for Entrepreneurial Role Model and Entrepreneurial Intention	80
5.2 Theoretical Contributions	82
5.3 Practical Implications	83
5.4 Research Limitations and Future Research Perspectives	85
5.5 Conclusions	86

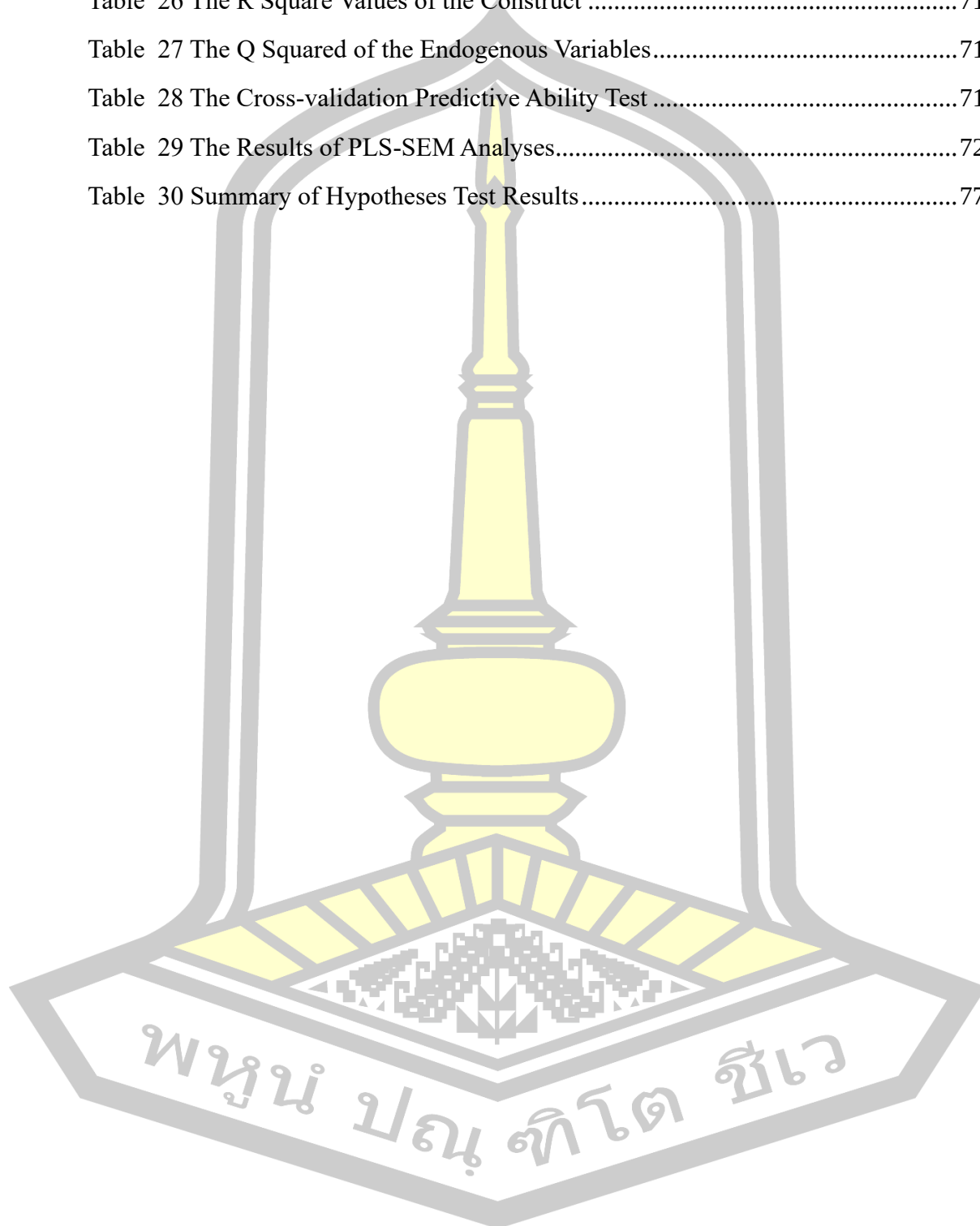
REFERENCES	87
APPENDIX.....	108
BIOGRAPHY	114



LIST OF TABLES

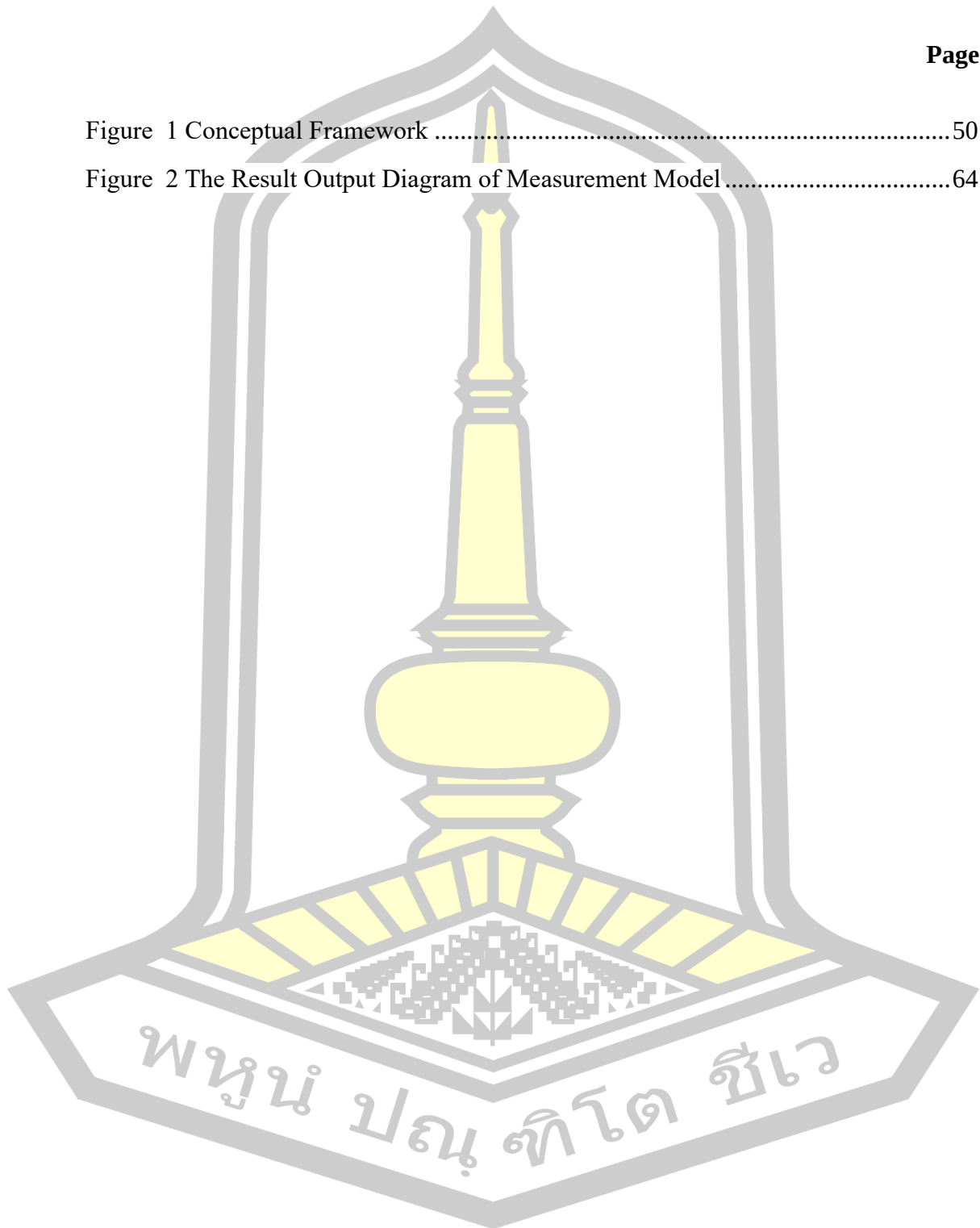
	Page
Table 1 Comparison of Effectuation & Causation	7
Table 2 The Definition of Entrepreneurial Intention	13
Table 3 The Impact of Entrepreneurial Role Model on Individuals' Career Preferences and Attitudes	20
Table 4 The Impact of Entrepreneurial Role Model on Entrepreneurial Behavior and Activities	22
Table 5 The Impact of Entrepreneurial Role Model on Entrepreneurial Intention	24
Table 6 Definition of Effectuation	29
Table 7 Comparison of Three Dimensions of Goal Orientation	35
Table 8 The Summary of Hypotheses	51
Table 9 Sample Size Calculation	53
Table 10 Entrepreneurial Role Model Items	53
Table 11 Entrepreneurial Intention Items	54
Table 12 Effectuation Items	54
Table 13 Entrepreneurial Self-efficacy Items	55
Table 14 Goal Orientation Items	55
Table 15 Entrepreneurial Resilience Items	55
Table 16 Openness Items	56
Table 17 Extraversion Items	56
Table 18 Test of Non-Response Bias between Early and Late Respondents	58
Table 19 Demographic Profile of Respondents	62
Table 20 Confirmatory Factor Analysis with Factor Loadings, Composite Reliability, and Average Variance Extracted	64
Table 21 Descriptive Statistics, Correlation Matrix	67
Table 22 Convergent and Discriminant Validity	67
Table 23 The Discriminant Validity of the Construct	68
Table 24 Test of Common Method Bias	68

Table 25 Variance Inflation Factor (VIF) and Tolerance Value	70
Table 26 The R Square Values of the Construct	71
Table 27 The Q Squared of the Endogenous Variables.....	71
Table 28 The Cross-validation Predictive Ability Test	71
Table 29 The Results of PLS-SEM Analyses.....	72
Table 30 Summary of Hypotheses Test Results.....	77



LIST OF FIGURES

	Page
Figure 1 Conceptual Framework	50
Figure 2 The Result Output Diagram of Measurement Model	64



Chapter 1 Introduction

1.1 Background

Throughout the world, entrepreneurship is an important aspect of the economic environment, creating employment opportunities, improving economic efficiency, and injecting innovative vigor into urban development (Shane & Venkataraman., 2000; Esfandiar et al., 2019). As a result, entrepreneurship research has become a popular topic in academia. From the perspective of the entrepreneurial process, the formation of entrepreneurial intention represents the initial step in the occurrence of entrepreneurial behavior. Encouraging individual entrepreneurship relies on effectively stimulating entrepreneurial intentions. Entrepreneurial intention has been recognized as a strong predictor of entrepreneurial behavior (Ajzen, 1991; Krueger et al., 2000). Scholars generally agree that the stronger an individual's entrepreneurial intention, the greater the likelihood that he or she will engage in entrepreneurial actions (Winkler et al., 2014; Gutiérrez & Tomás et al., 2019; Vega-Gómez et al., 2020). The theoretical issue of how entrepreneurial intentions are formed is a significant area of study.

The formation of entrepreneurial intention is closely related to external environmental factors (Low & MacMillan, 1988; Liñán & Chen, 2009; Mueller et al., 2014) and intra-individual cognitive factors (Ajzen, 1991; Butz, et al., 2018; Mungai & Velamuri, 2011; Tarapuez et al., 2018; Asma, et al., 2019). Entrepreneurship itself is a social activity deeply embedded in an individual's social environment. It is through interaction with the environment that individuals develop perceptions of entrepreneurial behaviors and engage in subsequent practical activities (Bird, 1988). Successful entrepreneurial role model plays a significant role within an individual's social network and social environment. Some studies have shown that 35% to 70% of entrepreneurs have entrepreneurial role models (Scherer et al., 1989). These role models are typically entrepreneurs, including family members, friends, or celebrities (Bosma et al., 2012) such as Steve Jobs and Jack Ma. Individuals with role models use them as a reference for their behavior and, through observation and imitation, form different perceptions of entrepreneurship compared to their peers without entrepreneurial role models. This, in turn, leads to different entrepreneurial intentions and behaviors (Van Auken et al., 2006; Bosma et al., 2012). Therefore, studying the relationship between the influence of entrepreneurial role model on entrepreneurial intention is of great practical significance for enhancing individuals' entrepreneurial intention and participation, and for promoting entrepreneurship development.

Intentionality is recognized as a psychological state that guides individuals' focus and actions toward specific objectives or pathways to achieve goals (Bird, 1988; Fellnhofer & Mueller 2018). Research has shown that an individual's perception of risk can significantly influence their entrepreneurial intention (Zhao et al., 2005). Therefore, it is important to explore how entrepreneurial role model may influence an individual's perception of risk, particularly in relation to affordable loss. Moreover, studies have indicated that role model plays a role in fostering entrepreneurial behavior (BarNir et

al., 2011; Block et al., 2013; Zapkau et al., 2017), prompting the question of whether and how this fosters entrepreneurial thinking and behavior, such as the recognition of opportunities, adoption of flexible strategies, and promotion of pre-commitment seeking orientation, ultimately enhancing entrepreneurial intention.

Successful entrepreneurial role model plays a crucial role in shaping individual's sense of self, evoking favorable emotions, and fostering entrepreneurial aspirations (Laviolette et al., 2011). Entrepreneurial role model could boost individuals' entrepreneurial intention by facilitating the transfer of explicit knowledge (Dohse & Walter 2012), attitudes, subjective norms, and perceived behavioral control (Mueller et al. 2014; Fellnhofer & Mueller 2018; Moreno-Gómez et al. 2020). These studies offer valuable insights into the mechanisms of role model, drawing from areas such as social cognition, social learning, and the theory of planned behavior (TPB), but do not provide insight into how entrepreneurial role model influences people to identify opportunities, perceive risks, and develop effective entrepreneurial mindsets that promote their entrepreneurial intention.

In addition to these perspectives, are there any other theoretical viewpoints that could effectively explain the development of entrepreneurial role model and the impact on entrepreneurial intention? Effectuation is a logic of decision-making and a mode of behavior by entrepreneurs in uncertain environment (Sarasvathy, 2001) that enhances individuals' entrepreneurial intentions by empowering them to take actions, reducing perceived risk, promoting creativity and resourcefulness, and providing a supportive social network. It provides a favorable theoretical basis for explaining people's entrepreneurial opportunity identification, risk perception and the formation of effective entrepreneurial thinking. Therefore, to answer the above questions, this study aims to investigate the pathway and mechanisms through which entrepreneurial role model influence entrepreneurial intention based on effectuation theory.

1.2 Problem Statement

Entrepreneurship is a multifaceted and intricate process. When individuals embark on entrepreneurial ventures, they must carefully weigh their aspirations for business ownership against the potential risks involved in establishing and managing the enterprise. They must also effectively leverage available resources and identify opportunities within uncertain and challenging business environments to make informed and strategic career choices. This research suggests that the concept of effectuation offers a valuable theoretical framework for comprehending the cognitive processes, behaviors, and decision-making principles of entrepreneurs during the entrepreneurial decision-making process. Furthermore, it is also pertinent for elucidating how an individual develops his / her own cognitive framework and decision-making pattern through exposure to entrepreneurial role model, thereby fostering the cultivation of entrepreneurial intention. Consequently, the study endeavors to explore the influence of entrepreneurial role model on entrepreneurial intentions from the vantage point of effectuation.

First, exploring the impact of entrepreneurial role model on entrepreneurial intention within the framework of effectuation theory. Prior research has primarily focused on

investigating the impact of entrepreneurial role model on entrepreneurial intention through the frameworks of social learning theory (Scherer et al., 1989; Boyd & Bozikis, 1994), social cognition theory (Entrialgo & Iglesias, 2017; Brunel et al., 2017), and planned behavior theory (Entrialgo & Iglesias, 2017; Fellnhofner & Mueller, 2018).

Effectuation, as an emerging theory of entrepreneurship, offers a new perspective on understanding the process of opportunity identification and exploitation in new ventures (Guo, 2019). It emphasizes the use of affordable loss, leveraging contingencies, and forming partnerships, which are essential elements in the decision-making process of entrepreneurs (Sarasvathy, 2008). This theory is particularly relevant in the context of understanding how an individual is influenced by entrepreneurial role model and how this influence shapes his / her entrepreneurial intention. Therefore, this study considers the theory of effectuation as a valuable perspective for examining the influence of role model on entrepreneurial intention. However, there is a lack of research on the relationship between entrepreneurial role model and entrepreneurial intention using effectuation theory. Therefore, we aim to explore the impact mechanism of entrepreneurial role model on entrepreneurial intention from the perspective of effectuation theory to fill this gap.

Second, exploring the role of effectuation in the formation mechanism of the impact of entrepreneurial role model on entrepreneurial intention. The effectuation theory pertains to entrepreneurial behavior and is particularly relevant to product innovation in small businesses, which is a specific form of entrepreneurial behavior (Berends et al., 2013). It stimulates non-predictive and effective decision-making processes, similar to the mechanism triggered by entrepreneurial self-efficacy (Stroe et al., 2018). Moreover, effectuation has been widely applied in the entrepreneurial process and provides insight into how entrepreneurs take actions on process events (Haneberg, 2019). It mediates the relationship between entrepreneurial skills and abilities and entrepreneurial career choices (Qureshi et al., 2020). These findings indicate that effectuation may be a key variable in the formation mechanism of the impact of entrepreneurial role model on entrepreneurial intention. Furthermore, the influence of role model on entrepreneurial intention is affected by various factors, such as entrepreneurial self-efficacy, passion, and planned behavior theory (Laviolette et al., 2011; Hou et al., 2019), as well as the social environment (Zhang & Huang, 2021), which are closely linked to effect inference.

Hence, we posit that the utilization of effectuation as a decision-making approach in the context of entrepreneurship plays a pivotal role in shaping the impact of entrepreneurial role model on entrepreneurial intention. Nevertheless, there has been a lack of comprehensive investigation into the mediating role of effectuation between entrepreneurial role model and entrepreneurial intention. As such, this study aims to address this gap by examining the mediating effect of effectuation in the relationship between entrepreneurial role model and entrepreneurial intention, thereby contributing to the advancement of pertinent theories.

Third, exploring the boundary conditions of the mechanism of entrepreneurial role model on entrepreneurial intention under the framework of effectuation theory. We will explore these boundary conditions based on the dimension of individual psychological

and personality levels. Previous literature widely confirms the psychological influences of role modeling on entrepreneurial intention, including factors such as self-efficacy (Scherer et al., 1989; Scherer et al., 1991; Boyd & Vozikis, 1994; Minniti, 2005; Laviolette et al., 2011; Nowiński & Haddoud, 2019), entrepreneurial passion (Türk et al., 2020; Soleimanof et al., 2021), entrepreneurial resilience (Bullough & Renko, 2013; Ayala & Manzano, 2014; Monllor & Murphy, 2017) and self-esteem (Chen et al., 2016; Brunel et al., 2017). Additionally, goal-orientation influences predicted entrepreneurial career anchors (Culbertson et al., 2010). From this pool of factors, we chose to focus on entrepreneurial self-efficacy and goal orientation to further investigate the impact on entrepreneurial role model and effectuation, as suggested by effectuation theory. Moreover, The Big Five personality model, which represents typical personality traits, has been extensively studied and validated in the field of entrepreneurship (Boyd, & Vozikis, 1994; Chlosta et al. 2012; Postigo et al., 2021). In this study, we chose two traits, openness and extraversion, and entrepreneurial resilience, which influences an individual's decision logic in uncertain environments (D'andria et al., 2018), to explore their respective effects on the relation between effectuation and entrepreneurial intention.

1.3 Research Questions

As addressed in the above statement, this research attempts to answer four specific questions:

- a) Is effectuation a reasonable theoretical perspective to explain the formation of entrepreneurial intention, and how do entrepreneurial role models influence an individual's intention to start businesses by shaping effectual thinking and behavior?
- b) Does effectuation play an intermediary role in the relationship between entrepreneurial role model and entrepreneurial intention?
- c) What are the boundary conditions that affect the relationship between entrepreneurial role model and entrepreneurial intention through effectuation, and do factors such as entrepreneurial self-efficacy, goal orientation, resilience, and personality traits moderate these relationships?

1.4 Objectives of the Study

To examine how entrepreneurial role model influence individual entrepreneurial intention through effectuation. We believe that entrepreneurial role model can further enhance individuals' entrepreneurial intention through effectuation. That is, entrepreneurial role model can promote individual to form effective effectual decision logic including experimentation, affordable loss, flexibility, and pre-commitments, thereby enhancing entrepreneurial intention.

To examine the moderating effects of entrepreneurial self-efficacy and goal orientation on entrepreneurial role model and effectuation. When facing challenges, individual with strong entrepreneurial self-efficacy would be inclined to view uncertain or setbacks as opportunities rather than threats (Engel et al. 2014), form more effective entrepreneurial decision-making logic through the demonstration of entrepreneurial role model. If individuals have a strong learning orientation, they are more likely to actively seek and

internalize the knowledge shared by successful entrepreneurs (Bosma et al., 2012), leading to more pronounced effectual decision-making. On the other hand, individual with a strong performance orientation might primarily focus on specific outcomes achieved by role model and adopt effectuation in pursuit of those specific goals.

To examine the moderating effects of entrepreneurial resilience and personality (openness and extraversion) on effectuation and entrepreneurial intention. When individual possess high entrepreneurial resilience, they are better equipped to handle failures (Bullough & Renko. 2013) and learn from role model to adopt flexible strategies to cope with the problems and more likely to maintain their entrepreneurial intention. Openness and extraversion as being significantly positively related to entrepreneurial intention (Ismail et al., 2009). Effectuation encourages entrepreneurs to use their existing knowledge, networks, and resources to create innovative solutions (Sarasvathy, 2001). Individuals with high openness tend to be more creative and imaginative, which can complement the effectual approach. Extraverted individuals are generally more outgoing and socially perceptive (Zhang et al., 2009), which can enhance their ability to recognize and identify entrepreneurial opportunities in their environments, thus to show stronger entrepreneurial intention.

1.5 Significance of the Study

First, this research could lead to a better understanding of how entrepreneurial role model and effectual thinking influence individuals' intention to start businesses. This knowledge could be used to develop more effective programs and interventions to promote entrepreneurship.

Second, by understanding the boundary conditions that affect the relationship between entrepreneurial role model, effectuation, and entrepreneurial intention, this research could help to identify and reduce barriers to entrepreneurship.

Third, this research could be used to improve the design and delivery of entrepreneurial education and training programs, by ensuring that they focus on the development of effectual thinking and other important entrepreneurial skills.

1.6 The Scope of the Study

The scope of this study is at the individual level of students in Chinese universities who have participated in school entrepreneurship programs. Since the Chinese government proposed the "mass entrepreneurship and innovation" initiative in 2014, universities across the country have been actively engaged in innovation and entrepreneurship education. Faced with imminent career choices, these tertiary students are highly interested in entrepreneurship and career planning. Moreover, they generally possess a high level of academic achievement, critical thinking skills, and a strong drive for entrepreneurial endeavors. This has resulted in extensive research attention towards their entrepreneurial aspirations (Laviolette et al., 2011; Entrialgo & Iglesias, 2017; Fellnhöfer & Mueller, 2018; Nowiński & Haddoud, 2019). Furthermore, these students typically demonstrate a heightened ability to learn and embrace new concepts, and are more open (Wahyudi & Sanyata., 2020) and responsive to emerging entrepreneurial models and intentions. As a result, focusing on university students as the subject of research can lead to a more comprehensive understanding of their perspectives and

attitudes towards entrepreneurial role model and intention, ultimately providing more thorough and in-depth data to support the study. This study aims to examine the impact of exposure to entrepreneurial role model on the entrepreneurial intention of university students, and to explore the role of effectuation in this influence. Also, it seeks to investigate how individual psychological and personality dimensions may act as boundary conditions in influencing this relationship.

1.7 Structure of the Study

This dissertation is divided into four chapters as follows:

Chapter 1 serves as an introduction to the research, offering a comprehensive overview of the background, problem statement, objectives, significance, scope, limitations, and structure of the study.

In Chapter 2, the literature review is presented in eight distinct sections. It encompasses the development of the conceptual framework, which is derived from an extensive review of relevant literature on the seven main constructs, the relationships among these key constructs, and the formulation of hypotheses. The review delves deeply into the theoretical foundations of entrepreneurial decision logic theory, entrepreneurial intention, entrepreneurial role model, effectuation, entrepreneurial self-efficacy, goal-orientation, entrepreneurial resilience, and big-five personality traits. The chapter is capped off with the proposed conceptual model.

Chapter 3 describes the empirical analysis of the impact of entrepreneurial role model and effectuation on entrepreneurial intention. This chapter is structured into three primary sections: research methodology, data analysis, and discussion of research findings. The research methodology section details the population and sample selection, research tools employed, and the data collection procedures.

Chapter 4 presents the results of the data analysis. Within the data analysis section, there is an exploration of reliability and validity, descriptive statistical analysis, testing for mediating effects, and testing for moderating effects. The results of the analysis are utilized to assess the research hypothesis and model.

Finally, Chapter 5 concludes the expected findings of this study. The discussion of research findings entails the presentation and evaluation of the results derived from hypothesis testing. It also addresses the implications of the findings for managerial practices, and explains contributions to the theory and the future research agenda. The expected limitation of the study is also addressed in this section.

Summary

This chapter outlines the background of the study and presents its research questions, objectives, and significance. It also defines the scope of the study and provides an overview of its structure.

Chapter 2 Literature Review and Hypothesis Development

2.1 Theoretical Foundation: Entrepreneurial Decision Logic Theory

Entrepreneurship stands as a pivotal catalyst for societal advancement and global economic expansion. Entrepreneurs epitomize the essence of entrepreneurship, making impactful decisions and undertaking activities that shape the landscape of innovation. Their decision-making process plays a pivotal role in crafting strategies and actions. Conventional management theory outlines a sequential series of processes encompassing goal setting, planning, organization, implementation, and control, wherein managers set explicit strategic objectives before initiating actions. This traditional approach, often termed 'causation,' hinges on the presumption that managers can forecast the future and base decisions on these predictions. However, this overlooks the inherent challenges of entrepreneurial decision-making within volatile and uncertain environments.

Real-world enterprises frequently encounter substantial uncertainty, marked by unpredictable market responses, absence of evidence-backed organizational practices, and resource limitations during the initiation and execution of entrepreneurial ventures. Consequently, entrepreneurial decision-making thrives on evaluating, assessing, and selecting emerging opportunities within an ever-evolving and uncertain entrepreneurial landscape. Addressing this challenge, Sarasvathy has amalgamated theories such as organizational learning (March, 1991) and strategic management (Mintzberg, 1994) to introduce a novel logic for entrepreneurial decision-making termed 'effectuation.' This framework elucidates the decision-making processes of entrepreneurs navigating highly uncertain and resource-constrained entrepreneurial realms.

Sarasvathy (2001) delineates two cognitive styles of individual decision-making: causation and effectuation. These styles serve as guiding frameworks for decision-makers operating in traditional rational decision-making versus bounded rational decision-making contexts, respectively (McKelvie et al., 2020). Causation centers on goal-driven approaches, prediction, and meticulous planning to achieve objectives. In contrast, effectuation prioritizes adaptive means-oriented strategies, recognizing and leveraging uncertainty while integrating and deploying resources. Research findings have highlighted that effectuation can significantly enhance company performance (Sarasvathy, 2001; Wiltbank et al., 2006; Dew et al., 2009; Wei & Zhang, 2020). Nonetheless, the significance of causation in entrepreneurial contexts continues to be important (Ranabahu & Barrett, 2020). Table 1 reveals the comparison of effectuation and causation based on the study of Sarasvathy (2001).

Table 1 Comparison of Effectuation & Causation

	Perspective of Effectuation	Perspective of Causation
Context	Dynamic, non-linear situations	Static, linear situations

Worldview to future	Believing that the future is neither found nor predicted, but rather made; focus on activities within their control.	Believing the future is predicted. Focus on the foreseeable elements of an unpredictable future.
Means	Starting from the established resources and means, gradually achieve and adjust the goal	Starting with a set goal and take action to achieve it
Affordable loss	Selecting the project that the loss within a tolerable range	Selecting the project with highest expected return
Leverage Contingencies	Embracing the unexpected events and actively create new opportunities from it	Avoiding unexpected events and focus on completing the original plan
Partnership	Building network with stakeholders with pre-commitments. Expand resource and co-create new venture with these participants.	Conducting thorough competitive analysis to strengthen their positions in the market

Causation

Causation, a widely employed decision-making method in traditional management studies, was initially proposed by Burks (1977), advocating intentional actions to predict the future and achieve predetermined goals. In the field of entrepreneurship, Sarasvathy (2001) first outlined the intertwined yet distinct decision-making paradigms of causation and effectuation. Causation necessitates decision-makers to possess comprehensive information and alternative solutions, implying a high degree of transparency and the ability to forecast future outcomes. This method entails a predictable approach to entrepreneurial decision-making, involving comprehensive market analysis, long-term opportunity identification, meticulous business planning, product development, and resource integration to drive business operations. Continuous adaptation of strategies is pivotal to sustain competitiveness amid dynamic entrepreneurial landscapes. This decision-making approach embodies several core attributes: 1) Goal orientation: entrepreneurs set and achieve clear objectives through calculated efforts, presuming a predictable future. 2) Return maximization: decisions are aimed at maximizing expected benefits. 3) Emphasis on partnerships: competitive analysis prioritizes risk identification via market and competitor analyses to mitigate uncertainties. 4) Contingency leverage: proactive measures aim to avert unexpected occurrences, ensuring the attainment of envisioned goals while minimizing disruptions.

Effectuation

The theoretical foundation of effectuation theory can be traced back to decision theory proposed by Herbert Simon, a distinguished economist who was awarded the Nobel Prize in 1978. Sarasvathy further expanded upon this foundation by integrating decision theory into the realm of entrepreneurial management research, specifically addressing uncertainties inherent in entrepreneurial decision-making. This evolution led to the conceptualization of effectuation theory. Sarasvathy posits that amidst business uncertainty, companies should engage in small-scale experiments to gather market feedback, thereby speculating on potential future outcomes (Sarasvathy, 2001). Through continuous experimentation and feedback collection, entrepreneurs can adapt

their strategies, explore viable pathways, and ultimately achieve entrepreneurial success. In contrast to causation, effectual decision-making adheres to the following principles: 1) Means-oriented: emphasizing the creation of the future rather than prediction, leveraging available resources like 'who they are, what they know, and who they know' to attain their objectives; 2) Affordable risk: focusing on manageable losses and risks, with decision criteria aimed at controlling losses within acceptable limits; 3) Emphasis on partnership: highlighting collaboration with stakeholders to mitigate uncertainty and erect barriers to entry; 4) Leveraging contingencies: embracing uncertainty, perceiving accidents as opportunities, and creatively addressing challenges.

Building on prior research, Sarasvathy delineates three distinct decision-making paradigms: conventional causation representing management thinking, creative causation embodying strategic thinking, and effectuation characterizing entrepreneurial thinking. Acknowledging the inherent uncertainty in entrepreneurial decision-making, three primary entrepreneurial decision-making approaches are outlined: the application of causation in low-uncertainty scenarios, the utilization of the Bayesian estimation method in moderately uncertain circumstances, and the adoption of effectuation in situations marked by Knightian uncertainty (Sarasvathy & Kotha, 2001).

Research on antecedent variables

Research on antecedent variables encompasses factors influencing the rationale behind entrepreneurial decision-making at both individual and organizational levels. On an individual level, research focuses on the impact of entrepreneurial experience, work history, and cognitive factors on entrepreneurial decision-making. Sarasvathy (2001) conducted a comparative analysis of decision-making patterns displayed by successful entrepreneurs and MBA students lacking entrepreneurial experience. The study revealed that successful entrepreneurs primarily use effectuation and non-predictive methods, while MBA students tend to lean towards predictive approaches, such as questionnaire surveys and market testing. Expert entrepreneurs favor effectuation, whereas inexperienced entrepreneurs are inclined to embrace causation. Disparities in knowledge structure and entrepreneurial experience result in divergences in decision-making logic (Read & Sarasvathy, 2005).

Research indicates that individuals with prior entrepreneurship and small business experience tend to favor effectuation in their entrepreneurial decision-making, while those with backgrounds in large corporations lean towards causation (Gabrielsson & Politis, 2011). Variances in risk perception and attitudes toward uncertainty significantly influence entrepreneurs' preference for effectuation in decision-making processes (Dew et al., 2009). Moreover, the interplay between passion, entrepreneurial self-efficacy, and perception of risk results yields diverse impacts on entrepreneurs' decision-making approaches (Stroe et al., 2018). Psychological elements like self-efficacy and optimism also contribute to an individual's inclination towards a specific entrepreneurial decision-making logic, displaying variations based on the operational country (Zhang et al., 2019). At an organizational level, both startups and established companies employ effectuation in decision-making processes and entrepreneurial endeavors (Dew et al., 2008; Henninger, 2020).

In summary, current research suggests that causation is prevalent among novice entrepreneurs and venture capitalists, and suits established companies, industries, or markets better. Conversely, effectuation finds favor among seasoned entrepreneurs driven by a passion for entrepreneurship or possessing strong self-efficacy, and is more suitable for organizations fostering an entrepreneurial culture or operating within emerging or rapidly evolving industries.

Research on dependent variables

Studies investigating the dependent variables of entrepreneurial decision-making logic primarily concentrate on aspects related to the entrepreneurial context, innovation, and the decision-making context of internationalization.

In the context of examining the influence on decision-making at different stages of entrepreneurship, it is essential to consider the entrepreneurial process, which generally comprises three critical phases: entrepreneurial entry, new venture growth, and entrepreneurial exit. Causation and effectuation play distinct roles at each of these stages. In the entry phase, effectuation logic plays a significant role, as research among novice entrepreneurs and startups has demonstrated its promotion of enterprise creation (Garonne et al., 2010). Moving to the growth and performance phase of new startups, entrepreneurs who employ causation typically pursue opportunities in expansive markets with the goal of capturing significant market shares in a predictable product or service market. Conversely, those employing effectuation strategies aim for a substantial share of smaller markets or seek to consolidate multiple smaller markets into a larger one. As a result, enterprise performance shows an inverse relationship with the predictability of the product or service market when effectuation strategies are utilized (Dew & Sarasvathy, 2006).

A comprehensive meta-analysis of 24 studies on new startups has demonstrated a significant positive correlation between means existing, alliance relationships, and leveraging accidental events with new startup performance within the framework of effectuation. Nevertheless, according to Read et al. (2009), the aspect of manageable losses was not observed to have a substantial effect on the initial performance of new startups. Similarly, Detienne et al. (2012) investigated the impact of entrepreneurial decision-making rationale on entrepreneurial exits, discovering that causation frequently guides entrepreneurs toward exit plans such as initial public offerings (IPOs). Additionally, Detienne et al., (2012) revealed that various dimensions of effectuation have differing impacts on exit strategies. Specifically, the dimension of affordable loss enables acceptance of liquidation exit strategies, the experimental dimension guides entrepreneurs towards choosing exit strategies through IPOs, and the flexible dimension allows entrepreneurs to capitalize on market turning points, potentially preventing the choice of a liquidation exit strategy.

Exploring the influence on corporate innovation reveals noteworthy insights. Research indicates that in highly innovative project development, effectuation assumes a more prominent role (Brettel et al., 2012). In situations of sluggish industry growth, both decision-making logics contribute to promoting business model innovation. However, within high-growth (low-growth) industry environments, effectuation (causation) proves to be more effective (Futterer et al., 2018). Studies focused on the service-

oriented innovation process within manufacturing enterprises suggest a transition from dominance by causation to predominance by effectuation as the service-oriented process attains a relatively complex stage, effectively managing escalating risks (Cui et al., 2019).

The impact of internationalization on entrepreneurial decision-making has garnered significant scholarly attention. Venturing into international markets introduces heightened uncertainty for enterprises. Thus, researchers have concentrated on assessing the influence of causation and effectuation on international entrepreneurship, particularly concerning market entry and other international decisions. An examination of five international entrepreneurship cases revealed that a shift from causation to effectuation allows companies to overcome outsider disadvantages and swiftly elevate their commitment levels in foreign markets (Kalinic et al., 2014). Experienced entrepreneurs tend to adopt effectuation, opting out of predetermined entry modes, while those employing causation lean toward export modes for international market entry (Harms & Schiele, 2012).

In summary, both entrepreneurial decision-making logics distinctly influence various stages of entrepreneurship, with effectuation holding greater sway during the entry stage. Furthermore, concerning innovation and internationalization decision-making, the dominant influence of these two entrepreneurial decision-making logics may shift across different phases of product and business model innovation. Effectuation notably impacts innovation, whereas in internationalization decision-making, experienced entrepreneurs, resource-constrained enterprises, and proactive market-oriented enterprises often lean towards adopting effectuation. This research serves as a reference and inspiration for ongoing investigation into entrepreneurial cognition and optimization of entrepreneurial decision-making, contributing to the advancement of entrepreneurial practice.

Embarking on a business venture mirrors a birth process, commencing from ground zero. Entrepreneurs navigate the need to leverage available resources, discern opportunities within a volatile competitive landscape, assess risks logically, and adapt strategies flexibly. The theoretical framework of effectuation, notably advocated by Professor Sarasvathy, delves into decision-making and action orientation amid uncertain conditions, juxtaposing effectuation and causation. These two paradigms inherently depict substantial theoretical tension when jointly explicating new startups. However, current research primarily concentrates on entrepreneurs' application in the strategic decision-making realm of established enterprises, overlooking the investigation into the formation of entrepreneurial intention, which serves as the genesis of the entrepreneurial journey.

This study proposes that entrepreneurial decision-making logic serves as a theoretical framework for comprehending the cognitive patterns, behaviors, and decision-making principles inherent in the entrepreneurial process. This logical framework also elucidates how an individual shapes his / her mental processes and decision-making tendencies through exposure to entrepreneurial role model, thereby fostering the development of entrepreneurial intention. Entrepreneurship encompasses a

multifaceted journey, where individuals, while contemplating entrepreneurial decisions, evaluate not only their aspiration for business ownership but also the associated risks involved in establishing a venture. They integrate resources and navigate uncertain environments to make informed career choices. Effectuation underscores the consideration of potential effects stemming from diverse choices when making decisions, thereby guiding decision-making based on these implications. Hence, this study adopts effectuation as the theoretical foundation to investigate the mechanisms and pathways through which entrepreneurial role model influences individual entrepreneurial intention. We posit that individuals formulate decisions regarding business initiation based on their perceptions of entrepreneurial efficacy. Entrepreneurial role model can significantly impact individual's perception of entrepreneurial outcome, subsequently shaping their intention towards entrepreneurship.

2.2 Literature Review of Entrepreneurial Intention

Entrepreneurial intentions hold a pivotal position within the theoretical framework of entrepreneurship, serving as a key predictor of entrepreneurial behavior (Ajzen, 1980; Krueger, 2000) and a crucial precursor to the actual implementation of entrepreneurial activities (Kolvereid, 1996). In the context of the entrepreneurial process, the rise of entrepreneurial intentions represents the beginning of entrepreneurship, thus highlighting the significance of studying entrepreneurial intentions as a valuable investigation into the early phases of the entrepreneurial voyage. Research on entrepreneurial intentions has witnessed substantial growth and continues to expand (Shapero & Sokol, 1982; Bird, 1988; Katz & Gartner, 1988). Investigations centered around intentions have become pivotal in entrepreneurship, with entrepreneurial intentions acknowledged as a fundamental and widely studied variable (Bird, 1988; Krueger et al., 2000; Wilson et al., 2007).

2.2.1 Concept of Entrepreneurial Intention

Entrepreneurial intention derives from the psychological concept of 'intention', offering a new perspective in entrepreneurship research by incorporating insights from psychological studies into the entrepreneurial domain. In psychology, intention signifies a cognitive state that directs one's focus towards a specific goal or action to achieve a particular outcome. It functions as an initial psychological signal of an individual's dedication to a future action and is commonly utilized to forecast the probability of that action taking place (Ajzen, 1991). Furthermore, intention involves actively seeking information conducive to achieving a goal (Katz & Gartner, 1988). When this intention is directed towards entrepreneurial behavior, it becomes 'entrepreneurial intention.' As entrepreneurship research has evolved, numerous scholars have presented various interpretations and definitions of entrepreneurial intention. Bird (1988) suggests that entrepreneurial intention involves the establishment of a new business or the creation of new value within an already existing enterprise., indicating its broader scope beyond solely 'creating a new business.' In contrast, Krueger (1993) proposes that entrepreneurial intention is indicative of an individual's dedication to participating in entrepreneurial endeavors in the time ahead, emphasizing 'the pursuit of an opportunity regardless of the resources currently available' (Krueger

& Brazeal, 1994). Thompson (2009) defines entrepreneurial intention reflects an individual's determination to initiate a new business and actively pursue those plans at a future time. Additionally, Uddin & Bose (2012) highlight that entrepreneurial intention is the inclination or desire to start a new business venture. Table 2 shows the definition of entrepreneurial intention. This study examines the impact of individual entrepreneurial intention within the framework of effectuation. It draws on the concept proposed by Krueger & Brazael in 1994 to define entrepreneurial intention as the active pursuit of a business opportunity, regardless of the constraints imposed by existing resources.

Table 2 The Definition of Entrepreneurial Intention

Author(s) (Year)	Definitions
Bird (1988)	Entrepreneurial intention encompasses establishing a new business or generating fresh value within an existing enterprise, indicating its broader scope beyond solely 'creating a new business.'
Krueger (1993)	Entrepreneurial intention reflects an individual's commitment to engaging in entrepreneurial activities in the future.
Thompson (2009)	Entrepreneurial intention refers an individual's determination to initiate a new business and actively pursue those plans at a future time.
Krueger & Brazael (1994)	Entrepreneurial intentions can be described as the active pursuit of a business opportunity, irrespective of the limitations imposed by the existing resources.
Uddin & Bose, 2012	Entrepreneurial intention is the propensity or eagerness to initiate a new business endeavor.

2.2.2 Research Dimensions of Entrepreneurship Intention

Contemporary studies examining entrepreneurial intention primarily center on the influence of individual and environmental factors. Individual factors encompass personality traits, demographic backgrounds, personal experiences, and cognitive characteristics. Meanwhile, environmental factors predominantly involve social and cultural norms, policy environments, and economic conditions.

Individual factors

Personality Traits: Numerous studies have highlighted the differences in personality traits observed between individuals who are entrepreneurs and those who are not. Among the extensively researched traits, the Big Five (Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism) stand out prominently. For instance, Butz et al. (2018) conducted a survey encompassing more than 500 undergraduate students at a university in the Midwestern region of the United States, revealing a stronger inclination towards initiating new business ventures among individuals with prominent Big Five personality traits. Similarly, a study by Vega-Gomez et al. (2020) examining more than 33,000 Spanish academics reaffirmed the decisive impact of the

Big Five personality traits on the intentions of individuals to pursue entrepreneurial endeavors.

In addition to the Big Five, scholars have investigated various other personality traits. Individuals exhibiting a propensity for risk-taking and an internal locus of control tend to display a higher inclination toward entrepreneurial endeavors (Zollo et al., 2017). Moreover, students demonstrating high perseverance exhibit greater entrepreneurial intentions compared to those with lower perseverance (Butz et al., 2018). Furthermore, Johnson et al. (2018) associated bipolar disorder with entrepreneurial intentions, asserting that traits like ambition, self-confidence, and positive emotions observed in individuals diagnosed with bipolar disorder mirror personality traits commonly found in successful entrepreneurs.

Demographic Background: Studies examining demographic characteristics predominantly concentrate on factors such as education, age, gender, and family background (Zapkau et al., 2015; Asma et al., 2019). Concerning the association between education and entrepreneurial intention, prevalent research tends to support the notion that higher education levels positively influence the development of entrepreneurial intentions. Kuip & Verheul (2003) argued that formal education not only imparts knowledge but also enhances individuals' readiness for future entrepreneurship while nurturing aspirations for an improved quality of life, thereby stimulating motivation for self-employment. Correspondingly, Wu et al. (2008) analyzed the entrepreneurial intentions of students with diverse educational backgrounds based on the theory of planned behavior, revealing substantial disparities in entrepreneurial intentions among students pursuing various majors; for instance, engineering students display heightened entrepreneurial intentions.

Furthermore, gender differences have been observed in entrepreneurial intention within the realm of entrepreneurship. Wilson et al. (2007) noted a greater inclination among males towards entrepreneurial pursuits compared to females. Additionally, Eddleston (2016) reported that female entrepreneurs encounter reduced loan support from banks owing to their gender.

Previous entrepreneurial exposure: An individual's prior exposure to entrepreneurship encompasses familial ties to entrepreneurs, receiving education or training in entrepreneurship, and working for startups or small to medium-sized companies (SMEs). Robust empirical evidence consistently indicates that individuals with family members engaged in entrepreneurship or who have worked in family-founded enterprises exhibit heightened entrepreneurial intentions (Stuart & Sorenson, 2007; Dunn & Holtz-Eakin, 2000; Carroll & Mosakowski, 1987; Carr & Sequeria, 2007; Altinay et al., 2012; Mungai & Velamuri, 2011). Van et al. (2006) conducted a study involving U.S. and Mexican students, revealing that exposure to entrepreneurial role models within families significantly influences college students' career aspirations and fosters their entrepreneurial intentions. Drawing from the TPB theoretical framework, Carr & Sequeria (2007) argued that exposure to family-based entrepreneurial experiences shapes attitudes, subjective norms, and self-efficacy. Altinay et al. (2012) corroborated these findings, asserting that individuals manifest stronger entrepreneurial

intentions when any family member possesses entrepreneurial experience.

The impact of entrepreneurship education and training is well-supported by existing studies, highlighting its positive influence on entrepreneurial intentions (Johannisson, 1991; Noel, 2002; Peterman & Kennedy, 2003; Souitaris et al., 2007; Sánchez, 2013). Souitaris et al. (2007) noted a surge in entrepreneurial mindsets and aspirations among a cohort of 250 science and engineering students enrolled in an entrepreneurship education program at two different universities. Entrepreneurship education offers three key advantages to students: knowledge acquisition, inspiration, and access to incubation resources. This significance is especially evident in resource-constrained environments. Tingey et al. (2020) conducted a 12-month randomized controlled trial of an entrepreneurship education program among 394 Native American youths, demonstrating enhanced entrepreneurial knowledge, economic empowerment, and social well-being, thus reinforcing this premise.

An individual's experience working in startups or small to medium-sized enterprises (SMEs) can significantly impact entrepreneurial intentions. Small businesses and startups provide an ideal environment for sharing experiences and acquiring skills conducive to entrepreneurship (Stuart & Abetti, 1990; Rotefoss & Kolvereid, 2005). This exposure may contribute to the development of entrepreneurial attitudes (Parker, 2004), influencing an individual's sense of control in the entrepreneurial process, acquiring skills necessary for business establishment, and fostering a community that supports entrepreneurship. Acquiring entrepreneurial experience and competencies aids individuals in better evaluating the personal outcomes associated with their entrepreneurial decisions (Scherer et al., 1989).

Beyond personality traits and demographic factors, cognitive elements significantly influence entrepreneurial intentions. Current research on individual cognitive characteristics includes perceived behavioral control, attitudes towards behavioral outcomes, and subjective norms derived from the theory of planned behavior. Additionally, perceived feasibility and perceived attractiveness stem from the theory of entrepreneurial events, while self-efficacy is rooted in the theory of social cognition. Ajzen (1991) highlighted that extrinsic factors impact individual intentions through perceived behavioral control, attitudes towards behavioral outcomes, and subjective norms, thereby influencing corresponding behaviors. Autio et al. (2001) concluded that all three cognitive variables impact entrepreneurial intentions, with perceptions of behavioral control having the most significant impact, while perceptions of social norms had the least impact.

Contrarily, Tarapuez et al. (2018) study suggested that an individual's entrepreneurial intention primarily hinge on their attitudes, followed by behavioral and subjective norms. Variables like perceived feasibility and desirability, derived from the entrepreneurial event model (Shapero & Sokol, 1982), are identified as significant predictors of individual entrepreneurial intentions (Barton, 2018). The inclusion of self-efficacy in the examination of entrepreneurial intentions was pioneered by Boyd & Vozikis (1994), who proposed that an individual's self-efficacy plays a role in shaping entrepreneurial intentions and actions. A study involving 265 MBA students

demonstrated a significant positive impact of self-efficacy on entrepreneurial intentions (Zhao et al., 2005). Similarly, Gutiérrez et al. (2019) discovered, through self-administered questionnaires among college students, that self-efficacy notably contributes to the development of entrepreneurial intentions, while variables such as entrepreneurial identity aspirations and outcome expectations displayed weaker correlations.

Furthermore, cohort studies on entrepreneurial intentions have consistently demonstrated the beneficial influence of entrepreneurial self-efficacy. This was corroborated by Elliott et al.'s (2020) investigation, which involved interviewing mentors to assess students' entrepreneurship performance. Additionally, Brunel et al. (2017) observed a favorable impact of high self-esteem on entrepreneurial intentions, while Santos et al. (2017) found that an individual's perception of opportunity positively influenced early entrepreneurial endeavors.

Environmental factors

Bird (1988) proposed that the entrepreneurial context results from a blend of personal and social contextual factors, highlighting the dynamic interplay between individuals and their surroundings in the cognitive formation of entrepreneurial intentions. Research emphasizes the pivotal role of complex external environmental factors in comprehending the genesis of entrepreneurial intentions (Low & MacMillan, 1988). These encompass socio-cultural norms, policy environments, and economic levels (Asimakopoulou et al., 2019).

The influential Global Entrepreneurship Monitor (GEM) database systematically analyzes the impact of nine dimensions, including financial support, government policies, business environment, cultural and social norms, and infrastructure, on the generation rate of new businesses across countries and regions (Reynolds et al., 2004). Numerous scholars have utilized the GEM database to explore entrepreneurial intentions. For instance, Tripopsakul et al. (2018) employed logistic regression analysis using the 2015 GEM data from a sample of 5,000 individuals in Poland and Thailand. Their study investigated variables like perceived self-efficacy, ability to recognize business opportunities, entrepreneurial networks, fear of failure, and socio-cultural perceptions on entrepreneurial intentions.

Scholars have also delved into the influence of cultural differences on entrepreneurship. Some have compared entrepreneurial profiles across various cultures at national or regional levels (Mueller, 2001; Davidsson, 2004; Beugelsdijk, 2007), discovering that individuals from individualistic societies often base their entrepreneurial intentions on personal experiences (Mueller et al., 2014). In regions with high collective tendencies, social norms wield substantial influence over motivational antecedents and entrepreneurial intentions (Linán & Chen, 2009).

Institutional factors also play a role in influencing entrepreneurial intentions (Ajzen, 1987; Boyd & Vozikis, 1994). Arrighetti et al. (2016) examined the impact of an extended recession on college students' entrepreneurial intentions, noting a significantly negative effect. However, the study underscored that external factors frequently mold

entrepreneurial intentions by shaping people's attitudes toward entrepreneurship (Krueger, 1993).

2.2.3 Recent Studies and Trends of Entrepreneurship Intention

Recent scholarly investigations have brought attention to the considerable impact of a range of preceding factors, such as individual cognitive traits and outlooks, on the desire to engage in entrepreneurial activities. For instance, a study conducted by Karimi (2019) with a sample of 250 students at a collegiate level demonstrated that entrepreneurial attitudes and perceived behavioral control exert a significant influence on entrepreneurial intention as postulated by the Theory of Planned Behavior (TPB). The inquiry also revealed that entrepreneurial passion indirectly shapes entrepreneurial intention through cognitive precursors. Similarly, Neneh's (2022) examination of 500 university students unearthed a positive and substantial correlation between entrepreneurial passion and entrepreneurial intention. Neneh's research underscored the significant and affirmative mediated impact of entrepreneurial passion on entrepreneurial intention through entrepreneurial self-efficacy, which was influenced by social support. Furthermore, Li et al. (2020) investigated the combined effect of entrepreneurial passion and proactive personality, revealing a strong positive effect on entrepreneurial intention.

In addition, Neneh (2019) conducted a study on the influence of action-oriented personality traits on the shift from recognizing opportunities to taking entrepreneurial action, finding that entrepreneurial alertness significantly influences entrepreneurial intention, ultimately leading to entrepreneurial action. An analysis involving over 420 university students suggested that a combination of entrepreneurial role modeling talent, positive attitudes toward entrepreneurship, and specific self-efficacy configurations predicts entrepreneurial intentions (Nowiński & Haddoud, 2019). Additionally, Liu et al. (2019) identified that entrepreneurial attitudes play a partial mediating role in the relationship between entrepreneurial self-efficacy and entrepreneurial intention. Anwar et al. (2021) also found that cognitive load strongly predicts entrepreneurial intentions when examining the influence of experiential learning on entrepreneurial intentions in higher education. Additionally, Mahfud et al. (2020) proposed in their study that psychological capital partially mediates the connection between entrepreneurial attitude orientation and entrepreneurial intentions among polytechnic students. In addition to individual factors, organizations and the environment also impact entrepreneurial intention (Amofah & Saladrigues, 2022).

In summary, recent research highlights a multifaceted interplay of individual attitudes, personality traits, cognitive factors, and mediating variables in shaping entrepreneurial intentions. Understanding these complex relationships is crucial for comprehending the factors influencing individuals' decisions to pursue entrepreneurship and can offer insights for educational programs, policy-making, and fostering an entrepreneurial mindset. With continued academic interest in the antecedents of entrepreneurial intention, this study aims to further explore additional influences on entrepreneurial intention based on decision-making logic theory.

2.3 Literature Review of Entrepreneurial Role Model

2.3.1 Originality and Concept of Entrepreneurial Role Model

The concept of role model originated as a psychological framework used to analyze how adolescents shape their self-perceptions, known as "self-concept," during their developmental stages (Gibson, 2004). By imitating the behavior of their identified role model, adolescents engage in the psychological process of determining their desired self-identity. Several theorists have emphasized the crucial role of role model in shaping self-concept development (Super, 1957; Kagan, 1958; Kohlberg, 1963).

Research has indicated that people utilize role model to varying degrees in the formation of their physical, psychological, and social identities. When setting personal career objectives, individuals are often influenced by role model (Christiansen, 1979). As scholars progressively apply the concept of role model across disciplines such as organizational behavior, social psychology, and occupational theory, several definitions have emerged. According to Shapiro et al. (1978) and Wright et al. (1997), role model serves as reference points that offer inspiration or motivation for individuals to make specific decisions and pursue objectives. Bell (1970) and Bryant & Zimmerman (2003) argue that a role model embodies specific qualities that are recognized, aspired to, and admired by others. Erkut & Mokros (1984) and Rogers (1986) similarly define a role model as an individual who possesses values, skills, and traits that others consider important and strive to emulate.

Drawing from social learning theory, Gibson (2004) presents a comprehensive elucidation of role model involving two theoretical dimensions: role and role model. Firstly, viewed through the lens of the role concept, individuals often recognize their own tendencies by observing others. Queries concerning one's identity or the potential for personal development are often resolved through observing other people's behavior. This recognition can help individuals in understanding 'what kind of person am I and what kind of person can I become,' rather than attempting to solve these questions in isolation. Secondly, in terms of the model concept, individuals tend to shape their cognitive skills and behavioral patterns by mirroring others they observe. The idea behind a role model is that people have a natural inclination to learn by observing others. Individual identification of role model occurs when someone is attracted to individuals who share similarities in traits, behaviors, and goals. They believe they can learn certain skills from these individuals and try to enhance these similarities through observation.

In the domain of entrepreneurship, role model exerts a substantial influence on individuals' entrepreneurial aspirations (Mungai & Velamuri, 2011; Karimi et al., 2016). The role model typically encompasses an individual with entrepreneurial experience who holds sway over others in their entrepreneurial pursuits, often including familiar acquaintances or those with whom one has interacted. Research suggests that exposure to parental, relative, or peer engagement in entrepreneurial activities heightens individuals' inclination towards entrepreneurship (Matthews & Moser, 1995; Kolvereid, 1996; Mueller & Schwens, 2014). Krueger (2000) regards entrepreneurial role model as influential figure whose accomplishments, behavior, or success stories inspire others to engage in entrepreneurial activities. It emphasizes successful entrepreneurs as model for emulation and learning (Vaghely & Julien, 2010). According to Bosma (2012),

entrepreneurial role model can perform four interrelated tasks functions: (i) inspiration and motivation (i.e., role model create s awareness and motivate people to get started), (ii) increased self-efficacy (i.e., role model convinces people that they too can achieve a goal), (iii) learning by by example (i.e., the role model provides guidelines for action), and (iv) learning through support (i.e., the role model practicing support or advice).

The presence of entrepreneurial role model, regardless of their level of success, has been found to strengthen the connection between self-efficacy and intentions to pursue entrepreneurship (Laviolette et al., 2011), aligning with Gibson's (2004) classification of role model into positive or negative categories. They can also be successful entrepreneurs in the community or industry, whose achievements and stories motivate others to pursue their own entrepreneurial endeavors. These influential figures can offer valuable guidance, motivation, and expertise in entrepreneurship to individuals seeking to pursue an entrepreneurial journey (Waleczek et al., 2018). Based on the research framework of this study, the definition of entrepreneurial role model proposed by Bostma (2012) aligns more closely with the content of this study. Entrepreneurial role model can motivate others, enhance individuals' self-efficacy, and provide them with actionable guidelines and role modeling practices or support.

2.3.2 Research Dimensions of Entrepreneurial Role Model

Entrepreneurial role model represents an emerging concept that applies role model theory to the realm of entrepreneurship. In the past three decades, this aspect of entrepreneurial role model has undergone comprehensive study across diverse domains. Academics have thoroughly investigated the impact of entrepreneurial role model on individual, utilizing theoretical frameworks including social learning theory, social cognitive theory, and the theory of planned behavior.

Impact of Entrepreneurial Role Model on Individuals' Career Preferences and Attitudes

Firstly, exposure to successful entrepreneurial role model significantly influences an individual's inclination towards pursuing entrepreneurship as a career. Role model, especially successful parental figure, has the potential to elevate an individual's aspirations for education and training, bolster their self-assurance in achieving success, and heighten their career expectations within the entrepreneurial realm (Scherer et al., 1989; Scherer et al., 1991). Entrepreneurs wield a substantial impact on the entrepreneurial aspirations of aspiring individuals, particularly evident within same-sex contexts, such as among women. The influence of female founder on the entrepreneurial decisions of aspiring women surpasses that of other social interactions, like peer influence and parental role model (Rocha & Praag, 2020).

Entrepreneurial role model plays a crucial role in shaping individuals' attitudes and beliefs towards the possibility of pursuing a career in entrepreneurship. According to Boissin et al. (2011), the influence of the role model affects the career aspiration of individual. The existence of successful entrepreneurial figures in a country or community sends a clear message that entrepreneurship is a desirable and viable career path for potential entrepreneurs. A higher number of role model correlates with a greater inclination towards entrepreneurship among individuals (Gnyawali & Fogel, 1994). Highlighting the achievements of influential entrepreneurial role models can enhance

perceptions of entrepreneurship's viability (Krueger & Brazeal, 1994). Guidance from entrepreneurial role model nurtures positive attitudes and expectations about entrepreneurship, as well as behavioral control and perceived feasibility (Nabi et al., 2021). Positive role model elevates individual's confidence in considering entrepreneurship as a viable career choice, subsequently influencing their career expectations.

Furthermore, entrepreneurial role model boosts individual's belief in their capacity to succeed as entrepreneur (Scherer et al., 1989; Krueger 1993). The role model instills a sense of belief in their capability to tackle entrepreneurial challenges and alleviate the ambiguity often tied to embarking on entrepreneurial endeavors (Minniti, 2005). Exposure to accomplished role model reinforces an individual's confidence in the ability to succeed as an entrepreneur, resulting in stronger intentions to pursue entrepreneurial endeavors and heightened involvement in entrepreneurial activities (Boyd & Vozikis, 1994). Observing role model reinforces self-belief and the likelihood of pursuing entrepreneurship (Scherer et al., 1991). The importance of having a role model in the field of entrepreneurship cannot be overstated, as it plays a significant role in fostering a passion for entrepreneurship, especially in individuals with a strong desire to learn (Türk et al., 2019). Research has shown that observing successful entrepreneurs as role model can significantly reduce the fear of failure in entrepreneurship (Wyrwich et al., 2015). Table 3 displays the impact of entrepreneurial role model on individuals' career preference.

Table 3 The Impact of Entrepreneurial Role Model on Individuals' Career Preferences and Attitudes

Author(s) (Year)	Main point	Theory
Scherer et al. (1989)	Having a parent who serves as a successful role model in entrepreneurship can significantly elevate an individual's ambitions for education and training, as well as their belief in their own abilities to accomplish tasks and their outlook on pursuing a career in entrepreneurship.	Social learning theory
Schere Etal. (1991)	Self-efficacy is strengthened by observing a role model and by the likelihood of embarking on a new venture. Individuals who have observed a parent serving as a positive role model, whom they perceive as a highly accomplished individual, tend to develop a unique set of personal characteristics and a strong inclination towards pursuing an entrepreneurial career path.	Social learning theory
Boyd & Vozikis (1994)	The presence of a role model who embodies entrepreneurial qualities can positively influence an individual's self-confidence and belief in their capabilities to succeed as an entrepreneur. When individuals are inspired by an entrepreneurial role model, they tend to exhibit higher levels of self-assurance, leading to stronger intentions to pursue entrepreneurial endeavors and a greater likelihood of taking proactive steps toward entrepreneurship.	Social learning theory

Krueger & Brazeal (1994)	Promoting the achievement of legitimate entrepreneur as role model can enhance the belief that launching a business is truly achievable.	
Minniti (2005)	Role model plays a key role in boosting self-efficacy and offering valuable information, ultimately reducing the uncertainty inherent in starting a business.	
Boissin et al. (2011)	Professional values may be shaped to some degree by the entrepreneurial role model and personal experiences with business ventures, whether they are successful or not. Having an entrepreneurial role model can help reduce the conflicts between professional values and perceptions of entrepreneurship.	Theory of planned behavior
Mungai & Velamuri (2011)	The independent work of parents from the later stages of childhood to early adulthood significantly and positively impacts the probability of their children choosing self-employment in their own future endeavors.	Social learning and career development theories
Bosma et al. (2012)	It is crucial for an individual aspiring to become entrepreneurs or embark on a new business venture to have strong and influential role model. Their guidance and example can be instrumental in shaping one's path to success in the entrepreneurial world.	Role identification theory & social learning theory
Wyrwich et al. (2015)	Studying accomplished business owners and their achievements can be instrumental in reducing the apprehension of experiencing failure in the entrepreneurial realm.	
Türk et al. (2019)	Exposure to entrepreneurial role model has a beneficial effect on the entrepreneurial drive of employees. Furthermore, when employees demonstrate a moderate to high level of willingness to learn, it further solidifies these positive connections.	Social learning theory
Nabi et al. (2021)	Mentoring from entrepreneurial role model has been proven to have a favorable influence on attitudes toward entrepreneurship, while also boosting perceived desirability. Additionally, it can also contribute to a greater sense of perceived behavior control and feasibility in potential entrepreneurs.	
Rocha & Praag, (2020)	The impact of startup founders on the entrepreneurial inclinations of potential recruits can be quite substantial, especially in cases where there is a gender match. Female founders wield significant influence over the entrepreneurial choices of female recruits, surpassing the effects of other social interactions such as peer influence and parental role model.	Social identity theory; Similarity-attraction theory

Impact of Entrepreneurial Role Model on Entrepreneurial Behaviors and Activities

Entrepreneurial role model wields significant influence over individuals' actual entrepreneurial behavior. Exposure to successful role model often correlates with

increased engagement in entrepreneurial activities, including initiating new ventures, pursuing innovative opportunities, taking calculated risks, and deriving inspiration and guidance from the experiences of these role model. This impact is observed across genders, as both men and women are influenced by entrepreneurial role model (Entrialgo & Iglesias, 2018). Studies indicate that an individual exposed to parental role model is more inclined toward self-employment, and this inclination intensifies with the depth of parental experiences in self-employment (Chlosta et al., 2012; Hoffmann et al., 2015). Notably, while the influence of self-employed fathers is more pronounced on men, mothers exert a greater impact on women (Hoffmann et al., 2015). Additionally, fathers significantly influence the entrepreneurial decisions of their daughters, as female entrepreneurs often seek advice, support, and encouragement from their parents. In contrast, some male entrepreneurs strive for independence or competition with their parents, primarily fathers (Kirkwood, 2007).

Moreover, the impact of entrepreneurial role model on entrepreneurial activity varies across age groups. Young individual tends to hold more positive social evaluation of entrepreneurial role model, which simultaneously enhances the positive impact of entrepreneurial knowledge on their attitudes towards entrepreneurial endeavors (Lafuente et al., 2013). Exposure to highly successful role model has been linked to higher levels of inspiration, identification, and proactive career behavior, in contrast to exposure to less successful role model (Buunk et al., 2007).

Regarding the stage of entrepreneurial activity, perceptions of role model exert a notably positive impact on early entrepreneurial activity, particularly during crises (Santos, 2017). During the pre-entrepreneurship phase, individuals primarily learn from unplanned interactions with various role models, significantly contributing to their professional self-development (Gibson, 2004). Post-entrepreneurship, the observation of role model becomes more purposeful and is often associated with personal or business challenge. Entrepreneur not only learns by engaging with entrepreneurial role model but also continues learning by observing role model in the phases before and after company creation while undertaking relevant tasks (Zozimo et al., 2017). In a study across cultural groups, it was observed that individual from collectivist culture primarily preferred group reference resource and knowledge provided by entrepreneurial role model (Mueller et al., 2014). Table 4 presents the impact of entrepreneurial role model on entrepreneurial behavior and activity.

Table 4 The Impact of Entrepreneurial Role Model on Entrepreneurial Behavior and Activities

Author(s) (Year)	Main point	Theory
Gnyawali & Fogel (1994)	Having successful entrepreneurial role model within a community or country sends a powerful message to potential entrepreneurs that business is an attractive and feasible career choice. The presence of a higher number of such role model increases the likelihood that individuals will be highly motivated to pursue entrepreneurship.	

Buunk & Griffioen (2007)	Exposure to a highly successful role model resulted in a greater level of motivation, recognition, and proactive career engagement compared to exposure to an unsuccessful role model.	
Kirkwood (2007)	Fathers play a crucial and essential role in the process of making decisions for the creation of new ventures. Numerous female entrepreneurs seek guidance, support, and motivation from their parents, while some male entrepreneurs seek to establish independence from their parents (especially fathers) or strive to rival them.	
Chlosta et al., 2012	The influence of a parent as a positive role model can greatly increase the likelihood of an individual choosing to pursue entrepreneurship. Additionally, the effectiveness of the role model depends on the individual's openness and willingness to be influenced.	Social learning theory
Lafuente et al. (2013)	The influence of entrepreneurial role model on entrepreneurial activities differs across various age groups. Research indicates that younger people tend to have a more positive view of entrepreneurial role model within society. This positive perception plays a significant role in the extent to which knowledge of an entrepreneur influences their attitudes toward engaging in entrepreneurial activities.	Socio-institutional approach
Mueller et al. (2014)	Individuals from collectivistic cultures tend to favor resources and knowledge that are referenced within their own group, and they look to entrepreneurial role model for guidance.	Theory of planned behavior
Santos (2017)	The influence of role model has had a significantly positive effect on the initiation of entrepreneurial ventures. Moreover, the importance of being acquainted with individuals who have effectively launched a business was even more pronounced during periods of crisis, in comparison to previous times.	
Zozimo et al. (2017)	Entrepreneurs not only acquire knowledge when they interact with a mentor, but they also gain insights from observing mentors in different social settings. This learning process is linked to two significant stages of entrepreneurship: before and after the establishment of a company, with the goal of completing the tasks associated with entrepreneurial learning.	Social learning theory

The Impact of Entrepreneurial Role Model on Entrepreneurial Intention

Entrepreneurial role model plays a pivotal role in shaping and fostering entrepreneurial intentions (BarNir et al., 2011; Feltnhofer & Mueller, 2018). These influential figures could inspire individuals, igniting within them a strong desire and motivation to embark

on entrepreneurial ventures, thereby significantly impacting their entrepreneurial intentions. Within an entrepreneurial family context, parental role model not only elevates individuals' entrepreneurial intention (Entrialgo & Iglesias, 2017; Moreno-Gómez et al., 2020) but also contribute to the development of subjective norms, enhanced perceived behavioral control, and the dominance of crucial antecedents linked to entrepreneurship (Zapkau et al., 2014; Palmer et al., 2019). Interestingly, parental role modeling has a notably greater impact on children compared to other segments of the population (Chlosta et al., 2012; Criaco et al., 2017), and the impact of role model on entrepreneurial intention is further moderated by gender dynamics (Moreno-Gómez et al., 2020). Whether the role model is successful or unsuccessful, He / She exerts an influence on individuals' aspirations towards entrepreneurship (Laviolette et al., 2011). However, the influence of role modeling on entrepreneurial intentions is subject to moderation by individual entrepreneurial experiences and personality variables such as self-esteem and locus of control (Brunel et al., 2017). Particularly, lower levels of self-esteem have been associated with a reduction in entrepreneurial intentions following business failure (Chen et al., 2016). Furthermore, the predictive power of inspirational role model on entrepreneurial intention becomes more pronounced when accompanied by positive attitudes toward entrepreneurship and aspects of entrepreneurial self-efficacy (Nowiński & Haddoud, 2019). Table 5 illustrates the impact of entrepreneurial role model on entrepreneurial intention.

Table 5 The Impact of Entrepreneurial Role Model on Entrepreneurial Intention

Author(s) (Year)	Main point	Theory
Van Auken et al. (2006)	Participating in activities with role model that actively engage the respondent had a greater impact on the individuals involved.	
Engle et al. (2011)	The influence of family as a social factor is notably important in the majority of countries, with significance observed in 11 countries. Role model is of considerable importance in nine nations, while friends have a significant impact in six countries. Interestingly, the parental involvement in small business ownership had a beneficial effect on emotional intelligence in just four specific countries.	Social learning theory
Laviolette et al. (2011)	Successful and unsuccessful role models both have the potential to bolster self-efficacy and entrepreneurial intention.	
Zapkau et al. (2014)	Being in the presence of accomplished entrepreneurs can greatly influence a person's outlook on venturing into business, and their prior professional background can also shape their perception of their ability to take on entrepreneurial endeavors and their overall attitude towards entrepreneurship.	Theory of planned behavior

Chen et al. (2016)	Research has shown that witnessing the collapse of a business can significantly dampen a person's desire to pursue entrepreneurship, especially if their self-esteem is already low. On the other hand, individuals with strong self-esteem are more inclined to consider an entrepreneurial path, even in the face of business setbacks.	Social learning theory
Brunel et al. (2017)	The influence of role model on students' self-confidence and inclination towards entrepreneurship is affected by their personal background in entrepreneurship and individual traits like self-worth and sense of control over their lives.	Social-Cognitive Theory
Entrialgo & Iglesias (2017)	Parental role model has a strong positive correlation with the development of entrepreneurial intention.	Theory of planned behavior
Fellnhöfer & Mueller (2018)	Positive and influential role model has a substantial impact on shaping the intention to become an entrepreneur through the Theory of Planned Behavior (TPB) and the entrepreneurial event model, which encompasses perceived desirability and feasibility.	Theory of planned behavior
Palmer et al. (2019)	Coming from a family with a strong entrepreneurial background, which includes having a parent as a role model, has been found to significantly increase entrepreneurial intention and its underlying factors. These antecedents include subjective norms, perceived behavioral control, and dominance.	Social learning theory
Nowiński & Haddoud (2019)	Inspirational individuals serve as important influencers in driving entrepreneurial aspirations, particularly when accompanied by favorable attitudes towards entrepreneurship, as well as diverse combinations of self-efficacy dimensions related to entrepreneurial ability.	
Moreno-Gómez et al. (2020)	The existence of a parental figure as a role model has been found to positively impact entrepreneurial intentions, with the influence being influenced by the gender of the individual. Specifically, having an entrepreneurial father or mother serves as a positive influence on the entrepreneurial intentions of their children.	Theory of planned behavior
Wang et al. (2021)	The impact of role model has a significant influence on the propensity of academic scientists to participate in academic entrepreneurship, thereby amplifying their intention to participate in such endeavors.	

2.3.3 Recent Studies and Trends of Entrepreneurial Role Model

In recent years, research on entrepreneurial role model has focused on their impact on entrepreneurial intentions, including the influence on individuals of different genders, parents' attitudes towards their children's entrepreneurship, and academic entrepreneurs. Marks (2021) conducted a qualitative study on female entrepreneurial role model, revealing the impact on women's start-ups through public narratives. Similarly, Rocha

& Van Praag (2020) suggested that female entrepreneurs have a stronger impact on women's business participation in comparison to other forms of social interactions, such as peer influences and the influence of parental role model. Additionally, Kong et al. (2020) examined the moderating effects of business role model and fear of failure on the relationship between entrepreneurial intention and behavior. They found that entrepreneurial intention is positively correlated with entrepreneurial behavior and that fear of failing often discourages college students from embracing entrepreneurial behaviors, but having successful business role models can boost their desire to pursue entrepreneurial endeavors.

Regarding the impact on personal attitudes and entrepreneurial behavior, Türk et al. (2020) conducted an empirical analysis of more than 500 students at five universities, finding that exposure to parental role models exerted a more significant influence on women's entrepreneurial mindsets compared to men's. Soleimanof et al. (2021) discovered that children cultivate favorable entrepreneurial mindsets when they perceive their parents as having enthusiasm. This impact is particularly pronounced in households that embrace highly conversational and steady communication approaches. However, Maulida et al. (2020) suggested that role model from the family - whether the parents or any other family member - does not play a substantial role in shaping the entrepreneurial attitudes of students. Additionally, Rajchamaha et al. (2021) discovered that the impact of entrepreneurial role model on students' entrepreneurial skill was indirectly observed through a case study methodology. While Xiao & Fu (2022) put forward an encompassing enrichment framework for the "work-family community" derived from existing literature, highlighting the substantial positive influence of peer effect of entrepreneurial role model on entrepreneurial behavior within specific clusters.

Furthermore, the impact of entrepreneurial role model on academic entrepreneurship and education has received increasing attention. Wang et al. (2021) conducted a study involving over 270 scientists affiliated with Chinese universities. Their research revealed that exposure to entrepreneurial role model had a beneficial impact on the entrepreneurial aspirations of academic scientists. This conclusion aligns with the findings of Di (2020), who also observed a similar positive influence of role model on the entrepreneurial intention of female academic entrepreneur.

Building upon earlier conceptual studies, research on entrepreneurial role model has expanded and deepened, with continued focus on their influence on entrepreneurial intention. However, there is a dearth of research on the impact of entrepreneurial role model on entrepreneurial intention within the framework of effectuation—a pivotal logical framework for entrepreneurial decision-making. Therefore, our focus will center on the impact of entrepreneurial role model on entrepreneurial intention within the context of effectuation theory.

2.3.4 Entrepreneurial Intention through Role Model

Influence of Entrepreneurial Role Model on the Formation of Entrepreneurial Intention

Numerous entrepreneurs attribute their decision to embark on entrepreneurial ventures to the influence of other individuals such as former colleagues, friends, and family members who themselves are entrepreneurs (Kruegel & Brazeal, 1994; Uddin & Bose,

2012; Zeffane, 2012). These individuals, commonly referred to as "entrepreneurial role models," are recognized for their influence on aspiring entrepreneurs (Bosma et al., 2012). The impact of the role model can be seen in popular business media, where story of his / her success often inspires others to pursue entrepreneurial endeavors (Bosma et al., 2012). It is widely acknowledged that entrepreneurial role model can positively influence an individual entrepreneurial intention (Krueger et al., 2000; Liñán & Fayolle, 2015; Chen et al., 2016). Organizations such as OECD (2009) and the European Commission (2003) also recognize the significant influence of entrepreneurial role model on the formation of entrepreneurial intention.

Initial studies focusing on the influence of entrepreneurial role model on entrepreneurial intention substantiate their impact. For instance, Van Auken et al. (2006) made a significant finding when they observed that the presence of family members who are entrepreneurs has a positive impact on the formation of entrepreneurial aspirations among college students in the United States and Mexico. Similarly, a comprehensive cross-country survey conducted in 2012 (Laspita et al., 2012) revealed that familial figures such as parents and grandparents play a substantial role in enhancing the entrepreneurial aspirations of students. Moreover, in a study involving Spanish engineering students, Pablo-Lerchundi et al. (2015) showcased that parental professional background notably influences children's entrepreneurial intentions, with offspring of entrepreneurial parents displaying stronger inclinations towards entrepreneurship compared to children of civil servant parents. This trend is also evident in research on the academic entrepreneurial intentions of academic researchers (Fernández-Pérez et al., 2015). Studies examining established entrepreneurs, such as Bosma et al. (2012), emphasizes the crucial impact of entrepreneurial role model on the formation of entrepreneurial intention. Additionally, studies highlight the influence of an individual's social network (Klyver et al., 2014) on his / her decision to embark on entrepreneurial endeavor, emphasizing that social network serve as a source of entrepreneurial role model.

In addition to asserting the presence of an influential effect, research has also sought to discern the type of entrepreneurial role model that exerts a stronger influence. Urbano et al. (2011) illustrated that a role model sharing the same ethnic background is more likely to motivate group members toward entrepreneurial pursuits by conducting a case study. Scholars have delved into specific paths of influence in this regard. Drawing on the Theory of Planned Behavior (TPB), Krueger (1993) and Krueger & Carsrud (1993) suggested that entrepreneurial role modeling indirectly impacts entrepreneurial intentions through other antecedents like attitudes and perceived ability to succeed in entrepreneurship. Linán & Chen (2009) argued that entrepreneurial role model affects entrepreneurial intention by influencing attitudes as a mediating factor within TPB. Similarly, Kolvereid (1996) and Zapkau et al. (2014) concluded that role model influences entrepreneurial intention by affecting antecedent variables of career choice intention (such as attitudes, subjective norms, and perceived behavioral control) rather than directly impacting entrepreneurial intention. Barnir et al. (2011) put forth the argument that there is a connection between entrepreneurial role model and entrepreneurial self-efficacy, which is a crucial precursor to entrepreneurial intention. They suggested that entrepreneurial role model has a positive influence on

entrepreneurial self-efficacy.

Expanding upon prior scholarly investigations, this study underscores the substantial influence of entrepreneurial role model on shaping entrepreneurial intention. Primarily, these role model acts as compass points, exerting a profound impact on individuals by molding their behavior and shaping their perceptions. By observing and analyzing role model, an individual benchmarks his / her own circumstance and experience, thereby conducting a cognitive self-assessment of the present and future capabilities. This evaluation forms the bedrock for shaping his / her expectation and anticipation concerning potential outcome in entrepreneurship (Laspita et al., 2012). When an individual witnesses the achievements of focused role model, there's a notable alignment with this successful exemplar. This alignment fuels an innate anticipation of experiencing parallel entrepreneurial success, thereby significantly boosting individual's entrepreneurial intention (Fellnhöfer & Müller, 2018).

Secondly, entrepreneurial role model serves as invaluable reservoirs of information and support for aspiring entrepreneur. Within the realm of entrepreneurship, individual gleams not only inspiration from the narratives of the role model but also acquire pertinent knowledge and honing of business-related skills (Bandura, 1986). This knowledge acquisition and skill development critically contribute to visualizing diverse business possibilities and assuaging the apprehensions linked with the unknown aspects of initiating a business venture (Bosma et al., 2012). This newfound insight and skill set substantially bolster motivation levels, fostering a proactive drive to pursue entrepreneurship. We proposed the first proposition as follows:

Hypothesis 1: Entrepreneurial role model has a positive influence on entrepreneurial intention.

2.4 Literature Review of Effectuation

2.4.1 The Concept of Effectuation

Effectuation is a unique decision-making logic that provides entrepreneurs with a distinct approach to launching new ventures in uncertain environments (Sarasvathy, 2001). It emphasizes the consideration of available means rather than predefined ends, and involves choosing from a range of potential outcomes that can be achieved using those means. The means in question are determined through exploration of three fundamental questions: 'Who am I? Who do I know? What do I know?' These questions form the basis of effectuation. 'Who am I?' involves self-reflection on the entrepreneur's attributes and capabilities; 'Who do I know?' pertains to their social network; and 'What do I know?' relates to their education, expertise, and experience (Sarasvathy, 2001).

Effectuation embodies the notion that entrepreneurs initiate ventures by leveraging existing resources and incremental steps, guided by adaptive decision-making (Sarasvathy, 2001). It represents a coherent decision-making framework, facilitating swift actions and adjustments in entrepreneurial pursuits. This concept sheds light on how ordinary individuals inadvertently foster new businesses and markets (Sarasvathy, 2008), emphasizing the use of available resources to attain goals amid uncertainty.

Scholars have offered varied definitions of effectuation. Dew et al. (2009) underscores its facets, encompassing the identification of potential markets, holistic venture development prioritization, reduced reliance on predictive data, resourceful strategies, prudent investment, and a strong focus on cultivating partnerships.

Effectuation is described as a process that begins with "a set of means as given and focuses on selecting between possible effects that can be created with that set of means" (Brettel et al., 2012). Chandler et al. (2011) outline four key dimensions of effectuation: experimentation, affordable loss, pre-commitment, and flexibility. Experimentation involves using available resources to take actions, engaging in trial and error for rapid iteration. The principle of affordable loss suggests that entrepreneurs invest in ventures considering their ability to withstand financial losses, time, and opportunity costs, without solely relying on projected returns. Pre-commitment emphasizes the establishment of strategic alliances to obtain new resources from stakeholders, sharing risks, and shaping the future collectively. Flexibility involves viewing unforeseen events as opportunities, responding positively and adaptively to diverse contingencies. This study explores the impact of entrepreneurial role model on entrepreneurial intention, with a focus on the four dimensions of effectuation, following the concept of effectuation proposed by Chandler et al. (2011). Effectuation is defined as a formative construct consisting of the sub-dimensions of experimentation, affordable loss, flexibility, and pre-commitment. Table 6 provides the relevant definition of effectuation.

Table 6 Definition of Effectuation

Author(s) Year	Definitions
Sarasvathy (2001)	Effectuation represents a distinctive decision-making logic that offers entrepreneurs a unique approach to establish new ventures in uncertain environments, involves leveraging existing resources and relationships for creating new opportunities.
Sarasvathy (2008)	Effectuation can be understood as a coherent system of decision-making criteria that guides individuals in taking actions. It offers insights into how regular individuals can unintentionally create new businesses and markets.
Dew et al. (2009)	Effectuation involves identifying additional potential markets, prioritizing the holistic development of the venture, minimizing reliance on predictive data, focusing on resourcefulness and prudent investment, and placing a strong emphasis on nurturing and cultivating networks of partnerships.
Brettel et al. (2012)	Effectuation refers to a series of processes that begin with "a set of means as given and focus on selecting between possible effects that can be created with that set of means."
Chandler et al. (2011)	Effectuation encompasses four key dimensions: experimentation, affordable loss, pre-commitment, and flexibility.

2.4.2 Research Dimensions of Effectuation

Previous studies examining the antecedents of effectuation have primarily concentrated on exploring the influence of psychological factors encompassing the entrepreneur's stage, entrepreneurial experience, and cognition. Notably, Read et al. (2009) investigated the impact of environmental uncertainty and entrepreneurial stage on effectuation, while Chandler et al. (2011) probed the roles of entrepreneurial and

workplace experiences in effectual decision-making. Academics have also explored the impacts of various elements such as cognition, motivation, and emotion on the rationale behind entrepreneurship. For instance, Stroe et al. (2018) scrutinized the influence of passion, entrepreneurial self-efficacy, and risk perception on effectuation using fsQCA methodology.

Extensive research has explored the outcome variables of effectuation, spanning its impact on diverse facets including performance, internationalization, dual rationality, and business model innovation. Effectuation, as a decision-making logic guiding organizational strategy, has showcased a positive influence on performance metrics. Read et al. (2009) confirmed the beneficial impact of effectuation on start-up performance in developed countries. Cai et al. (2017), based on data from 266 start-ups, asserted that effectuation significantly contributes to enhancing start-up performance. This finding is further corroborated by Chen & Chen's (2021) study. Moreover, research has delved into the impact of effectuation on performance by exploring mediating or moderating mechanisms. For instance, Cruz et al. (2018) analytically tested the mediating role of entrepreneurial social identity in the relationship between effectuation and firm performance. Additionally, it has been observed that specific sub-dimensions of effectuation, such as experimentation, flexibility, and pre-commitment, positively moderate the relationship between product diversification and venture performance (Deligianni et al., 2017).

In the realm of international entrepreneurship, the landscape is marked by inherent unpredictability, ambiguous objectives, and ever-evolving environmental dynamics (Schweizer et al., 2010). As a result, significant focus has been placed on examining the relationship between effectuation and internationalization processes, primarily revolving around the 'situation-problem-behavior' mechanism. Contrary to the gradual internationalization process emphasized by the Uppsala model, research indicates that small international businesses that achieve success frequently depend more on the principles of effectuation (Frishammar & Andersson, 2009). Within this domain, some studies have positioned internationalization as a sub-dimension of the entrepreneurial process, especially within uncertain environments (Frishammar & Andersson, 2009).

Scholars have attempted to use effectuation theory to analyze the process of entrepreneurial firms' entry into international markets and their strategic decisions (Galkina & Chetty, 2015). Sarasvathy et al. (2014) explored how effectuation facilitates the resolution of core conflicts in the creation of internationalized firms, and Harms & Schiele (2012) indicated that experienced entrepreneurs are more likely to employ effectuation when it comes to the process of international expansion. Ciszewska-Mlinaric et al. (2016) explored the dynamic evolution of decision logics during the internationalization process of start-ups through a case study, finding that decision-making processes during the initial phases of company expansion and global expansion do not adhere to a singular logic.

The integration of effectuation and causation dual rationality has garnered scholarly attention regarding their coexistence within firms and their interchangeable functionality. While effectuation, with its patchwork of decision-making behaviors,

often takes precedence in the development and establishment of new ventures by entrepreneurs, causation also holds relevance to some extent (Fisher, 2012). Scholars converge on the notion that hybrid decision logics (effectuation/causation) may emerge, reproduce, and coexist to varying extents throughout the evolution of new business and enterprises (Ortega et al., 2017). Smolka et al.'s (2018) study further corroborates the positive impact of dual decision rationality on performance. Contrary to the perception of effectuation and causation as two opposing ends of a spectrum, research suggests that they can alternately operate at different stages of firm development (Perry et al., 2012). Studies indicate that firms tend to predominantly employ effectuation in the early stages of entrepreneurship, gradually transitioning to a greater reliance on causation in later stages (Sharma & Salvato, 2011).

The correlation between effectuation and business model innovation is a topic of interest among scholars. They view business models as the systematic architecture of enterprises that create and realize value. Scholars deconstruct them from different theoretical perspectives to explore business model innovation (Zott et al., 2011). Unlike research from the strategy school, the research under the uncertainty decision-making perspective emphasizes that business model innovation is a process of decision-makers constructing or reorganizing the creation of models in their minds. This perspective mainly studies the induced logic of business model innovation (Velu & Jacob, 2016). Empirical research has identified a strong positive relationship between effectuation and the innovation of business models. Some scholars have also explored the impact of two different decision logics, causation/effectuation, on the effectiveness of business model innovation. Futterer et al. (2018) used structural equation modeling techniques to examine the data of 128 enterprises, and found that both kinds of decision-making logic are effective in moderate growth industries.

2.4.3 Recent Studies and Trends of Effectuation

Research on effectuation in recent years still focuses more on psychological factors such as entrepreneurs' prior experience, cognition, and emotions, etc., with the cognitive dimensions such as prior experience, risk perception (Frese et al., 2020), and entrepreneurial vigilance (Sirén et al., 2019) receiving more attention, while other variables such as family financial support (Braun & Sieger, 2021) are considered as one of the factors that motivate effectuation from the perspective of overcoming resource constraints. Frese et al. (2020) verified the impact of founders' perceived uncertainty, entrepreneurial experience, managerial experience, and investor influence on effectuation. They employed a combination of qualitative and quantitative research methods to verify their findings. Sirén et al. (2019) conducted a study on the implementation of entrepreneurship by surveying 92 entrepreneurs who were operating businesses in Sweden. Their findings indicated that there is a positive correlation between entrepreneurial alertness and effectuation in the process of opportunity creation. In addition, recent research has also focused on entrepreneurial network, how entrepreneurs construct networks with stakeholders through effectuation in uncertain situations (Galkina & Atkova, 2019; Kerr & Coviello, 2019; Kerr & Coviello, 2020; Galkina & Jack, 2022) and how SMEs use effectuation to acquire and reconfigure resources during an epidemic (Simms et al., 2022).

While an extensive body of research has explored the antecedents and outcomes of

effectuation, Harms & Schiele (2012) emphasize the need for future studies to delve deeper into its antecedents, consequences, mediators, and moderating mechanisms. Notably, expert entrepreneurs tend to exhibit a clear preference for effectuation in their decision-making behaviors. This tendency can be seen in research conducted by Read et al. (2009) and Harms & Schiele (2012), which suggests that the greater an entrepreneur's existing knowledge, the more pronounced their inclination towards effectual decision-making. Interestingly, evidence also suggests that certain novice entrepreneurs or managers resort to effectuation when confronted with uncertain environments, despite lacking extensive entrepreneurial experience (Drnovsek et al., 2016).

Given that effectuation represents a heuristic approach to decision-making and action-taking (Read et al., 2009), it raises the question of whether effectuation influences an individual's propensity to initiate a business venture. This study endeavors to explore the potential impact and mechanism through which effectuation has a significant impact on the relationship between entrepreneurial role model and an individual's intention to pursue entrepreneurship.

2.4.4 The Mediating Role of Effectuation

Entrepreneurial role model plays a significant role in fostering and enhancing entrepreneurial intentions by inspiring, providing real-life examples, and sharing knowledge and experiences (Chlosta, 2012), such as how to solve problems or make decisions (Abbasiachavari & Moritz, 2021). Individuals acquire and develop skills and attain the necessary knowledge to embark on entrepreneurship through the process of observing and comparing their own circumstance and experiences with those of established role model (Scherer et al., 1989; Bosma et al., 2012). Role model are acknowledged as influential sources for conveying values, attitudes, and modes of thinking and behavior (Bandura, 1986). By observing a positive role model, people can feel inspired and motivated to adopt similar behaviors (Laviolette et al., 2011; BarNir et al., 2011; Zapkau et al., 2017) or decision-making approaches. We argue that role model can facilitate individuals' entrepreneurial intention by informing their behavioral or decision-making patterns.

Effectuation is a logical approach to making decisions and a behavioral mode for entrepreneurs in uncertain environments (Sarasvathy, 2001). It consists of four dimensions: experimentation, affordable loss, pre-commitment, and flexibility (Chandler et al., 2011). Experimentation emphasizes controlling the future rather than predicting it and experimenting with employing numerous tactics within the constraints of limited resources. The principle of affordable loss involves making decisions based on the level of acceptable loss or downside risk. Pre-commitment emphasizes partnership and cooperation with stakeholders who are prepared to allocate resources to the collaborative effort. Flexibility involves being open to the unexpected, viewing surprises as potential sources of opportunity, and actively making changes to pursue new opportunities. Effectuation enhances individuals' entrepreneurial intentions by empowering them to take actions, reducing perceived risk, promoting creativity and resourcefulness, and providing a supportive social network. In turn, these factors combine to make entrepreneurship a more attractive and viable path, increasing an individual's motivation to pursue the path of entrepreneurship (Bird, 1988; Bird, 1992;

Krueger, 1993; Neneh, 2020).

Firstly, role model offers invaluable informal guidance, market insights, and illuminate success factors crucial in running a business (Scherer et al., 1989; Parker, 2004; Ozgen & Baron, 2007). Notably, successful entrepreneurs often attribute their achievements partially to their inclination towards experimentation and an open attitude towards trying new approaches. Observing the paths of influential figures and comprehending the role of experimentation in their success encourages individuals to adopt similar approaches (Carr & Sequeira, 2007; Bosma et al., 2012). This orientation toward experimentation stimulates creative problem-solving, idea generation, and the willingness to take risks to achieve entrepreneurial objectives. Embracing challenges and uncertainties through this iterative process of experimentation leads to effective solutions and stronger market validation, further nurturing entrepreneurial intention.

Secondly, controlling risk is an important competency for entrepreneurs. Successful entrepreneurial exemplars are usually individuals who take risks and embrace innovation (Dew et al., 2009; Garonne & Davidsson, 2010). Even the failures of those entrepreneurial exemplars provide individuals with a reference point for avoiding unnecessary losses (Minniti & Bygrave, 2001) and allow them to realize that calculated risks can lead to great rewards when kept within manageable limits. When an individual has a greater sense of control over their risk by learning from exemplary cases, they are more likely to feel self-assured and equipped to pursue their own ideas and goals, and this confidence helps to fuel their entrepreneurial intentions as they are less inclined to be restrained by apprehension of failure or uncertainty.

Thirdly, entrepreneurs often grapple with resource scarcity during the initial phases of their ventures (Zahra, 2021). However, the viability and expansion of a business hinge upon diverse resources supplied by the external milieu (Olson et al., 2018), encompassing financial backing from shareholders, customer insights, and supplier support. Exemplary entrepreneurial figures adeptly steer their enterprises by fostering close collaborations with customers, suppliers, and allied partners. This collaborative ethos not only serves as an inspiration for emulation but also fosters the cultivation of a collaborative mindset among others. When individuals commit to others or publicly document their objectives, a sense of accountability emerges, aiding in maintaining focus and dedication toward their goals. This sense of accountability also fuels intrinsic motivation and garners support from their surroundings, thereby reinforcing their resolve to initiate a business venture.

Fourth, entrepreneurs often face various challenges and obstacles on the path to success. Observing entrepreneurial role model can offer valuable insights into individuals' managerial skills, their ability to effectively organize a company, and their capacity to take advantage of business opportunities (Zozimo et al., 2017). This includes understanding how tasks are accomplished, how resources are accessed, and identifying key factors that contribute to both success and failure (Scherer et al., 1989). Inspiring role model demonstrates that an individual could overcome the uncertainty and risks associated with specific tasks. The example serves as a source of belief and motivation for others facing similar challenges. (Lockwood & Kunda, 1997; Marx et al., 2005) and recognize the importance of being adaptable to unexpected situations, market changes,

and emerging opportunities. As individuals become more flexible, they are more inclined to be receptive to innovative concepts, approaches, or market opportunities, resulting in the creation of innovative products or services that distinguish themselves in the competitive landscape. This can further enhance individuals' entrepreneurial aspirations, as they are more inclined to experience genuine passion and enthusiasm for their business concepts. Therefore, entrepreneurial role model can enhance individual effectuation before influencing entrepreneurial intention. Thus, we proposed the proposition as follows:

Hypothesis 2: Effectuation mediates the relationship between entrepreneurial role model and entrepreneurial intention.

2.5 Literature Review of Goal Orientation

2.5.1 The Concept of Goal Orientation

The idea of goal orientation was first recognized in an experiment conducted by Diener & Dweck (1978, 1980), which investigated adolescents' behavioral styles and task completion. This study revealed that distinct response patterns in task completion among children were attributable to their differing goals. With the development of this theoretical concept, scholars began exploring this theory in depth. Initially, goal orientation was defined as a situational inclination influencing how individuals complete tasks (Nicholls, 1984; Dweck, 1986; Ames, 1992). It elucidates not the specific goals individuals seek to achieve, but rather the underlying motivations and reasons driving goal pursuit (known as overarching goals) and how individuals advance towards these goals (Anderman & Maehr, 1994). Thus, it embodies people's responses within a given context, noticeably impacts the way individuals perceive and understand various occurrences, as well as plays a key role in shaping their thoughts, feelings, and actions (Elliot & Dweck, 1988; Ames, 1992). Consequently, early research on goal orientation revolved around individuals' intentions to act within a specific situation. However, as research evolved, it became evident that goal orientation has a more enduring and long-term impact on individuals. This study focuses on the significance of goal orientation across various contexts and aligns with Dweck's (1986) definition of goal orientation as an individual's situational inclination to achieve a task. This includes the underlying motivations and rationales that propel goal pursuit and the individual's advancement towards those goals.

Goal orientation is commonly categorized into two types: learning goal orientation and performance goal orientation (Dweck, 1986). Learning goal orientation pertains to an individual's natural inclination to enhance their abilities, emphasizing learning (Dweck, 1986), comprehension, skill development, and mastering information. Individuals who possess a learning goal orientation generally believe in the potential for developing their abilities (Dweck, 1986). Their pursuit of goals extends beyond immediate tasks, encompassing longer-term aspirations. Research into learning goal orientation has primarily concentrated on the internal psychological realm, linking it to favorable results such as improved self-efficacy, resilience, inclination towards challenges, self-regulated learning, positive emotions, and overall wellness (Dweck & Leggett, 1988; Urdan, 1997; Elliot, 1999; Pintrich, 2000).

In contrast, performance goal orientation is centered on showcasing competence (Dweck, 1986). Individuals driven by a performance goal orientation are highly concerned with how others perceive their capabilities. Their primary aim is to present themselves as highly competent while actively avoiding any display of weaknesses (Dweck, 1986). Elliot (1997, 1999) highlighted there are inconsistencies in the correlation between performance goal orientations and adaptive models might result from a failure to distinguish between two distinct orientations: performance-prove and performance-avoidance. Elliot (1997) emphasized that these two orientations represent completely different motivational perspectives. With a focus on proving their performance, individuals strive to demonstrate their high levels of competence through proactive behavior, while those with a performance-avoidant mindset aim to avoid showcasing lower competence by evading certain tasks. Haynie & Shepherd (2009) proposed that goal orientation signifies an individual's capacity to interpret the environment concerning various personal, social, and organizational goals, thereby delineating the extent of environmental change orientation.

In summary, the three primary dimensions of goal orientation encompass learning goal orientation, aimed at developing one's competencies; performance-prove goal orientation, focused on demonstrating high competence; and performance-avoidance goal orientation, centered on avoiding the display of lower competence. Table 7 provides comparison of three dimension of goal orientation based on the study of Elliot (1997, 1999).

Table 7 Comparison of Three Dimensions of Goal Orientation

	Learning goal orientation	Performance-prove goal orientation	Performance-avoidance goal orientation
Task Selection	Choosing tasks that have the potential to introduce errors in order to enhance one's abilities.	Sacrificing learning opportunities and choose moderately challenging tasks to showcase one's abilities.	Sacrificing learning opportunities by choosing easy tasks to avoid showcasing one's weaknesses.
Facing Difficulty	Effectively solving difficulties	Feeling anxious and experiencing other maladaptive symptoms related to the difficulties.	Scaping and shrinking in the face of difficulties
Attitude to external evaluation	Not caring about external evaluations	Caring about external evaluations	Caring about external evaluations
Cognition of abilities	Holding an implicit theoretical perspective on the controllable personal abilities.	Holding the view of "innate and fixed ability" entity theory	Holding the view of "innate and fixed ability" entity theory

2.5.2 Research Dimensions of Goal Orientation

In the early stages, scholarly attention primarily centered on the antecedents of goal orientation (Payne, 2007). However, there has been an increasing interest among scholars in gaining a deeper understanding the mechanisms underlying goal orientation in recent years. This paper aims to comprehensively analyze and delineate both the antecedent and outcome variables associated with goal orientation.

Research on antecedent variables

Cognitive ability has been identified as an antecedent of goal orientation. In a comparative study between achievement-oriented and learning-oriented students, Eison (1979) discovered that students with a goal-oriented approach tended to exhibit higher cognitive abilities. Dweck (1986) proposed that an individual's implicit theory of intelligence significantly influences their choice of goal orientation. Those who believe in the malleability of intelligence and personal abilities, and their enhancement through study and practice, are inclined toward a learning goal orientation. Conversely, individuals perceiving personal abilities as innate and unchangeable through effort are more inclined to embrace a performance goal orientation. Elliot & Church (1997) suggested that achievement motivation, competence expectancy, and fear of failure correspond to the three dimensions of goal orientation: learning, performance-prove, and performance-avoidance, respectively.

Personality traits serve as catalysts for motivational factors. According to Hough (1992), extraversion and conscientiousness, which are associated with achieving success, are positively correlated with learning and performance-prove goal orientations. Elliott & Church (1997) also proposed a favorable connection between conscientiousness and learning goal orientation, while noting that emotional stability exhibited a negative relationship with performance-avoidance goal orientation. Additionally, self-esteem is intricately tied to goal achievement, exerting influence on individual goal motivation (Payne et al., 2007).

Research on outcome variables

Goal orientation significantly influences self-goal setting. Specifically, learning goal orientation and performance-prove goal orientation show a positive association with self-goal setting, while performance-avoidance goal orientation exhibits a negative relationship (Payne et al., 2007). Different goal orientations wield diverse effects on learning strategies. Studies indicate that students influenced by learning goal orientations employ more effective learning strategies (Ames & Archer, 1988; Dweck & Elliott, 1988). Conversely, research suggests that performance goal orientation negatively correlates with individual learning strategies, suggesting a focus on demonstrating competence over the learning process (Ford et al., 1998). Moreover, goal orientation shapes an individual's acquisition of feedback. Learning-oriented individuals tend to actively seek feedback (VandeWalle & Cummings, 1997; Payne, 2007), whereas those with performance-prove and performance-avoidant goal orientations exhibit a reluctance to seek feedback (VandeWalle & Cummings, 1997).

The interplay between goal orientation and creativity has garnered substantial attention recently. Studies by Hirst et al. (2009, 2011) indicate that goal orientation further

influences employee creativity by shaping team learning behaviors. Ultimately, goal orientation significantly impacts performance: Learning goal orientation encourages higher goal setting (Sujan et al., 1994), reflecting an intrinsic desire to enhance self-efficacy, while performance goal orientation aligns with superior academic performance (DeBicki et al., 2016).

2.5.3 Recent Studies and Trends of Goal Orientation

In the realm of public administration research, several studies shed light on goal orientation's influential role in various work-related outcomes. For instance, a survey of 521 local employees in Spain discovered that learning goal orientation significantly moderated the influence of structural empowerment on employees' psychological empowerment (García-Juan et al., 2019). Similarly, among 735 service and manufacturing employees in Pakistan, learning goal orientation was found to mitigate the adverse effects of abusive supervision on behaviors related to sharing knowledge (Islam et al., 2021). Another survey involving over 400 employees with a learning goal orientation are more likely to participate in knowledge-sharing activities post experiencing psychological empowerment (Khatoon et al., 2022). Regarding decision-making approaches, research indicates that learning goal orientation correlates with a stronger preference for effectuation (Yoon & Cho, 2021).

At both individual and team levels, performance-avoidance goal orientation negatively correlates with crucial engagement metrics like reflective learning and higher-order learning (Miller et al., 2021). Moreover, goal orientation significantly impacts students' problem-solving abilities (Liu & Liu, 2020). Studies focusing on workplace goal orientation validity unveiled that learning goal orientation positively associates with learning and performance outcomes in a work environment (Theis & Bipp, 2019). Additionally, the nature of performance feedback has a significant impact on the connection between performance-prove goal orientation and information or knowledge hiding behavior. When feedback centers more on individual performance, performance-prove goal orientation positively links with information hiding. Conversely, when feedback emphasizes team performance, performance-prove goal orientation negatively correlates with knowledge hiding (Zhu et al., 2019). Furthermore, research highlights that goal orientation affects stressor-stressor-appraisal relationships: learning goal orientation and performance-prove goal orientation reinforce challenge-stressor-challenge appraisals, while performance-prove goal orientation and performance-avoidance goal orientation reinforce hindrance-stressor-hindrance appraisals, counteracted by learning goal orientation (Ma et al., 2021).

In leadership studies, learning goal orientation emerged as negatively related to abusive supervision. Moreover, the quality of the relationship between a leader and their team members has been found to intervene in the connection between the three dimensions of goal orientation and abusive supervision (Seo et al., 2023). Additionally, leader performance-avoidance goal orientation has been shown to have a negative correlation with perceptions of ethical leadership and a positive correlation with unethical behavior among employees. It is noteworthy that the positive indirect impact of a leader's performance-avoidance goal orientation on employee unethical behavior, via perceptions of ethical leadership, is lessened when leaders exhibit higher levels of learning goal orientation (Marquardt et al., 2021).

Overall, this section presents the front-end influences and back-end outcome variables of goal orientation. In recent years, goal orientation has garnered increasing attention from the management community, with a particular focus on relating it to managers and entrepreneurs. This study aims to explore the impact of goal orientation on the relationship between entrepreneurial role model and entrepreneurial effectual decision logics.

2.5.4 The Moderating Role of Goal Orientation

Goal orientation has a substantial impact on the way individuals pursue and attain success, shaping their behavioral motivations and responses in such contexts (Dweck & Leggett, 1988), impacting attention and effort regulation (Uy et al., 2017). Typically, there are three goal orientations: learning, performance-prove, and performance-avoidance (VandeWalle, 1997).

First, individuals who have a learning goal orientation firmly believe in the potential for their skills to be developed and improved, fostering a mindset that continuously seeks improvement through ongoing learning and practice. This orientation primes them to embrace novelty and remain receptive to new information and experiences. Entrepreneur, navigating the intricate landscape of business, often relies on effectuation principles to navigate uncertainties and hurdles inherent in their pursuits (Perry et al., 2012; Ortega et al., 2017). The entrepreneur possessing a learning goal orientation are predisposed to actively seek out successful entrepreneurial role model, recognizing the value in gleaning insights and wisdom from their experiences (Bosma et al., 2012). Importantly, the individual with this orientation intentionally strive to internalize and emulate the effectual decision-making styles and entrepreneurial behaviors exhibited by the role models.

Second, Performance-prove goal orientation shapes individuals' mindsets to seek external validation and strive to achieve set objectives (Vandewalle, 1997). According to Mehta and Mehta (2018), individuals motivated by performance-prove goals exhibit positive learning behaviors, especially when influenced by external stimuli. Clear and specific goals act as catalysts, motivating individuals to draw inspiration and guidance from entrepreneurial role models. These role models provide concrete examples of success, encouraging individuals to develop committed plans and strategies that translate aspirations into actionable steps. Additionally, goal-oriented individuals demonstrate higher levels of self-regulation and self-efficacy (Dweck & Leggett, 1988; Elliot, 1999). By observing and learning from entrepreneurial role models, these individuals continuously adjust their behaviors to align with their goals. This adaptive approach not only enhances their confidence in overcoming challenges but also strengthens their ability to utilize available resources effectively in the entrepreneurial process. Thus, we propose the following hypothesis:

Hypothesis 3: Goal orientation positively moderates the relationship between entrepreneurial role model and effectuation.

2.6 Literature Review of Entrepreneurial Self-efficacy

2.6.1 The Concept of Entrepreneurial Self-efficacy

The notion of self-efficacy was initially introduced in 1977 by the renowned psychologist Albert Bandura in his elaboration of social cognitive theory. Bandura argued that self-efficacy is "the degree to which an individual is confident that he or she is capable of performing a given task," and that its essence lies in the confidence to perform a given action. An individual's level of self-efficacy affects their perception of how well they can achieve their goals, and in his study of the mechanisms by which self-efficacy affects behavioral outcomes, Gist (1987) suggested that the greater the level of self-efficacy, the better the individual's performance as they pursue higher goals, which require a higher level of effort and thus, higher performance levels; and vice versa.

Subsequently, Boyd & Vozikis (1994) introduced the concept of "entrepreneurial self-efficacy" within the realm of entrepreneurship. They defined entrepreneurial self-efficacy as the level of confidence in oneself to effectively contribute to the entrepreneurial process, overcome challenges, and successfully complete a range of entrepreneurial responsibilities. Luthans & Ibrayeva (2006) suggested that entrepreneurial self-efficacy is the self-belief of entrepreneurs in their ability to improve their surroundings and achieve their intended entrepreneurial goals through their knowledge and abilities. Scholars have conducted extensive research on entrepreneurial self-efficacy, and it is widely believed that the level of entrepreneurial self-efficacy plays a crucial role in determining whether an individual will pursue entrepreneurship or not (Townsend et al., 2010). Research topics are related to entrepreneurial self-efficacy of college students (Mollica et al., 2017; Al-Jubari et al., 2019; Burnette et al., 2020), entrepreneurial self-efficacy of employees (Globocnik & Salomo, 2015; Rabl et al., 2022), and so on. Despite differing contexts and factors influencing entrepreneurial self-efficacy in various studies, they all stress the importance of entrepreneurial self-efficacy as the foundation of an individual's confidence and belief in their capability to successfully complete entrepreneurial endeavors and achieve entrepreneurial goals, among other things. Thus, Entrepreneurial self-efficacy is regarded as an individual's perception of themselves, which can impact their psychological well-being and decision-making process, motivating them to participate in entrepreneurial activities. This study delves into the influence of entrepreneurial self-efficacy on the correlation between entrepreneurial role modeling and effectual thinking. We posit that the conceptualization of self-efficacy proposed by Boyd & Vozikis (1994) resonates with the central theme of our research. According to their definition, entrepreneurial self-efficacy refers to an individual's belief in their ability to make valuable contributions to the entrepreneurial process, surmount obstacles, and achieve entrepreneurial success.

2.6.2 Research Dimensions of Entrepreneurial Self-efficacy

Research focusing on antecedent variables reveals the significant impact of various factors—personal traits, prior experiences, and environmental influences—on entrepreneurial self-efficacy. According to Bandura (1997), a person's belief in their abilities and level of confidence, exerting a substantial influence on entrepreneurial success. Personal attributes like self-confidence, a propensity for risk-taking, and innovation, coupled with positive reflections on past experiences, contribute to the

enhancement of entrepreneurial self-efficacy (Ginges et al., 2011). Additionally, prior entrepreneurial experience, accurate risk assessment, and the acquisition of pertinent entrepreneurial knowledge positively correlate with self-efficacy (Zhao et al., 2005).

Entrepreneurial passion has been recognized as a crucial factor significantly associated with entrepreneurial self-efficacy (Cardon & Krik, 2015). Examining the external environment, elements such as policy frameworks, market conditions, and the overall entrepreneurial climate also shape entrepreneurs' self-efficacy. A supportive environment tends to bolster individuals' perceptions of their entrepreneurial self-efficacy (Hmieleski & Corbett, 2008). Furthermore, social and informational support systems play a pivotal role in enhancing individuals' confidence to navigate challenges, thereby amplifying their entrepreneurial self-efficacy (Cohen & Wills, 1985; Baron, 2008). Additionally, entrepreneurship education contributes to this domain by imparting knowledge and skills, instilling confidence, and nurturing belief in entrepreneurial capabilities among students, thus fostering an increase in entrepreneurial self-efficacy (Sun et al., 2017).

Research into outcome variables demonstrates the significant impact of self-efficacy on a range of entrepreneurial factors. Self-efficacy has been shown to foster innovative behavior among individuals (Globocnik & Salomo, 2015) and plays a pivotal role in influencing entrepreneurial aspirations (Boyd & Vozikis, 1994; Zhao et al., 2005). A comprehensive survey involving over 1,400 German entrepreneurs highlighted the significant and beneficial influence of strong self-efficacy on the survival and revenue of new business startups. (Caliendo et al., 2023). Individuals with high levels of entrepreneurial self-efficacy demonstrate greater initiative in identifying entrepreneurial opportunities (Ozgen & Baron, 2007). Moreover, entrepreneurial self-efficacy serves as a significant predictor of an individual's inclination towards developing entrepreneurial behaviors (Noble et al., 1999) and sustaining focused goal persistence (Halper, 2016).

Entrepreneurs who possess elevated levels of entrepreneurial self-efficacy demonstrate greater optimism and confidence in their entrepreneurial engagements, leading to more favorable entrepreneurial decisions. Their ventures often experience enhanced business performance and growth, benefiting significantly from their elevated self-efficacy (Forbes, 2005). As a psycho-cognitive factor, entrepreneurial self-efficacy significantly contributes to business expansion (Miao, 2017) and augments overall performance outcomes (Hmieleski & Corbett, 2008).

2.6.3 Recent Studies and Trends of Entrepreneurial Self-efficacy

In recent years, scholarly research has continued to delve into the antecedents and outcome variables associated with entrepreneurial self-efficacy. Employing an experimental approach, Burnette et al. (2020) demonstrated that students who underwent a growth mindset intervention displayed elevated entrepreneurial self-efficacy and greater task persistence in their major classroom projects compared to the control group. In a study involving a proactive personality, Li et al. (2020) emphasized the substantial positive influence of entrepreneurial passion on one's belief in their ability to succeed as an entrepreneur. Meanwhile, Wardana et al. (2020) delved into the association between education focused on entrepreneurship and the entrepreneurial

mindset of students. Their study concluded that this type of education had a noteworthy impact on students' belief in their entrepreneurial capabilities, their attitudes, and their overall mindset toward entrepreneurship.

Liu et al. (2019) conducted a study to analyze the impact of entrepreneurship education and self-efficacy on the entrepreneurial intentions of college students. The researchers posited that the self-efficacy of college students in entrepreneurship plays a significant role in shaping their attitudes and intentions towards entrepreneurship. Furthermore, Nowiński & Haddoud (2019) pointed out that a combination of role modeling, entrepreneurial attitude, and self-efficacy can bolster students' intentions to pursue entrepreneurship. Building on this, Elnadi & Gheith (2021) proposed that students' perception of entrepreneurial ecosystems has a direct influence on their entrepreneurial intentions, both through direct pathways and indirect pathways mediated by entrepreneurial self-efficacy. Moreover, Schmutzler & Diaz-Serrano (2019) delved into the influence of proximal and distal socio-cultural environments on the relationship between entrepreneurial self-efficacy and intentions. Their findings revealed that while knowledge of emerging entrepreneurs stimulates entrepreneurial intentions, this effect is less pronounced among individuals with high self-efficacy in entrepreneurship, in contrast to those lacking confidence in successfully launching a business.

Moreover, McGee & Peterson (2019) gathered data from multiple survey waves and proposed that founders or managers with entrepreneurial self-efficacy may initially enhance the performance of early-stage companies, but this advantage diminishes over time. Their findings also support the notion that entrepreneurial self-efficacy plays a beneficial role in moderating the relationship between entrepreneurial leadership and employee innovation behavior. Finally, Li et al. (2020) presented an empirically supported comprehensive model for fostering employee innovation behavior in entrepreneurial high-tech SMEs.

Research has investigated the effects of personal traits, psychological factors, and prior experiences on entrepreneurial self-efficacy, confirming its role in shaping entrepreneurial intentions and behaviors. However, the influence of entrepreneurial self-efficacy on individual entrepreneurial thinking, particularly in managing uncertainty and making effective decisions, has been overlooked, leaving room for further exploration in this study.

2.6.4 The Moderating Role of Entrepreneurial Self-efficacy

Entrepreneurial self-efficacy, encapsulating entrepreneurs' confidence in tackling entrepreneurial tasks (Boyd & Vozikis, 1994), stands as a cornerstone trait in their arsenal (Chen et al., 1998). This confidence acts as a catalyst, allowing entrepreneurs to navigate the complexities of environmental uncertainty by discerning opportunities amid challenges (Dutton & Jackson, 1987). Notably, high levels of entrepreneurial self-efficacy furnish entrepreneurs with psychological resilience, significantly reducing their fear of failure (Bullough et al., 2014; Neneh, 2022). Such confidence translates into adept resource utilization, a remarkable ability to adapt to change, informed decision-making, and a proclivity to share information while traversing the entrepreneurial landscape (Dutton & Jackson, 1987; Chen et al., 1998). Moreover, it fosters a higher degree of risk tolerance, encouraging the utilization of available

resources and support systems while implementing creative solutions to pursue entrepreneurial goals despite inherent risks.

Successful entrepreneurs often attribute their achievements partially to their inclination towards an open attitude towards trying new approaches. The individual with high self-efficacy, when inspired by entrepreneurial role model, is more likely to internalize the mindset and thinking patterns, demonstrate greater initiative in identifying entrepreneurial opportunities (Ozgen & Baron, 2007). Exposure to such influential figures enables individuals to cultivate a more adaptable and versatile strategic mindset, transforming challenges into opportunities for growth rather than insurmountable obstacles. Equipped with high self-efficacy, the individual demonstrates persistence and adaptability when faced with hurdles, drawing inspiration from the experiences of the role model. This predisposition encourages him / her to perceive uncertainties as openings for innovation rather than threats (Engel et al., 2014).

Furthermore, the individual with elevated self-efficacy is more likely to translate the inspiration and guidance provided by the role model into actionable intention for entrepreneurship. This innate willingness to explore creative solutions amidst perceived risks aligns closely with the fundamental principles of effectuation, as proposed by Culbertson et al. (2010). We thus pose the proposition:

Hypothesis 4: Entrepreneurial Self-efficacy positively moderates the relationship between entrepreneurial role model and effectuation.

2.7 Literature Review of Entrepreneurial Resilience

2.7.1 The Concept of Entrepreneurial Resilience

Resilience originates from the Latin word "resilire," which was initially used in the field of physics to describe the capacity of an object to regain its original shape after being impacted by external forces (Rose, 2007; Martin, 2012). In the 1970s, scholars in the positive psychology field started to shift their attention towards the role of resilience in personal growth. They observed that children who had experienced prolonged adversity but still exhibited normal behavior demonstrated a characteristic of emotional stability, which they identified as "resilience" as a protective factor for both physical and mental development (Murphy, 1974).

Entrepreneurial resilience combines the concept of resilience with entrepreneurial activity. In the 1980s, Klundert examined whether entrepreneurial "resilience" had an impact on economic growth but did not provide a clear definition of resilience. Chen (2005) was among the early proponents of the concept of entrepreneurial resilience as she explored why some entrepreneurial failures can bounce back while others are not. She defines entrepreneurial resilience as the process through which entrepreneurial failures overcome the negative effects of failure and examine the underlying causes of failure to start a new venture. Welsh (2014) likens entrepreneurial resilience to the experience of rebounding or recovering from adversity experienced by individuals, teams, firms, societies, businesses, ecosystems, or subsystems, in any spatial or temporal dimension. This definition broadens the scope of the concept and brings in a

temporal or spatial dimension that expands its understanding. Awotoye & Singh (2017) view resilience as a capability and propose that entrepreneurial resilience is the ability to overcome high-impact entrepreneurial challenges and to maintain the entrepreneurial process in the face of adversity and unexpected outcomes. This study considers entrepreneurial resilience can be defined as the capacity to overcome significant obstacles and sustain the entrepreneurial journey during adversity and unforeseen circumstances. This research examines entrepreneurial resilience as the skill and methodology employed by entrepreneurs to skillfully navigate and adjust to shifts, adversities, and disruptions during the entrepreneurial process. Hence, we adhere to Chen's (2005) definition of entrepreneurial resilience as the process through which entrepreneurs bounce back from failure, mitigate its adverse impacts, and analyze the underlying reasons for failure to embark on a new venture.

2.7.2 Research Dimension of Entrepreneurial Resilience

According to Duening (2010), resilience stands as a cornerstone within the 'Big Five' of entrepreneurship. It's an outcome derived from the interplay between individuals and their environment, empowering individuals to pursue happiness while safeguarding themselves against adversities (Hedner et al., 2011). Hence, the resilience observed in entrepreneurship isn't solely reliant on an entrepreneur's internal characteristics; rather, it's equally shaped by interpersonal dynamics and the environmental context.

Research on antecedent variables

Intra-individual factors mainly include three aspects: personal characteristics, motivation, and human capital. Personal characteristics such as self-efficacy enable entrepreneurs to believe in their abilities and expect positive outcomes even after experiencing failure, leading to rapid recovery (Pollack et al., 2012; Bullough & Renkon, 2013). Optimists are good at perceiving a bright future and make positive attributions (Hmieleski et al., 2015), while the desire to start over and create value facilitates entrepreneurs' recovery from past experiences (Scherer et al., 2015). Flexibility, the capability to swiftly adjust and adapt to changes, also has positive explanatory power for entrepreneurial resilience (Pollack et al., 2012).

In addition to personal traits, motivation is an important factor influencing individual behavior. Intrinsic motivation can propel business owners to persevere through setbacks, launch new ventures, and realize greater success (Yamakawa et al., 2015). Additionally, individual attributes such as skills, educational background, and previous entrepreneurial endeavors are pivotal in cultivating and strengthening entrepreneurial resilience. Entrepreneurs with higher human capital can form correct perceptions and find solutions based on their own judgment of knowledge and experience when encountering adversity, and thus are able to recover from adversity and persist in entrepreneurship more quickly (Williams & Shepherd, 2016). Higher levels of education provide stronger social connections, more support, and higher entrepreneurial resilience (Sun et al., 2011; Simmons et al., 2018). Prior experience in entrepreneurship is also a key factor influencing entrepreneurs to bounce back from failure and achieve entrepreneurial success (Sun et al., 2011; Ayala & Manzanob, 2014; Williams & Shepherd, 2016; Branicki et al., 2017).

Interpersonal factors during the entrepreneurial process, social support from various

sources empowers entrepreneurs by offering emotional support, encouragement, access to crucial business insights, financial resources, and valuable social connections, making them more resilient in the face of challenges (Chen, 2005; Singh & Pavlovich, 2011; Herbsepich, 2014; Scherer et al., 2015; Bocken, 2015; Wing-Fai, 2016; Khelil, 2016). For example, after entrepreneur's experience failure, their spouses (e.g., wives) become their moral support and encourage them to face the future with a positive attitude (Chen, 2005; Singh & Pavlovich, 2011; Scherer et al., 2015; Yang & Danes, 2015).

Environmental factors Environmental factors can also have an impact on entrepreneurs' entrepreneurial resilience. Simmons et al. (2018) empirically analyzed and concluded that public stigma and fear of business failure positively moderates re-entry into entrepreneurship for entrepreneurs of different genders. Some of the entrepreneurs, after experiencing a crisis, can access various forms of support from their local government or councils, including action support (e.g., assistance with cleaning), emotional support, financial assistance (such as relief for business interests, one-time payments, and loans), and information (Doern, 2016), which support facilitates post-crisis recovery and adaptation.

Research on outcome variables

Entrepreneurial resilience encapsulates an entrepreneur's ability to overcome adversity or setbacks, influencing both the individual entrepreneur and their organization. At the individual level, it crucially determines entrepreneurial and re-entrepreneurial intentions. Bullough et al. (2014) examined how resilience positively affects entrepreneurial intentions and moderates the relationship between entrepreneurial self-efficacy and intentions during adversity. Monllor & Murphy (2017) likened resilience to a protective shield that safeguards entrepreneurial intentions from the negative impacts of failure, subsequently enhancing them. Moreover, resilience aids entrepreneurs in coping effectively with entrepreneurial failures. Hayward et al. (2010) argued that entrepreneurs who exhibit resilience and possess greater levels of self-confidence are more inclined to pursue new business ventures following a setback, contributing to entrepreneurial success, understanding the significance of entrepreneurial resilience is crucial in distinguishing between triumph and defeat in the entrepreneurial domain (Ayala & Manzano, 2014). Additionally, Fisher et al. (2016) discovered that entrepreneurs exhibit higher resilience levels compared to the general population, significantly impacting their enthusiasm and success in entrepreneurship.

At the organizational level, entrepreneurial resilience assumes a pivotal role in an enterprise's ability to navigate high-intensity challenges, ensuring its survival and growth. Awotoye & Singh (2017) suggested that entrepreneurial resilience moderates the impact of high-intensity challenges on firm performance, driven by analyses of entrepreneurial cognitive processes. Ayala & Manzano (2014) identified three dimensions of entrepreneurial resilience - perseverance, resourcefulness, and optimism - significantly and positively associated with firm success, particularly in terms of growth. Similarly, Fatoki (2018) observed that entrepreneurial resilience not only forecasts individual entrepreneurs' success but also significantly influences the triumph of small and medium-sized enterprises.

2.7.3 Recent Studies and Trends of Entrepreneurial Resilience

Recent research has increasingly delved into understanding the multidimensional impact of entrepreneurial resilience on both individuals and firms. At the individual level, an investigation into the impact of early life challenges on the professional achievements of 573 American business owners highlighted that resilience played a more significant role for less successful entrepreneurs (Yu et al., 2022). Another investigation examining the impact of resilience and self-efficacy on entrepreneurial intentions revealed that the ability to thrive in adverse situations - resilience - had notable importance, especially in challenging circumstances (Renko et al., 2021). Additionally, an investigation into the correlation between personality archetypes and entrepreneurship revealed that resilience has a favorable influence on engaging in self-employment activities (Runst & Thomä, 2023).

At the organizational level, a comprehensive study of 226 Chinese high-tech firms unveiled that failure analysis positively influenced entrepreneurial tenacity. Moreover, it highlighted that the breadth of knowledge enhanced this effect, while the depth of knowledge served as a buffer (Yao et al., 2021). The capability of resilience was also recognized as a second-order or meta capability spanning across different levels including entrepreneurial, organizational, and ecosystem levels (Khurana et al., 2022). A survey encompassing 195 small family business owners revealed that the employee resilience dimension positively impacted performance, particularly when entrepreneurs exhibited strong personal resilience (Santoro et al., 2021). Furthermore, a study exploring entrepreneurial resilience in areas affected by violent protests suggested that social capital significantly influenced entrepreneurs' resilience. Entrepreneurs maintaining strong local community ties and seeking guidance from remote advisors were better equipped to manage conflict and mitigate losses (Dimitriadis, 2021).

The aforementioned studies have demonstrated the varying impact of entrepreneurial resilience on individual career achievement and organizational performance. Specifically, the ability to motivate individuals to grow in the face of adversity and challenges has a positive impact on their entrepreneurial intentions. Entrepreneurial resilience may enable individuals to develop a more flexible mindset to navigate uncertain environments, handle risks more rationally, utilize resources more efficiently, and act promptly by strengthening their ability to cope with failures and challenges. This study focuses on how entrepreneurial resilience can play a moderating role in the relationship between effectuation and entrepreneurial intention.

2.7.4 The Moderating Role of Entrepreneurial Resilience

It has been previously discussed that individuals use effectuation, such as experimentation, affordable loss, flexibility, and pre-commitment, to enhance their entrepreneurial intentions. The choice and use of decision logics result from the interplay of psychological elements, including entrepreneurial drive and cognitive abilities, with the external environment. Entrepreneurial resilience, which is characterized by a tendency to take actions in challenging situations (Bullough et al., 2014), influences an individual's decision logic in uncertain environments (D'andria et al., 2018).

Firstly, high resilience equips individuals with the capacity to navigate stress and

overcome challenges effectively (Awotoye & Singh, 2017). This ability to adapt amidst uncertainty aligns with the foundational tenets of effectuation, which emphasize the continual recalibration of strategies based on responsive market feedback (Pollack et al., 2012). Entrepreneurs with robust resilience demonstrate a notable propensity to pursue their entrepreneurial intentions tenaciously, applying effectual strategies even in the face of formidable hurdles and setbacks. In contrast, individuals with lower resilience may exhibit inclinations to abandon their entrepreneurial pursuits when facing challenges, highlighting the pivotal role of resilience in sustaining and strengthening entrepreneurial intentions (Williams & Shepherd, 2016). Therefore, entrepreneurial resilience not only significantly influences an individual's capacity to rebound from failure but also amplifies their dedication and zeal towards realizing entrepreneurial goals (Honjo & Kato, 2021).

Secondly, resilient individuals exhibit exceptional proficiency in harnessing diverse social resources to overcome challenges (Herbsepich, 2014; Bocken, 2015; Khelil, 2016), aligning seamlessly with the core ethos of effectuation - utilizing existing networks and resources to carve out opportunities. Those endowed with high resilience creatively leverage available resources, methodically exploring multiple pathways to solutions, particularly in adverse conditions, thus reinforcing their entrepreneurial intentions.

Moreover, entrepreneurs fortified with robust resilience inherently possess heightened levels of confidence and self-efficacy (Bullough et al., 2014; Hayward et al., 2010). This profound self-belief empowers them to undertake calculated risks and apply effectual principles assertively in the pursuit of their entrepreneurial objectives, thus enhancing their entrepreneurial intentions.

Lastly, individuals bolstered with high resilience exhibit perseverance even in the face of failure, viewing it as a learning opportunity without wavering in determination or motivation (Chen, 2005). They showcase resilience by being less disheartened by setbacks and demonstrating a greater likelihood to persist resolutely in their entrepreneurial intentions, even in the face of unintended outcomes stemming from their decision-making processes (Monllor & Murphy, 2017). This unwavering resilience ultimately fortifies their resolve to pursue and achieve entrepreneurial goals. Therefore, we propose the following proposition:

Hypothesis 5: Entrepreneurial resilience positively moderates the relationship between effectuation and entrepreneurial intention.

2.8 Literature Review of Personality

2.8.1 The Concept of Personality

Personality is a constantly evolving idea that encompasses the progression and maturation of an individual's psychological makeup, including their responses to and interactions with others. The "Big Five" model of personality, initially proposed by Fiske based on personality structure theory (Fiske, 1949), has gained widespread acceptance in the field of personality psychology (McCrae & Costa, 1985; Mount &

Barrick, 1995; Digman, 1997; Hurtz & Donovan, 2000). The five elements comprising this framework include extraversion, agreeableness, conscientiousness, neuroticism, and openness (Costa & McCrae, 1992). This study adheres to Costa & McCrae's (1992) five-factor model of personality traits, as well as its definition.

Neuroticism reflects an individual's inclination towards experiencing psychological distress (Costa & McCrae, 1992). It is a characteristic that indicates a person's susceptibility to emotional instability and tendency to perceive messages (McCrae & John, 1992). High scorers are distrustful of their peers (Goldberg, 1990) and struggle with regulating their emotions (Judge et al., 2000). Additionally, they often lack self-esteem, self-confidence, and exhibit emotional insecurity (McCrae & Costa, 1992). In contrast, individuals with low neuroticism scores are relatively emotionally stable and are not bothered by negative emotions.

Extraversion is the dimension that encompasses various traits like sociability, activity, and the inclination to feel positive emotions like joy and pleasure (Costa & McCrae, 1992). It reflects the amount and intensity of interpersonal engagements, as well as a penchant for excitement and the capacity to derive pleasure from experiences (McCrae & John, 1992). High scorers are expressive, outgoing, sociable, and confident (Barrick & Mount, 1991). They also exhibit a tendency towards impulsiveness, loquaciousness, high energy, positivity, and enthusiasm (Goldberg, 1990; Bendersky & Shah, 2013). Those with high extroversion scores may seek admiration from their peers and may engage in behaviors to gain social recognition (Grant, 2013; Bleidorn et al., 2018).

Agreeableness characterizes an individual's attitude towards others during their interactions (Costa & McCrae, 1992). High scorers exhibit selfless and helpful attitudes, while those who are low in agreeableness display selfishness, indifference, and aggressiveness (Digman, 1990; Costa & McCrae, 1992). Individuals high in agreeableness show characteristics such as openness, cooperation, consideration, and tolerance in their interactions with others (Bleidorn et al., 2018), and are helpful and empathetic in their work (Judge et al., 2000).

Conscientiousness is a dimension that distinguishes meticulous, organized, and diligent individuals from lax, disorganized, and lackadaisical ones (Costa & McCrae, 1992). High scorers behave in a dedicated and responsible manner in the workplace and are perceived by others as trustworthy (Goldberg, 1990; Halama & Gurnáková, 2014). They also exhibit a quest for achievement, self-discipline, and planned behaviors (Bleidorn et al., 2018), and they are focused on completing their tasks and persevere in the face of challenges (Barrick & Mount, 1993).

Openness refers to a broader constellation of traits. High openness is behaviorally flexible and open-minded in their attitudes and values (Costa & McCrae, 1992). High scorers tend to see themselves as creative, inquisitive, and receptive to exploring new opportunities (Digman, 1990; Berry et al., 2013), and they exhibit an appreciation for art, adventure, and diversity (Costa & McCrae, 1992; Bleidorn et al., 2018).

2.8.2 Research Dimensions of Personality

Prior studies examining the influence of the Big Five personality characteristics on

individual performance and occupational behavior have been extensive, with numerous empirical studies confirming that these traits are significant predictors of factors such as career choice behavior, work values, and career satisfaction (Bui 2017; Sharma & Suri, 2019).

Individuals who exhibit elevated levels of neuroticism are more prone to experiencing difficulties with their social skills, experience anxiety, and have trust issues, leading to heightened work-related stress (Goldberg, 1990; Woo & Ahn, 2015). Research also indicates that neuroticism has a negative impact on employees' career satisfaction (Judge et al., 2013; Semeijn et al., 2020) and job satisfaction (Barrick & Mount, 1991). On the other hand, individuals with heightened levels of extraversion commonly report increased levels of satisfaction and emotional security (Lounsbury et al., 2012), resulting in increased job satisfaction (Judge et al., 2013). Extraversion is also positively correlated with job performance that requires interpersonal skills (Barrick & Mount, 1991; Salgado & Rumbos, 1997).

Agreeableness is considered to be a complex trait (Shaffer & Postlethwaite, 2012), and its relationships with job performance, job satisfaction, and occupational satisfaction have not shown significant correlations (Erdheim et al., 2006; Judge et al., 2013; Sutin et al., 2009; Uppal, 2014). However, conscientiousness has been linked to positive effects on both job satisfaction and job performance (Barrick & Mount, 1991; Judge et al., 2013; Semeijn et al., 2020) and a preference for enterprising and achievement-oriented work environments (Raja et al., 2004). Individuals with conscientiousness are often linked to achieving higher job performance scores (Barrick et al., 2001; Judge, 2013).

Openness is described as a double-edged sword (DeNeve & Cooper, 1998); individuals with high levels of openness actively explore different work styles and gain diverse work experiences, but they may also quickly become bored with routine work styles and content (Judge et al., 2013). While there is a limited correlation between openness dimensions and job satisfaction (Bui, 2017), openness is positively associated with work productivity and optimism towards learning and training opportunities (Barrick & Mount, 1991).

2.8.3 Recent Studies and Trends of Personality

In recent years, there has been a growing fascination with the exploration of the Big Five personality traits across diverse fields. Bleidorn et al. (2022) carried out a study exploring the cyclical nature of these traits, suggesting that while personality traits remain relatively stable in young adulthood, emotional stability tends to increase over one's lifespan. In sociology, Stahlmann et al. (2023) found that individuals demonstrating traits like pleasantness, extraversion, and openness tend to participate more in civic activities, including volunteering. A comprehensive analysis by Zell & Lesick (2022) involving 54 meta-analyses examined the correlation between the Big Five personality traits and general performance. They highlighted a robust correlation between conscientiousness and academic success, while the connections with extraversion and neuroticism exhibited comparatively weaker associations.

The study of the Big Five personality traits in entrepreneurship has garnered

considerable attention. Huarng & Yu (2021) observed distinctive trait variations between chronically successful and transiently successful entrepreneurs, with the former negatively correlated with extraversion and neuroticism and the latter showing a positive correlation. Postigo et al. (2021) conducted a survey involving over 1,150 workers, including 33% entrepreneurs, revealing higher levels of extraversion and emotional stability among entrepreneurs compared to non-entrepreneurial individuals. Khan et al. (2021) further explored the significant impact of all five personality factors on sustainability-oriented entrepreneurial intentions. They emphasized the moderating role of servant leadership in the relationship between intention and extraversion, agreeableness, and neuroticism.

In summary, while a consensus on the impact of personality on entrepreneurial intentions remains elusive, acknowledging various influencing factors like individual growth environment and family education is crucial. Future studies might explore the theory of entrepreneurial decision logic to delve deeper into the role of personality in shaping entrepreneurial intentions.

2.8.4 The Moderating Role of Personality

The Big Five framework encapsulates various personality traits, among which openness, conscientiousness, extraversion, agreeableness, and neuroticism are prominent (Goldberg, 1990). Personality traits significantly influence decision-making, with openness emerging as a crucial predictor of self-employment choices (Chlosta, 2012). Distinguishing entrepreneurs from non-entrepreneurs, prior research underscores the impact of certain personality traits (Zhao & Seibert, 2006). Specifically, openness is regarded as the foremost personality trait in predicting decisions regarding self-employment (Chlosta et al., 2012; Antoncic et al., 2015). Entrepreneurs typically exhibit higher levels of openness compared to their counterparts. Various scholars have argued that individuals with aspirations to initiate their own businesses display greater emotional stability and openness when contrasted with those aiming for traditional employment (Chen et al., 1998; Zhao & Seibert, 2006; Chlosta et al., 2012). Furthermore, extraversion serves as a critical factor in distinguishing entrepreneurs from non-entrepreneurs (Postigo et al., 2021; Khan et al., 2021), as individuals with low extraversion scores are less likely to embark on entrepreneurial paths (Antoncic et al., 2015; Mei et al., 2017), whereas those with extroverted tendencies exhibit a greater inclination toward entrepreneurial activities, such as initiating new ventures (Leutner et al., 2014). Entrepreneurs also tend to demonstrate higher levels of emotional stability and extraversion in comparison to non-entrepreneurs (Costa & McCrae, 1992; Postigo et al., 2021). Our focus is on examining the traits of openness and extraversion, as numerous research studies have consistently shown that these characteristics significantly influence individuals' decisions to pursue self-employment (Shane et al., 2010; Schmitt-Rodermund, 2004; Ismail et al., 2009; Brandstätter, 2011; Antoncic et al., 2015; Tran & Von Korflesch, 2016). Conversely, the influence of other personality variables remains unclear, and their influence on self-employment decisions is debatable (Gartner, 1988; Rauch & Frese, 2007; Antoncic et al., 2015).

Openness, characterized by creativity and non-conformity (Costa & McCrae, 1992; Zhao & Seibert, 2006), embodies propensity to challenge conventional norms and embrace innovative concepts (Roccas et al., 2002). This is in harmony with the essence

of effectuation, which champions creative problem-solving using existing resources and networks (Sarasvathy, 2001; Sarasvathy, 2008). Openness fosters adaptive behavior and innovative thinking, encouraging individuals to be imaginative and flexible in their approaches to problem-solving (Brockner et al., 2004; Ciavarella et al., 2004; Slavec et al., 2017). Unbound by rigid plans, individuals with high openness demonstrate a propensity for entrepreneurial motivation and change (Zhao & Seibert, 2006), fostering unique business concepts that drive entrepreneurial intentions.

Extraversion, denoting assertiveness, sociability, and enthusiasm in social settings (Costa & McCrae, 1992), corresponds closely to the collaborative aspect of effectuation (Sarasvathy, 2008). Effectuation emphasizes networking and stakeholder engagement to co-create opportunities. Extraverted individuals exhibit greater social adeptness and are adept at building relationships (Barrick & Mount, 1991; Zhang et al., 2009), possessing the social skills crucial for persuading stakeholders like venture capitalists and customers (Rauch & Frese, 2000; Shane, 2003; Zhang et al., 2009). Through effective networking, extraverted individuals identify and leverage entrepreneurial opportunities, thereby amplifying their entrepreneurial intentions. Thus, we propose:

Hypothesis 6a: Openness positively moderates the relationship between effectuation and entrepreneurial intention.

Hypothesis 6b: Extraversion positively moderates the relationship between effectuation and entrepreneurial intention.

2.9 Conceptual Model and Hypotheses Summary

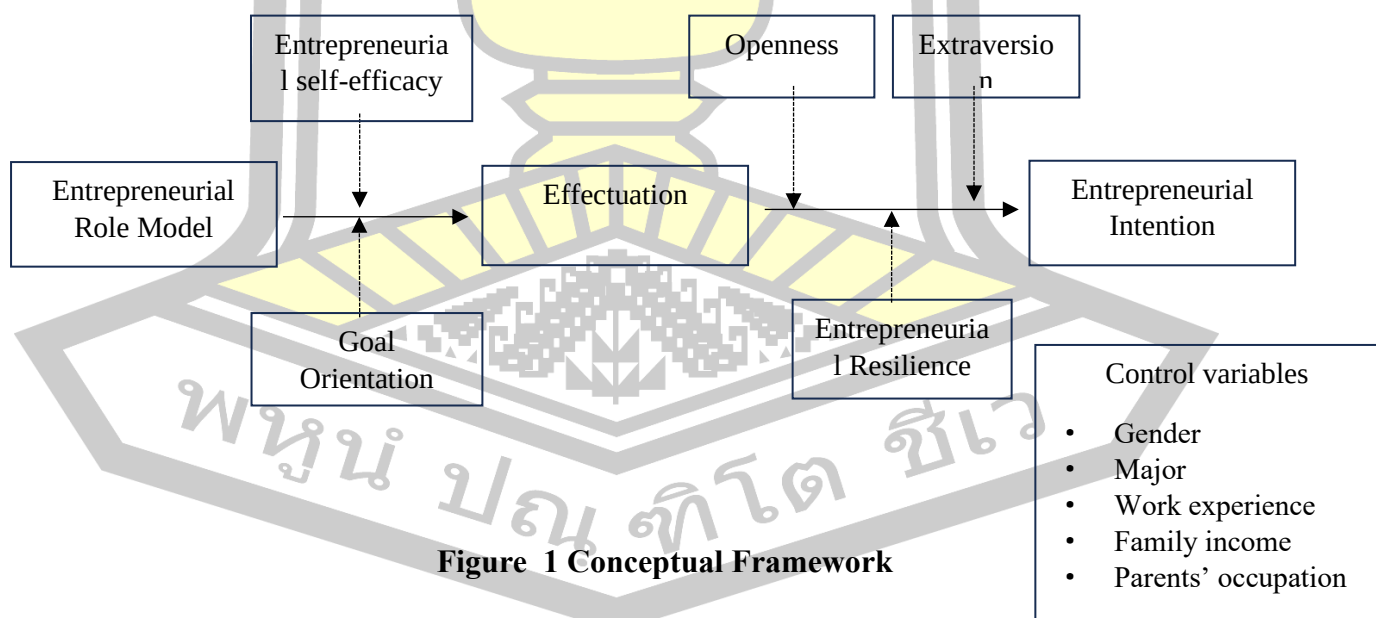


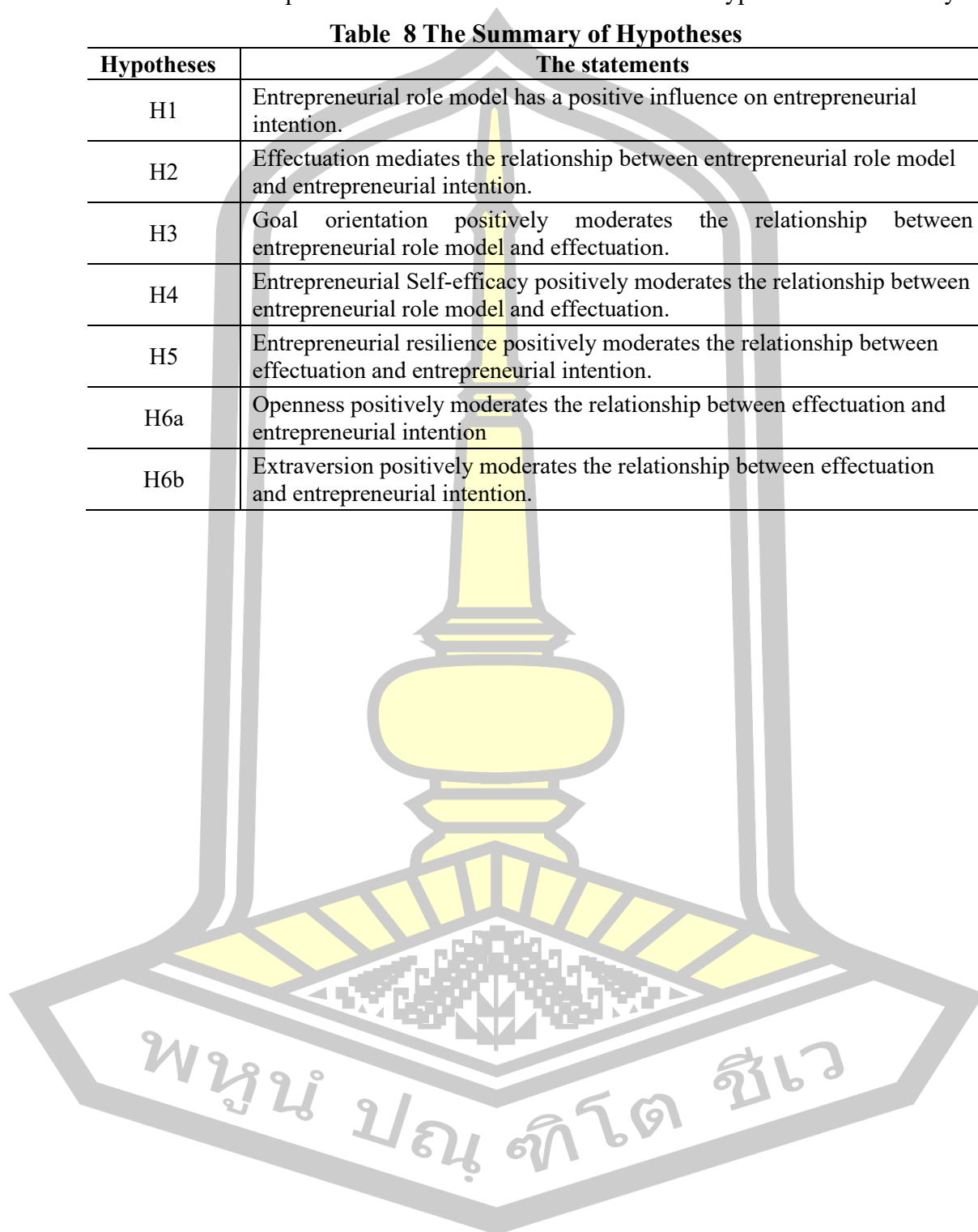
Figure 1 Conceptual Framework

Based on the literature review and hypotheses formulated previously, this research proposes a conceptual model for empirically investigating the topic “The effect of entrepreneurial role model and effectuation on entrepreneurial intention” as shown in

Figure 1. This research proposes 7 hypotheses for testing of the relationship among constructs in conceptual model. Table 8 has shown research hypotheses in summary.

Table 8 The Summary of Hypotheses

Hypotheses	The statements
H1	Entrepreneurial role model has a positive influence on entrepreneurial intention.
H2	Effectuation mediates the relationship between entrepreneurial role model and entrepreneurial intention.
H3	Goal orientation positively moderates the relationship between entrepreneurial role model and effectuation.
H4	Entrepreneurial Self-efficacy positively moderates the relationship between entrepreneurial role model and effectuation.
H5	Entrepreneurial resilience positively moderates the relationship between effectuation and entrepreneurial intention.
H6a	Openness positively moderates the relationship between effectuation and entrepreneurial intention
H6b	Extraversion positively moderates the relationship between effectuation and entrepreneurial intention.



Chapter 3 Empirical Research Design and Data Analysis

To ensure the validity of the research model and hypotheses presented in the previous chapter, this chapter first identifies the research subjects and sampling methods. It then explains the design rules and measurement scales of the questionnaire used in the study, followed by an introduction to the overall situation of the questionnaire survey stage. Finally, it demonstrates the data analysis methods and steps of this study.

3.1 Population and Sampling Method

3.1.1 Population

The aim of this research is to explore the influence of entrepreneurial role model on the entrepreneurial intentions of college students, as well as to delve into the mechanisms of effectuation in this impact and the potential moderating effects of entrepreneurial self-efficacy, goal orientation, entrepreneurial resilience, and personality traits such as openness and extraversion. To enhance the precision of the study, we specifically chose Chinese college students who had participated in entrepreneurship programs at their schools, representing diverse academic disciplines in the humanities and engineering. These students had all undergone entrepreneurship courses, acquired a foundational understanding of how to initiate an entrepreneurial venture, and possessed a certain level of awareness regarding their own entrepreneurial intentions, enabling them to comprehensively comprehend and respond to the questionnaire.

The selection of the Chinese university student sample is primarily based on several key factors. Firstly, there has been a significant focus from the Chinese government and educational institutions on promoting entrepreneurship education in recent years. This has led to an increase in entrepreneurial opportunities and resources for college students, making it easier for them to interact with entrepreneurial role models and be influenced by them. Therefore, this group is well-suited for studying the impact of entrepreneurial role models on entrepreneurial intention. Secondly, college students are in the crucial stage of developing their career plans and worldviews, and they are the demographic that will ultimately make future career decisions (Scherer et al., 1989). As such, using student samples is a valid approach for assessing career choices (Kolvereid, 1996; Krueger et al., 2000; Barnir et al., 2011), owing to the relative homogeneity of student samples and the likelihood that their career intentions and goals at this stage will predict their actual career choices (Bateman & Zeithaml, 1989; Trice, 1991). Thirdly, college students are typically pursuing higher education, indicating a solid academic foundation and learning aptitude. Examining their entrepreneurial intentions can provide insight into how educational environments and personal factors influence the formation of entrepreneurial intentions. This makes them an ideal group for studying the interplay between educational settings and individual characteristics in shaping entrepreneurial intentions.

3.1.2 Sampling Method

Population and sample selection

To evaluate the clarity of the research questionnaire, a small-scale pre-survey will be conducted before the large-scale research to collect the data for the variables to be measured, and to perform preliminary analyses of the results. Additionally, the pre-survey was used to identify any issues with the questionnaire and to address any unclear entries. This study will focus on a sample of Chinese university students. The distributing the questionnaire, researchers will explain the purpose of the research and assure participants that the questionnaire will solely be utilized for academic research. This study utilized A-priori sample size calculations for Structural Equation Modeling (SEM), considering the observed and latent variables in the model, the anticipated effect size, as well as the desired probability level and statistical power level. The calculation produced two results: the minimum sample to detect effect, and the minimum sample size for model structure, as recommended by Cohen (1988) and Westland (2010). As shown in Table 9, the recommended minimum sample size is 400.

Table 9 Sample Size Calculation

Anticipated effect size	0.3
Desired statistical power level	0.8
Number of latent variables	8
Number of observed variables	56
Probability level	0.05
Recommended minimum sample size	400

3.2 Questionnaire Design and Measurement of Variables

3.2.1 Questionnaire Design

Drawing from the hypotheses and conceptual frameworks concerning entrepreneurial role model, entrepreneurial intention, effectuation, entrepreneurial self-efficacy, goal orientation, entrepreneurial resilience, and the Big Five personality traits (extraversion and openness) in the research, we selected established scales that align with the study's measurements based on prior research. To construct the survey questionnaire, we incorporated relevant foundational information as control variables. To guarantee the accuracy of the measurements within the Chinese context, we implemented a process of translating and then re-translating the scales. Participants rated each item in the questionnaire on a 7-point Likert scale (ranging from (1 = strongly disagree / not confident to 7 = strongly agree / completely confident) to assess the degree of correspondence between the items and their individual circumstances.

3.2.2 Measurement of Variables

Entrepreneurial role model

The items concerning entrepreneurial role model (ERM) were sourced from Nauta & Kokaly's study (2001). Participants were requested to express their level of agreement with each statement, using a scale that ranged from 1 (strongly disagree) to 7 (strongly agree).

Table 10 Entrepreneurial Role Model Items

1	There is an entrepreneurial person I am trying to be like in my career pursuits.
2	There is an entrepreneurial person particularly inspirational to me in my career path.

- 3 In the career path I am pursuing, there is an entrepreneurial person I admire.
- 4 I know of an entrepreneurial person who has a career I would like to pursue.

Entrepreneurial intention

The measures related to Entrepreneurial Intention (EI) were derived from a study conducted by Liñán & Chen (2009). Respondents were asked to express their degree of agreement with each measure using a scale spanning from 1 (strongly disagree) to 7 (strongly agree).

Table 11 Entrepreneurial Intention Items

1	I am ready to do anything to be an entrepreneur.
2	My professional goal is to become an entrepreneur.
3	I will make every effort to start and run my own firm.
4	I am determined to create a firm in the future.
5	I have very seriously thought of starting a firm.
6	I have the firm intention to start a firm some day.

Effectuation

The measures regarding Effectuation were adapted from Chandler et al.'s research (2011). Respondents were requested to indicate their degree of concurrence with each concept, utilizing a 7-point scale ranging from 1 (strongly disagree) to 7 (strongly agree).

Table 12 Effectuation Items

1	We allowed the business to evolve as opportunities emerged.	Flexibility
2	We adapted what we were doing to the resources we had.	
3	We were flexible and took advantage of opportunities as they arose.	
4	We were careful not to commit more resources than we could afford to lose.	Affordable loss
5	We were careful not to risk so much money that the company would be in real trouble financially if things didn't work out.	
6	We were careful not to risk more money than we were willing to lose with our initial idea.	
7	We used a substantial number of agreements with customers, suppliers and other organizations and people to reduce the amount of uncertainty.	pre-commitment
8	We used pre-commitments from customers and suppliers as often as possible.	
9	We experimented with different products and/or business models.	experimentation
10	We tried a number of different approaches until we found a business model that worked.	

Entrepreneurial self-efficacy

The measurement items concerning entrepreneurial self-efficacy (ESE) were adopted from Kickul et al. (2009). The individuals were requested to assess their level of confidence for each item using a 7-point scale, ranging from 1 (not confident) to 7 (completely confident).

Table 13 Entrepreneurial Self-efficacy Items

1	Conceive a unique idea for a business	Searching
2	Identify market opportunities for a new business	
3	Plan a new business	Planning
4	Write a formal business plan	
5	Raise money to start a business	Marshalling
6	Convince others to invest in your business	
7	Convince a bank to lend you money to start a business	
8	Convince others to work for you in your new business	
9	Manage a small business	Implementing
10	Grow a successful business	

Goal orientation

The items related to goal orientation (GO) were sourced from Brett & VandeWalle's study (1999). Participants were requested to indicate their degree of concurrence with each statement by utilizing a scale that ranges from 1 (strongly disagree) to 7 (strongly agree).

Table 14 Goal Orientation Items

1	I am willing to select a challenging work assignment that I can learn a lot from.	Learning
2	I often look for opportunities to develop new skills and knowledge.	
3	I enjoy challenging and difficult task at work where I'll learn new skills.	
4	For me, development of my work ability is important enough to take risks.	
5	I prefer to work in situations that require a high level of ability and talent.	
6	I like to show that I can perform better than my coworkers.	Performance-prove
7	I try to figure out what it takes to prove my ability to others at work.	
8	I enjoy it when others at work are aware of how well I am doing.	
9	I prefer to work on projects where I can prove my ability to others.	
10	I would avoid taking on a new task if there was a chance that I would appear rather incompetent to others.	Performance-avoidance
11	Avoiding a show of low ability is more important to me than learning a new skill.	
12	I'm concerned about taking on a task at work if my performance would reveal that I had low ability.	
13	I prefer to avoid situations at work where I might perform poorly.	

Entrepreneurial resilience

The items pertaining to entrepreneurial resilience (ER) were adapted from Sinclair & Wallston (2004). The participants were required to indicate their degree of agreement with each statement on a scale from 1 (strongly disagree) to 7 (strongly agree).

Table 15 Entrepreneurial Resilience Items

1	I look for creative ways to alter difficult situations.
2	Regardless of what happens to me, I believe I can control my reaction to it.

- 3 I believe I can grow in positive ways by dealing with difficult situations.
- 4 I actively look for ways to replace the losses I encounter in life.

Openness & Extraversion

The items related to openness and extraversion were drawn from Pathki et al.'s research (2021). Participants were instructed to express their level of agreement with each statement using a scale that varied from 1 (strongly disagree) to 7 (strongly agree).

Table 16 Openness Items

- 1 At work, I enjoy hearing different ideas.
- 2 I have a vivid imagination at work.
- 3 At work, I enjoy thinking about things.
- 4 I enjoy philosophical discussions at work.

Table 17 Extraversion Items

- 1 At work, I feel comfortable around people.
- 2 I make friends easily at work.
- 3 At work, I am skilled in handling social situations.
- 4 I talk a lot at work.

Control variables

As our sample is derived from a homogeneous group of university students, we have incorporated four control variables that could potentially influence the model variables. The first control variable pertains to the gender of the participants. Previous research indicates that women tend to display lower entrepreneurial inclinations and self-efficacy compared to men (Chen et al., 1998; Wilson et al., 2007; Kickul et al., 2008), implying that gender may have an impact on entrepreneurial intentions and related factors. The second control variable encompasses the educational background of the participants. Research suggests that business students often exhibit a greater interest in pursuing entrepreneurial endeavors and are more predisposed toward entrepreneurship compared to students from other disciplines (Vaillant & Lafuente, 2007). The third control variable is work experience, specifically focusing on whether the individual has prior work experience that includes entrepreneurial activities. Prior relevant entrepreneurial experience or experience working in a startup significantly influences an individual's entrepreneurial intentions (Van Auken et al., 2006). Additionally, we include parents' occupation and family income as control variables. Numerous studies have demonstrated that having at least one self-employed parent positively impacts a child's entrepreneurial intentions (Hoffmann et al., 2015; Zapkau et al., 2015; Criaco et al., 2017). Family income is also considered an important factor in this context.

3.3 Statistical Techniques

3.3.1 Data Collection

This study aims to conduct a questionnaire survey among students in Chinese universities. To ensure the validity of the research subjects and to comply with the requirements of human research ethics, this study adhered to the following criteria in

the selection of the research subjects: a) Students who participated in entrepreneurship courses or programs: to ensure that research participants have relevant entrepreneurial knowledge or experience. b) Diversity of students' backgrounds: to select students who include a variety of backgrounds and experiences, such as majors, grades, etc. c) Active students who have willingness and ability to participate in the research: to ensure that the students have sufficient time and resources to participate in the research activities and are willing to share their experiences and insights. d) Protection of privacy and respect for individual rights: to sign a consent form for volunteers to participate in the study.

The surveys conducted through both online and offline questionnaires. Offline questionnaires are mainly distributed and collected by researchers in entrepreneurship courses. With prior authorization from the professor, questionnaires were selectively distributed to students in different majors at the end of the course. Students completed the questionnaire within the designated time in class to ensure its validity. For some students who cannot fill in the classroom, online questionnaires are used as a supplement to offline questionnaires. Before giving out the questionnaire, researchers explained the purpose of this research and promise scales used in this study are mainly from the research literature. To ensure the validity of the measurements in the Chinese context, we adopted a translation and back translation procedure to revise the scales. The respondents used a 7-point Likert scale (1 = strongly disagree / not confident; 7 = strongly agree / completely confident) to evaluate how well each item in the questionnaire described their situation.

To ensure the accuracy and validity of the questionnaire, a small-scale pre-survey was conducted prior to the full-scale research. Based on the feedback from the pre-survey participants, the questionnaire was revised to ensure the smooth implementation of the subsequent research. The pre-survey was carried out by students from a single class at the target research institution. At the conclusion of the data collection, fill-in-the-blank options was provided to gather opinions on the questionnaire research, and the questionnaire content was amended based on the feedback received. Following the pre-survey, this study began to conduct a large-scale questionnaire survey across multiple majors and classes at different institutions. After distributing the questionnaires both online and offline in batches, we received a total of 662 responses. After excluding invalid questionnaires, such as those with incomplete information, we retained 582 valid responses, resulting in a validity rate of 87.4%.

Non-response bias

To evaluate the potential for non-response bias, the gathered questionnaires were categorized into two groups based on the order in which they were received (Armstrong & Overton, 1977; Lindner et al., 2001). If the analysis shows no significant variations in the test variables between these two groups ($p > 0.05$), it suggests that there is no non-response bias present. Non-response bias in survey research has the potential to skew results and provide inaccurate outcomes, underscoring the importance of assessing it to maintain the representativeness of the response sample (Lewis, Hardy, & Snaith, 2013).

Lindner et al. (2001) proposed sorting respondents into early and late response groups to identify non-response bias. These groups can then be compared using t-test analysis to identify any notable disparities in their responses to Likert scale questions. Lindner et al. (2001) also suggested operationally defining late respondents as the latter 50% of respondents to ensure equal group sizes and preserve the statistical power of the analysis. Thus, this study split the responses into two equal groups: the initial 291 responses were classified as early respondents (group 1), while the subsequent 291 responses were categorized as late respondents (group 2). An examination of the data unveiled no significant variances in each variable between these groups as shown in Table 18, signaling the absence of non-response bias.

Table 18 Test of Non-Response Bias between Early and Late Respondents

Variables	Comparison	N	Mean	S.D.	T-value	P-value
ERM	Early Respondents	291	4.81	1.58	.34	.73
	Late Respondents	291	4.77	1.29		
GO	Early Respondents	291	5.11	1.12	1.59	.11
	Late Respondents	291	4.98	0.86		
ESE	Early Respondents	291	4.77	1.41	1.60	.11
	Late Respondents	291	4.60	1.16		
EFFT	Early Respondents	291	5.38	1.10	1.66	.10
	Late Respondents	291	5.24	0.91		
ER	Early Respondents	291	5.35	1.21	1.06	.29
	Late Respondents	291	5.26	0.95		
OP	Early Respondents	291	5.34	1.18	1.49	.14
	Late Respondents	291	5.21	0.99		
EXV	Early Respondents	291	4.69	1.51	-.64	.52
	Late Respondents	291	4.76	1.35		
EI	Early Respondents	291	4.68	1.55	-.05	.96
	Late Respondents	291	4.69	1.47		

3.3.2 Statistical Techniques

In this study, the collected data will be analyzed for reliability and validity, descriptive statistics, mediation effect test analysis, and moderated effect test analysis using SPSS and Smart PLS. PLS-SEM is an analytical method based on the Partial Least Squares (PLS) method, which combines principal component analysis and multiple regression for iterative estimation. The approach to analyzing variation in latent variables is a causal modeling approach (Sarstedet et al., 2023). PLS-SEM is a powerful tool for understanding potentially complex causal relationships and is particularly useful when multiple variables are involved. In this study, entrepreneurial intention may be influenced by various factors such as entrepreneurial role model and effectuation, and PLS-SEM allows for the simultaneous consideration of these factors and a better understanding of their interactions.

Descriptive statistical analysis

Descriptive statistical analyses provide basic quantitative characteristics of the observed samples. These analyses only involve the characteristics of the subjects themselves and require objective descriptions without comparative or correlational

analyses. The descriptive statistical analysis of the questionnaire data can provide basic group characteristics, such as gender, age, and education of the respondents in the survey. This can help determine whether the data samples obtained from the questionnaire match the group characteristics of the study's respondents.

Reliability analysis

The reliability of the data scales will be examined. Reliability analysis, is an important indicator of whether the research data have consistency, reliability, and stability. Scientific research typically uses the internal consistency coefficient to test the level of reliability, specifically using Cronbach's α coefficient. A higher Cronbach's α coefficient indicates better reliability of the test scale. Generally, a Cronbach's α coefficient greater than or equal to 0.9 indicates very high reliability, while a coefficient between 0.8 and 0.9 is considered good reliability. A coefficient between 0.7 and 0.8 indicates questionable reliability, but still valuable for reference, and a coefficient lower than 0.7 indicates undesirable reliability. In such cases, a replacement scale should be considered for testing (Hair et al., 2010; 2011).

Validity analysis

Validity in this study refers to the accuracy of the scale, with higher validity indicating greater confidence in the results. The study's model is constructed based on numerous relevant theories and previous research, and the questionnaire scales are all derived from validated scales used by previous researchers. The number of factors and their relationship to their corresponding measurement questions are clearly defined, so this study utilizes confirmatory factor analysis (CFA) to confirm whether the relationship between each factor and its corresponding measurement question aligns with the theoretical assumptions of the study. The factor analysis used for validity primarily examines two dimensions: convergence validity and discriminant validity.

Convergence validity assesses the degree of correlation among questions within the same variable to determine if different questions can measure the same variable. This is primarily achieved by examining the factor loadings and the average variance extracted (AVE) (Fornell & Larcker, 1981). To demonstrate convergence, the factor loadings for each question in the scale must exceed 0.7, indicating a strong correlation between the items and the variables in the scale. An AVE value between 0.35 and 0.5 is considered acceptable, while a value greater than 0.5 indicates solid convergence. Discriminant validity assesses the distinction between different variables, and the criteria used for this assessment are the Fornell-Lacquer criterion. According to Fornell-Lacquer, if AVE of a variable exceeds the square of its correlation with other variables, there is effective differentiation between the variables. However, it is important to note that judging discriminative effect based solely on the comparison of AVE and correlation coefficients may be limited, as suggested by Henseler et al. (2015).

Common method bias test

A common method bias test will be conducted during the collection of questionnaires and the tabulation of data. The concept of Common Method Variance (CMV) pertains to the artificial correlation between predictor and criterion variables resulting from factors such as the use of the same data source or rating objects, measurement environment, shared item context, and item characteristics. This phenomenon

represents a systematic error in research. Given that self-rating scales will be utilized in this study, and that the data will be derived directly from employees' self-evaluations, there is a potential for common method bias. To address and reduce the potential impact of common method bias on research outcomes, this study seeks to employ two strategies. Firstly, anonymous surveys will be implemented in the questionnaire survey to minimize suspicion and ensure consistency among respondents. Moreover, data will be collected from multiple majors across various colleges through the questionnaire surveys. Additionally, to mitigate the effects of severe common method bias in research data, the study will utilize Harman's one-factor approach to assess for the presence of common method bias in the data samples (Podsakoff et al., 2003).

Model analysis and hypothesis testing

This study aims to construct a PLS-SEM model according to the research objectives and theoretical assumptions. The constructed model will be fitted using SmartPLS, and the model parameters will be estimated and optimized through iterative estimation methods. Upon completion of the model fitting, it is essential to evaluate the model. When evaluating the model using PLS-SEM method, the main factors to be considered are Variation Inflation Factor (VIF), Coefficient of Determination (R^2) and Stone Geisser (Q^2). In this study, the Variance Inflation Factor (VIF) is utilized to investigate the issue of covariance. The variance inflation factor is inversely related to covariance tolerance; in other words, the lower the VIF value, the higher the tolerance for the covariance issue. Previous research has often considered VIF values below 10 as acceptable for the covariance problem (Hair et al., 2010). Additionally, Henseler et al. (2009) have shown that an R^2 value of 0.75, 0.50, or 0.25 can be considered as indicating significant, moderate, and weak explanatory power, respectively. When evaluating the predictive accuracy of a model, it is important to consider not only the R^2 value but also the predictive validity Q^2 value proposed by Geisser (1974), which serves as an indicator of the model's predictive relevance. A Q^2 value greater than 0 indicates that the path model is predictively relevant to the predicted structure.

Then model hypothesis testing will be performed and the results will be interpreted. The Bootstrapping program will be used in hypothesis testing by calculating the path coefficients of structural equation models and conduct significance tests. The inspection process establishes the bootstrapping repeat sampling frequency at 5000 times, with a marginal significance level of $p \leq 0.1$. If the confidence interval of the result does not include 0, it denotes significant effects; if the confidence interval includes 0, it denotes insignificant effects. The intrinsic mechanisms and causal relationships of the model is expected to explained and justified based on the results of model fitting.

Summary

This chapter provides the research methods of this research which involves sample selection and data collection procedure that include sample, data collection, and test of non-response bias. The measurement development is followed by each construct in the conceptual model. The statistical techniques include descriptive statistical analysis, reliability analysis, validity analysis, common method bias test and structural equation model test. The next chapter presents data analysis procedures and the findings the results of this research.

Chapter 4 Results

4.1 External Model Setting

External models, or measurement models, illustrate the relationship between a latent variable and a set of observed indicators. Depending on the nature of the measured variables, external models can be classified into reflective models and formative models. In this study, Effectuation is composed of four dimensions: Flexibility, Affordable Loss, Pre-commitments, and Experimentation. Flexibility and Affordable Loss each include three observed variables, while Pre-commitments and Experimentation each include two observed variables. Additionally, goal orientation (GO) has three dimensions: learning goal orientation, performance-prove goal orientation, and performance-avoidance goal orientation, each measured by four observed variables. Entrepreneurial self-efficacy consists of four dimensions—searching, planning, marshalling, and implementing—each measured by several observed variables. Therefore, a second-order measurement model is required for this study.

The second-order measurement model incorporates both first-order and second-order models, which can be either formative or reflective. Thus, there are four types of second-order measurement models: a) Reflective-Reflective Model (both first-order and second-order are reflective), b) Reflective-Formative Model (first-order is reflective, second-order is formative), c) Formative-Reflective Model (first-order is formative, second-order is reflective) and d) Formative-Formative Model (both first-order and second-order are formative) (Ringle et al., 2012). In this study, Effectuation is measured by four reflective dimensions: Flexibility, Affordable Loss, Pre-commitments, and Experimentation. Each of these dimensions is measured reflectively by several observed variables respectively, making Effectuation a reflective-reflective model. Similarly, both Goal Orientation and Entrepreneurial Self-Efficacy are modeled as reflective-reflective models.

4.2 Descriptive Statistical Analysis

Based on the data collected from the questionnaire, this study first analyzed the demographic characteristics of the sample, which included gender, grade level, major, academic performance, work experience, average annual household income, and parents' occupations. 41.4% of the respondents in this study were male and 58.6% were female. In terms of grade level, 33.8% were freshmen, 32.5% were sophomores, and 33.7% were juniors nearing graduation. With respect to major distribution, 49.7% were business students and 50.3% were engineering students. In terms of academic performance, the percentage of respondents with a GPA of 4.0 or higher was 14.6%, 4.0-3.5 was 52.7%, 3.5-3.0 was 23.4%, 3.0-2.0 was 8.2%, and 2.0-1.0 was 1%. Regarding work experience, 2.9% of respondents had started or were starting a business, 69.6% had experience in internships or part-time work, and 27.5% had no work experience at all. Economic background was assessed through a lens of average annual household income, with 56% of participants reporting less than RMB 100,000, 31.4% falling within the RMB 100,000 to 200,000 bracket, 7.4% having between RMB

200,000 to 300,000, and a wealthier segment of 5.1% reporting over RMB 300,000. Lastly, parental occupations were diverse, with 37.3% self-employed, 36.6% engaged in farming, 14.8% employed by enterprises and institutions, 1.2% holding government positions, and the remaining 11.5% encompassing a range of other professions. A detailed breakdown of these demographics can be found in Table 19.

Table 19 Demographic Profile of Respondents

Variable	Scale	Total	Percent
Gender	Male	241	41.4
	Female	341	58.6
Grade	Freshman	197	33.8
	Sophomore	189	32.5
	Junior	196	33.7
Major	Business	289	49.7
	Engineer	293	50.3
GPA	2.0-1.0	6	1.0
	3.0-2.0	48	8.2
	3.5-3.0	136	23.4
	4.0-3.5	307	52.7
	Above 4.0	85	14.6
Working experience	Self-employed	17	2.9
	Part-time job or Internship	405	69.6
	Non	160	27.5
Family income per year (RMB)	Below 100,000	326	56.0
	100,000-200,000	183	31.4
	200, 000-300, 000	43	7.4
	300,000-5000,000	17	2.9
	Above 500,000	13	2.2
Parents' occupation	Entrepreneur	217	37.3
	Peasant	213	36.6

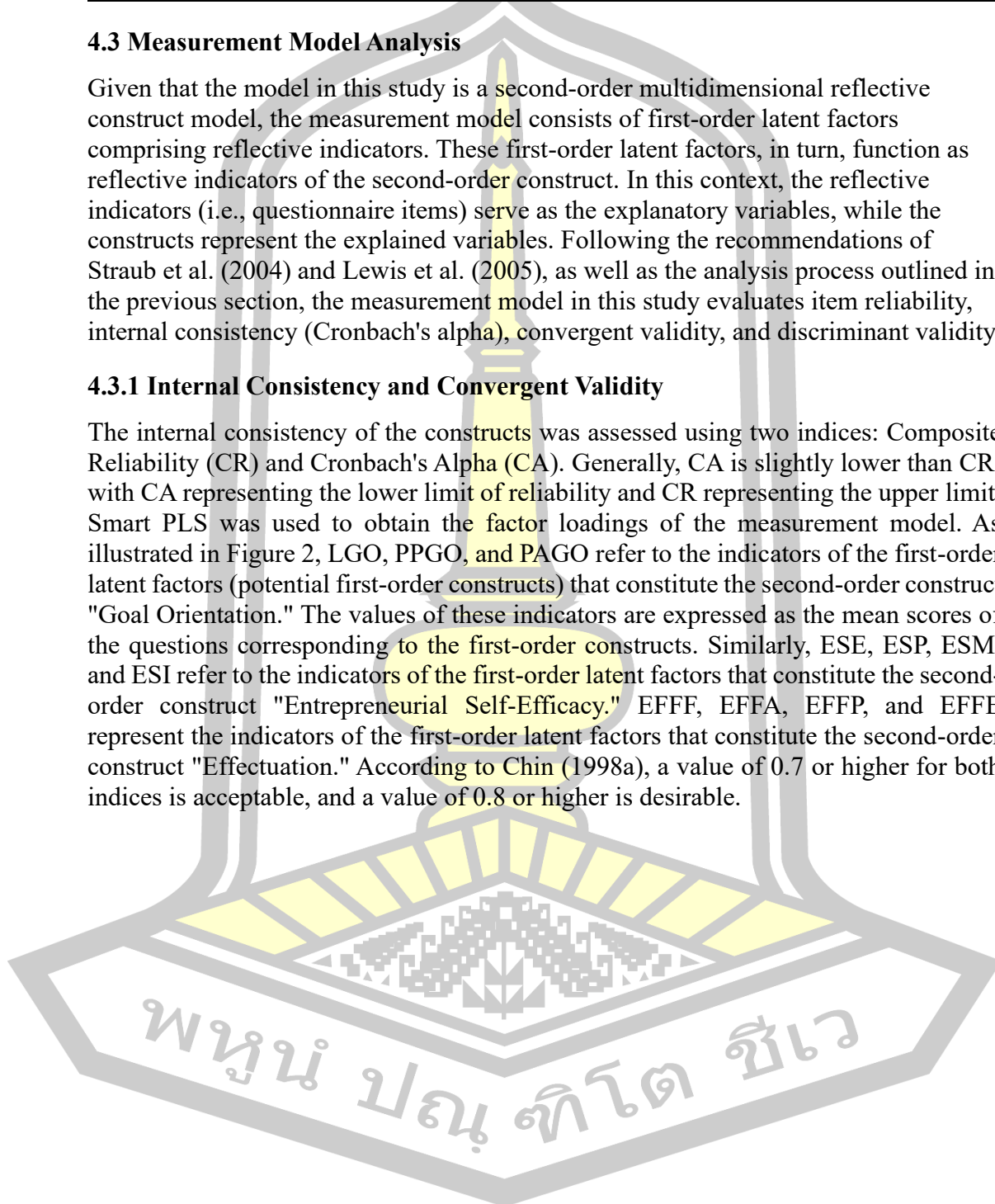
Employee	86	14.8
Government official & others	74	12.7

4.3 Measurement Model Analysis

Given that the model in this study is a second-order multidimensional reflective construct model, the measurement model consists of first-order latent factors comprising reflective indicators. These first-order latent factors, in turn, function as reflective indicators of the second-order construct. In this context, the reflective indicators (i.e., questionnaire items) serve as the explanatory variables, while the constructs represent the explained variables. Following the recommendations of Straub et al. (2004) and Lewis et al. (2005), as well as the analysis process outlined in the previous section, the measurement model in this study evaluates item reliability, internal consistency (Cronbach's alpha), convergent validity, and discriminant validity.

4.3.1 Internal Consistency and Convergent Validity

The internal consistency of the constructs was assessed using two indices: Composite Reliability (CR) and Cronbach's Alpha (CA). Generally, CA is slightly lower than CR, with CA representing the lower limit of reliability and CR representing the upper limit. Smart PLS was used to obtain the factor loadings of the measurement model. As illustrated in Figure 2, LGO, PPGO, and PAGO refer to the indicators of the first-order latent factors (potential first-order constructs) that constitute the second-order construct "Goal Orientation." The values of these indicators are expressed as the mean scores of the questions corresponding to the first-order constructs. Similarly, ESE, ESP, ESM, and ESI refer to the indicators of the first-order latent factors that constitute the second-order construct "Entrepreneurial Self-Efficacy." EFFF, EFFA, EFFP, and EFFE represent the indicators of the first-order latent factors that constitute the second-order construct "Effectuation." According to Chin (1998a), a value of 0.7 or higher for both indices is acceptable, and a value of 0.8 or higher is desirable.



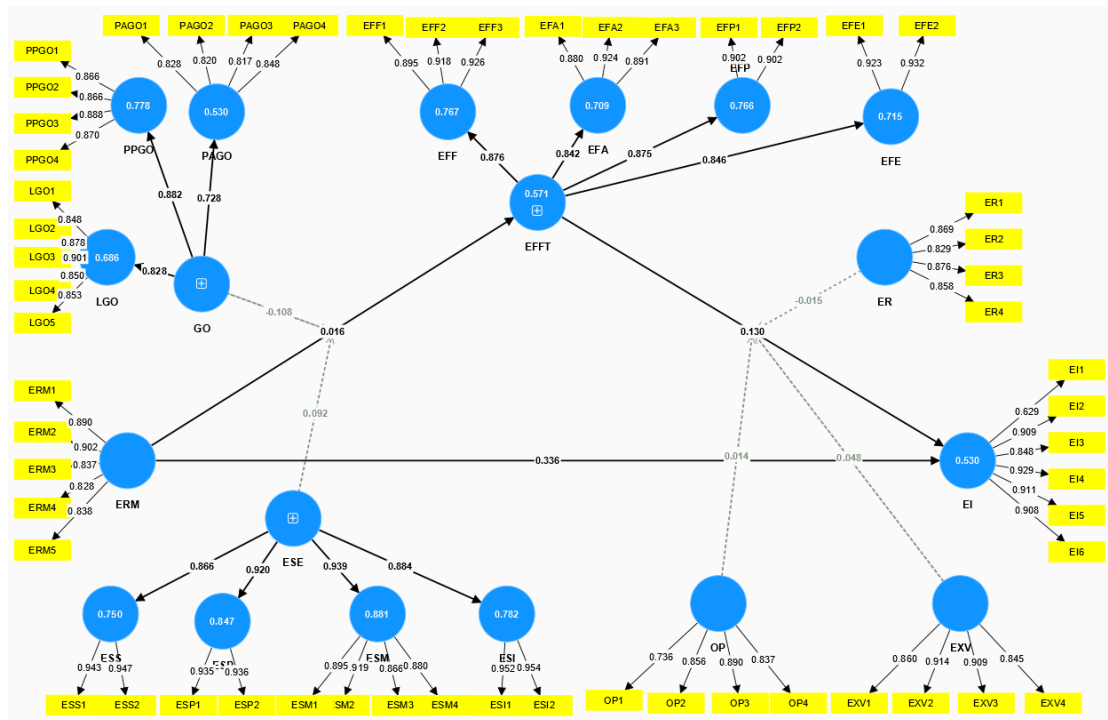


Figure 2 The Result Output Diagram of Measurement Model

Convergent validity refers to the degree to which a construct comes together cohesively to account for the variability observed in its indicators (Hair et al., 2021). To assess convergent validity, the Average Variance Extracted (AVE) was used as the validity index, with a suggested threshold value of 0.5 or above (Hair et al., 2009)). Table 18 displays the validated factor analyses (CFA) of structural reliability, conducted to assess the reliability of each indicator or item that pertains to the primary focus of the research. As shown in Table 20, the CR values for the constructs are not less than 0.7 which meet the acceptability criteria (Chin, 1998a; Hair et al., 2021). Although the AVE for Goal Orientation (second-order) is 0.491, which requires cautious interpretation, it is still considered acceptable as it is close to the threshold of 0.5. The AVE values for the other constructs are above 0.6. This indicates that the constructs in this study have both internal consistency and convergent validity.

Table 20 Confirmatory Factor Analysis with Factor Loadings, Composite Reliability, and Average Variance Extracted

	Items	Factor loading	CR	AVE
Entrepreneurial Role Model	ERM1	0.89	0.916	0.739
	ERM2	0.902		
	ERM3	0.837		
	ERM4	0.828		
	ERM5	0.838		
Goal orientation	Learning	0.828	0.917	0.491
	Performance-prove	0.882		
	Performance-avoidance	0.728		

Learning Goal orientation	LGO1	0.848	0.919	0.75
	LGO2	0.878		
	LGO3	0.901		
	LGO4	0.85		
	LGO5	0.853		
Performance-prove Goal Orientation	PPGO1	0.866	0.895	0.761
	PPGO2	0.866		
	PPGO3	0.888		
	PPGO4	0.87		
Performance-avoidance Goal Orientation	PAGO1	0.828	0.85	0.686
	PAGO2	0.82		
	PAGO3	0.817		
	PAGO4	0.848		
Entrepreneurial Self-Efficacy	Searching	0.866	0.954	0.703
	Planning	0.92		
	Marshalling	0.939		
	Implementing	0.884		
Searching	ESS1	0.943	0.88	0.892
	ESS2	0.947		
Planning	ESP1	0.935	0.857	0.875
	ESP2	0.936		
Marshalling	ESM1	0.895	0.915	0.792
	ESM2	0.919		
	ESM3	0.866		
	ESM4	0.88		
Implementing	ESI1	0.952	0.899	0.908
	ESI2	0.954		
Effectuation	Flexibility	0.9	0.931	0.612
	Affordable Loss	0.881		
	Pre-commitments	0.771		
	Experimentation	0.839		
Flexibility	EFF1	0.895	0.902	0.834
	EFF2	0.918		
	EFF3	0.926		
Affordable Loss	EFA1	0.88	0.882	0.808
	EFA2	0.924		
	EFA3	0.891		
Pre-commitments	EFP1	0.902	0.771	0.814
	EFP2	0.902		
Experimentation	EFE1	0.924	0.841	0.861

	EFE2	0.932		
Entrepreneurial Resilience	ER1	0.869	0.887	0.736
	ER2	0.829		
	ER3	0.875		
	ER4	0.857		
Openness	OP1	0.736	0.858	0.692
	OP2	0.856		
	OP3	0.890		
	OP4	0.837		
Extraversion	EXV1	0.86	0.909	0.779
	EXV2	0.914		
	EXV3	0.909		
	EXV4	0.845		
Entrepreneurial intention	EI1	0.627	0.938	0.743
	EI2	0.909		
	EI3	0.848		
	EI4	0.93		
	EI5	0.911		
	EI6	0.908		

4.3.2 Correlation Analysis and Discriminant Validity

In this research, there are two purposes for testing correlation on all variables by a bivariate correlation analysis of Pearson's; (1) exploring the relationships among variables (2) verify the multicollinearity problem which exists when inter-correlation between independent variables exceeds 0.80 (Hair et al, 2010). Thus, the bivariate correlation procedure is scaled to a two-tailed test of statistical significance as $p < 0.01$.

Accordingly, Table 21 demonstrates the significant results between the main variables. that entrepreneurial role model is positively correlated with effectuation ($r = 0.502$, p -value < 0.01) and entrepreneurial intention ($r = 0.611$, p -value < 0.01). The mediating effect of effectuation is also positively correlated with entrepreneurial intention ($r = 0.546$, p -value < 0.01). The moderating effect of goal orientation and entrepreneurial self-efficacy are positively correlated with effectuation (p -value < 0.01), with the value of $r = 0.659$ for goal orientation as well as $r = 0.681$ for entrepreneurial self-efficacy. Similarly, the moderating effect of entrepreneurial resilience, openness and extraversion are positively correlated with entrepreneurial intention (p -value < 0.01), with the value of $r = 0.546$ for entrepreneurial resilience, $r = 0.512$ for openness and $r = 0.588$ for extraversion. Regarding the correlation results of the control variables, several significant associations with entrepreneurial intention were observed. Gender ($r = -0.083$, p -value < 0.05) and work experience ($r = -0.104$, p -value < 0.05) showed negative correlations, suggesting that variations in these factors are linked to differences in entrepreneurial intention. Specifically, female students are found to have higher levels of entrepreneurial intention compared to those males. Greater work experience may be associated with lower entrepreneurial intention. Family income was

positively correlated with entrepreneurial intention ($r = 0.153$, $p\text{-value} < 0.01$), indicating that higher family income is associated with stronger entrepreneurial intentions. Additionally, having parents whose occupation are peasants ($r = -0.097$, $p\text{-value} < 0.01$) correlated negatively with entrepreneurial intention, while having parents who are employees ($r = 0.103$, $p\text{-value} < 0.05$) correlated positively. These results suggest that family background, including the socioeconomic status and parents' occupations, plays a significant role in shaping entrepreneurial intention.

Table 21 Descriptive Statistics, Correlation Matrix

	Mean	S.D.	ERM	GO	ESE	EFFT	ER	OP	EXV	EI	Gender	Major	Work Expe.	Fam Inco.	PO1	PO2	PO3	PO4
ERM	4.791	1.440	1															
GO	5.043	0.999	.585**	1														
ESE	4.682	1.296	.646**	.645**	1													
EFFT	5.313	1.010	.502**	.659**	.681**	1												
ER	5.305	1.089	.501**	.638**	.639**	.769**	1											
OP	5.274	1.090	.446**	.647**	.574**	.692**	.728*	1										
EXV	4.726	1.428	.498**	.550**	.537**	.498**	.510*	.521*	1									
EI	4.595	1.506	.611**	.556**	.692**	.546**	.546*	.512*	.588*	1								
Gender (male)	0.414	0.493	.054	.126**	.084*	.057	.021	.072	.001	.083*	1							
Major Work Expe.	0.497	0.500	-.062	-.003	.060	.004	-.018	.031	.025	.007	.121**	1						
	0.725	0.447	.059	-.026	.017	-.013	.006	-.041	.060	.072	-.201**	-.297**	1					
Fam Inco.	1.639	0.907	.119**	.117**	.128**	.141**	.127*	.111*	.181*	.153*	.135**	-.022	.044	1				
PO1	0.373	0.484	-.021	.014	.009	.028	.005	.016	-.022	-.015	.015	-.012	.053	-.058	1			
PO2	0.366	0.482	.019	.003	-.021	-.002	-.013	-.050	-.007	-.097*	-.059	-.127**	-.051	-.095*	-.556**	1		
PO3	0.148	0.355	.020	.001	.068	.039	.064	.056	.000	.103*	.004	-.007	.094*	.102*	-.291**	-.286**	1	
PO4	0.127	0.333	.009	-.011	-.062	-.052	-.038	-.010	.008	.037	.077	.157*	-.065	.141*	-.252**	-.258**	-.144**	1

Notes: * $p < 0.05$, ** $p < 0.01$ Work Expe= work experience, Fam Inco= Family income, Po1=Parents' occupation1 (Entrepreneur); Po2= Parents' occupation1 (Peasant), Po3= Parents' occupation3 (Employee), Po4= Parents' occupation4 (Government official & others), N=582.

For satisfactory discriminant validity, the square root of the AVE should be above the values of both horizontal and vertical correlations between constructs, and the loading value of an indicator on its own construct should be higher than all its cross loadings (Fornell & Larcker, 1981; Hair et al., 2011). As shown in Table 22 regarding seven main construct-entrepreneurial role model, goal orientation, entrepreneurial self-efficacy, effectuation, entrepreneurial resilience, openness, extraversion and entrepreneurial intention. The finding demonstrated that the square roots of the AVE for the latent variables were all greater than the correlation coefficients between the corresponding variables, indicating good discriminant validity between the variables.

Table 22 Convergent and Discriminant Validity
(The summary of results of Fornell-Larcker Criterion)

Variable	ERM	GO	ESE	EFFT	ER	OP	EXV	EI
ERM	0.86							
GO	0.59	0.701						
ESE	0.647	0.655	0.838					
EFFT	0.508	0.673	0.689	0.782				

ER	0.503	0.659	0.646	0.774	0.858			
OP	0.446	0.661	0.576	0.696	0.732	0.832		
EXV	0.498	0.553	0.536	0.503	0.515	0.523	0.883	
EI	0.615	0.559	0.695	0.549	0.552	0.515	0.592	0.862

To further confirm the discriminant validity of the variables, the HTMT (Heterotrait-Monotrait ratio) assessment was also tested (Henseler et al., 2015; Voorhees et al., 2016). This method addresses the issue of overestimating factor loadings and underestimating conceptual correlation coefficients in PLS analyses. The HTMT assessment involves dividing the average correlation coefficient of the items between different constructs by the average correlation coefficient of the items within the same construct. A lower ratio indicates a higher degree of differentiation. According to Henseler et al. (2015) and Munawar (2022), the HTMT ratio should not exceed 0.9. As seen in Table 23, all HTMT comparisons resulted in values less than 0.9, further confirming the discriminant validity between the constructs.

Table 23 The Discriminant Validity of the Construct
(The summary of results from the HTMT)

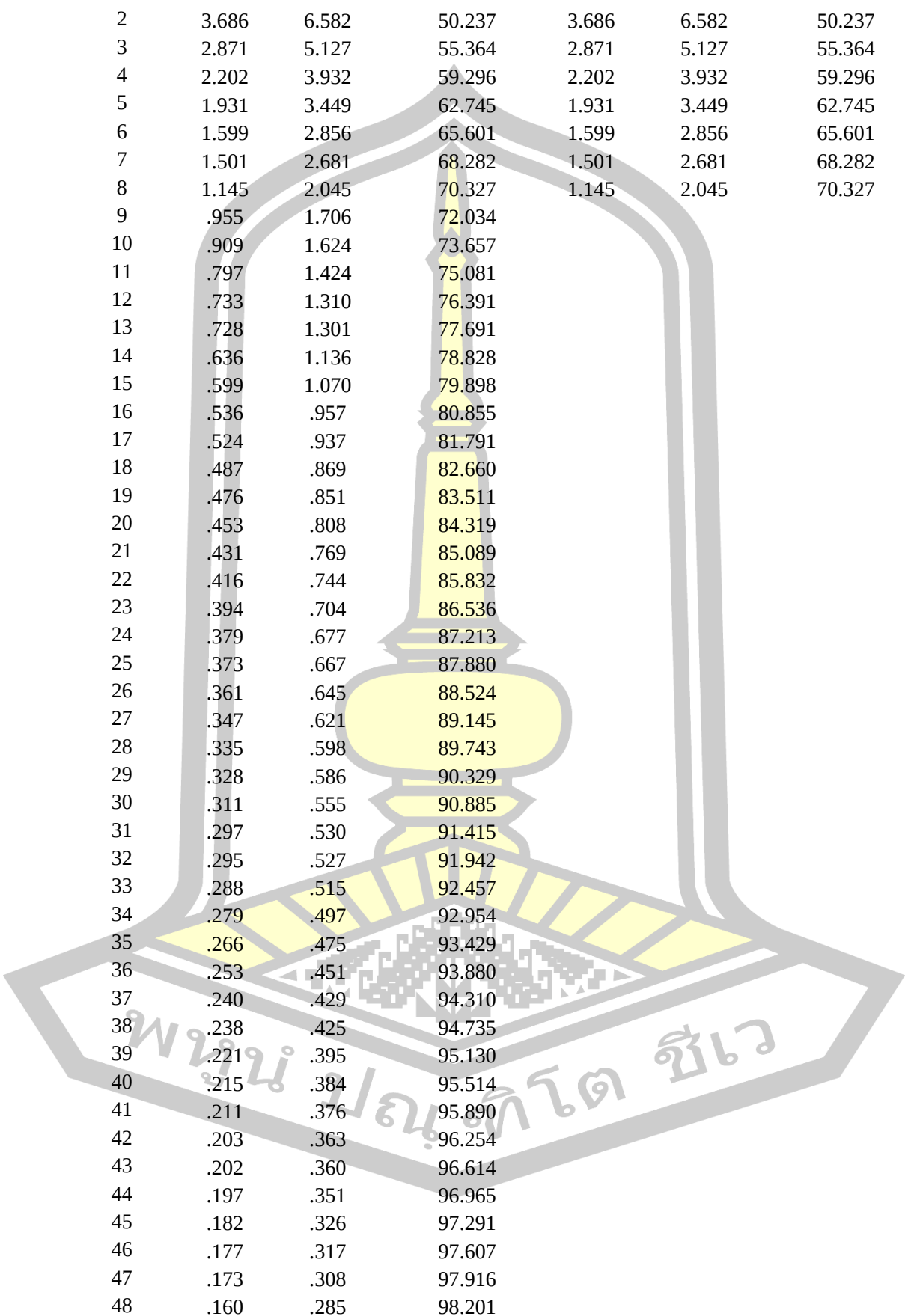
Variable	ERM	GO	ESE	EFFT	ER	OP	EXV	EI
ERM								
GO	0.646							
ESE	0.693	0.698						
EFFT	0.546	0.726	0.725					
ER	0.557	0.727	0.698	0.852				
OP	0.509	0.749	0.64	0.788	0.847			
EXV	0.548	0.607	0.577	0.543	0.569	0.595		
EI	0.666	0.608	0.738	0.588	0.603	0.577	0.644	

4.3.3 Common Method Bias Test

Common Method Variance (CMV) is a term used to describe the systematic errors that can occur when using self-reported scales for data collection (Podsakoff et al., 2003). This problem arises when all components of the scale come from the same respondent, potentially leading to internal correlation between the independent and dependent variables due to factors such as shared measurement environment or context. As bias stemming from homogeneity can compromise the authenticity and credibility of research findings (Simmering et al., 2015), it is crucial to assess and address common method variance in research data to ensure the trustworthiness of subsequent analyses. In this study, Harman's single-factor test was used to assess common method variance. All items in the scale were analyzed using principal component analysis (Podsakoff et al., 2003). The explained variance of the unrotated principal components was 43.654%, which is below the 50% threshold (Ylitalo, 2009). As shown in Table 24, this indicates that there is no serious common method bias in this study.

Table 24 Test of Common Method Bias

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	24.446	43.654	43.654	24.446	43.654	43.654



2	3.686	6.582	50.237	3.686	6.582	50.237
3	2.871	5.127	55.364	2.871	5.127	55.364
4	2.202	3.932	59.296	2.202	3.932	59.296
5	1.931	3.449	62.745	1.931	3.449	62.745
6	1.599	2.856	65.601	1.599	2.856	65.601
7	1.501	2.681	68.282	1.501	2.681	68.282
8	1.145	2.045	70.327	1.145	2.045	70.327
9	.955	1.706	72.034			
10	.909	1.624	73.657			
11	.797	1.424	75.081			
12	.733	1.310	76.391			
13	.728	1.301	77.691			
14	.636	1.136	78.828			
15	.599	1.070	79.898			
16	.536	.957	80.855			
17	.524	.937	81.791			
18	.487	.869	82.660			
19	.476	.851	83.511			
20	.453	.808	84.319			
21	.431	.769	85.089			
22	.416	.744	85.832			
23	.394	.704	86.536			
24	.379	.677	87.213			
25	.373	.667	87.880			
26	.361	.645	88.524			
27	.347	.621	89.145			
28	.335	.598	89.743			
29	.328	.586	90.329			
30	.311	.555	90.885			
31	.297	.530	91.415			
32	.295	.527	91.942			
33	.288	.515	92.457			
34	.279	.497	92.954			
35	.266	.475	93.429			
36	.253	.451	93.880			
37	.240	.429	94.310			
38	.238	.425	94.735			
39	.221	.395	95.130			
40	.215	.384	95.514			
41	.211	.376	95.890			
42	.203	.363	96.254			
43	.202	.360	96.614			
44	.197	.351	96.965			
45	.182	.326	97.291			
46	.177	.317	97.607			
47	.173	.308	97.916			
48	.160	.285	98.201			

49	.153	.273	98.474
50	.146	.260	98.734
51	.139	.248	98.982
52	.131	.234	99.216
53	.126	.224	99.440
54	.117	.209	99.649
55	.105	.187	99.836
56	.092	.164	100.000

4.4 Structural Model Analysis

4.4.1 Multicollinearity

Since PLS-SEM uses multicollinear regression algorithms to fit the model parameters, it is necessary to examine the multicollinearity of the samples. Multicollinearity refers to the correlation between independent variables, which are ideally supposed to be independent of each other. High correlations among independent variables can interfere with the linear relationship between the independent and dependent variables, leading to distorted model results. Therefore, checking for multicollinearity is a prerequisite for the subsequent evaluation of other model indicators (Hair et al., 2011).

Multicollinearity is typically assessed using the variance inflation factor (VIF). In empirical studies, a VIF value of less than 5 is generally considered acceptable. As shown in Table 25, the VIF values for each conceptual construct in this study ranged from 1.68 to 3.15. Tolerances ranged from 0.32 to 0.60. All VIF and tolerance were within acceptable threshold levels (Hair et al., 2011), indicating that there is no significant multicollinearity among the constructs.

Table 25 Variance Inflation Factor (VIF) and Tolerance Value

Construct	VIF	Tolerance
ERM	1.928	.519
GO	2.468	.405
ESE	2.617	.382
EFFT	3.145	.318
ER	3.141	.318
OP	2.581	.387
EXV	1.675	.597

Note: Dependent Variable: Entrepreneurial Intention

4.4.2 Coefficient of Determination for Structural Equation Model

The coefficient of determination (R^2) is a crucial indicator for evaluating the internal model. It represents the square of the correlation coefficient between the actual and predicted values of the endogenous latent variables, indicating the extent to which the exogenous latent variables explain the endogenous latent variables. The R^2 value ranges from 0 to 1, with higher values indicating a greater explanatory power of the endogenous latent variables by the exogenous latent variables.

The adjusted R^2 accounts for the number of independent variables used to predict the target variable, providing a more accurate reflection of the explanatory power for the

endogenous latent variable. Hair et al. (2011) and Henseler et al. (2009) propose a more stringent evaluation criterion, using 0.75, 0.50 and 0.25 values to categories the explanatory power into high, medium, low and weak explanatory power. Table 26 presents the coefficients of determination, adjusted coefficients of determination, and explanatory power for each variable in the model when used as an endogenous variable. Generally, the explanatory power of the entire model is good, falling within the medium to high range. A higher R^2 indicates a more desirable selection of independent variables, which can also be considered an indicator of the structural model's fit.

Table 26 The R Square Values of the Construct

Variables	R-square	R-square adjusted
EFFT	0.571	0.567
EI	0.530	0.523

4.4.3 Predictive Validity of the Structural Equation Model

Predictive validity (Q^2) is a crucial indicator for assessing the predictive accuracy of a model. The Q^2 value can be obtained by running the Blindfolding technique in SmartPLS 4.1 with a step width set to 7. A larger Q^2 indicates a higher correlation between the model's predictions of a particular latent variable and a better internal model. Henseler et al. (2009) concluded that Q^2 values greater than 0 indicate that the model has good predictive ability. As shown in Table 27, the Q^2 values for this model range from 0.341 to 0.386, indicating that the predictive power of the endogenous variables is good.

Table 27 The Q Squared of the Endogenous Variables

Endogenous variables	SSO	SSE	$Q^2 (=1-SSE/SSO)$
ERM	2910	2910	-
GO	7566	7566	-
ESE	5820	5820	-
EFFT	5820	3834.153	0.341
ER	2328	2328	-
OP	2328	2328	-
EXV	2328	2328	-
EI	3492	2143.291	0.386

We also assessed the cross-validation predictive ability to compare the predictive power of different models. This was done to determine if an alternative model could provide superior out-of-sample predictive power compared to the established model (Hair et al., 2021; Sharma et al., 2022). As shown in Table 28, the average loss for the PLS-SEM model was significantly lower than that for the naïve IA benchmark (PLS loss = 1.135, IA loss = 2.119, $p < 0.01$), confirming the superior overall predictive ability of the PLS-SEM model (Liengard et al., 2021).

Table 28 The Cross-validation Predictive Ability Test

	PLS loss	IA loss	Average loss difference	t value	p value
LGO	0.849	1.74	-0.891	10.845	0.000
PPGO	0.883	2.155	-1.272	14.736	0.000
PAGO	1.564	2.432	-0.868	10.146	0.000
ESS	0.725	2.183	-1.458	13.426	0.000

ESP	0.563	2.173	-1.61	14.98	0.000
ESM	0.774	2.552	-1.779	15.616	0.000
ESI	0.739	2.534	-1.796	14.249	0.000
EFF	0.932	1.647	-0.714	8.809	0.000
EFA	1.305	1.722	-0.417	5.165	0.000
EFP	1.146	1.69	-0.543	6.737	0.000
EFE	1.068	1.646	-0.578	7.198	0.000
EFFT	1.114	1.678	-0.563	7.999	0.000
EI	2.021	3.203	-1.182	10.192	0.000
Overall	1.135	2.119	-0.984	15.046	0.000

4.4.4 Research Hypothesis Test

The model's path coefficients represent the assumed relationships between the latent variables in the model. The path coefficients provided by SmartPLS 4.1 are standardized. They range from -1 to +1. A positive path coefficient indicates that the starting latent variable of the path positively affects the latent variable indicated by the path arrow. Conversely, a negative path coefficient suggests a negative effect. A path coefficient of 0 implies no effect. The closer the absolute value of the path coefficient is to 1, the stronger the effect, while values closer to 0 indicate a weaker effect. Following the Bootstrapping analysis in SmartPLS 4.1, significant path coefficients are identified. In this study, the coefficients, standard deviations, T-values, and P-values of each path were obtained using a two-tailed T-test with a sub-sample size of 5000 to test the research hypothesis model through self-help analysis. As P-values between 0.05 and 0.1 were described as marginally significant and commonly utilized in research. (Pritschet et al., 2016; Olsson-Collentine., 2019), the significance of the findings will be interpreted with P-value<0.1 as marginally significant and P-value<0.05 as significant in this study.

Table 29 The Results of PLS-SEM Analyses

	Relationship	β	Standard deviation (STDEV)	T statistics (O/STDEV)	P values
H1	ERM -> EFFT	0.506***	0.037	13.657	0.000
	EFFT -> EI	0.316***	0.04	7.983	0.000
	ERM -> EI	0.45***	0.043	10.377	0.000
H2	ERM -> EFFT -> EI	0.160***	0.025	6.493	0.000
H3	GO x ERM -> EFFT	-0.108**	0.047	2.319	0.020
H4	ESE x ERM -> EFFT	0.092*	0.05	1.834	0.067
H5	ER x EFFT -> EI	0.044**	0.017	2.556	0.011
H6a	OP x EFFT -> EI	0.045***	0.015	3.059	0.002
H6b	EXV x EFFT -> EI	0.058***	0.022	2.608	0.009
Control Variables	Gender -> EI	0.074	0.067	1.107	0.269
	Major -> EI	0.058	0.064	0.906	0.365
	Work Expe. -> EI	0.135*	0.072	1.859	0.063
	Fam Inco -> EI	0.028	0.036	0.765	0.444

Par. Occup.1 -> EI	-0.339**	0.144	2.351	0.019
Par. Occup.2 -> EI	-0.461***	0.15	3.079	0.002
Par. Occup.3 -> EI	-0.123	0.159	0.776	0.438
Par. Occup.4 -> EI	-0.177	0.145	1.225	0.221

Notes: * $P < 0.1$, ** $P < 0.05$, *** $P < 0.01$.

Hypothesis 1 predicted that entrepreneurial role model would be positively related to entrepreneurial intention. As shown in Table 29, the direct effect of entrepreneurial role model and entrepreneurial intention is positive and significant ($\beta = 0.45$, $p\text{-value} < 0.01$). This high level of statistical significance indicates that entrepreneurial role model has a substantial positive impact on entrepreneurial intention. In other words, individuals who identify with and are inspired by entrepreneurial role models are significantly more likely to develop strong intentions to pursue entrepreneurship themselves. This finding supports hypothesis 1, which posited that the presence of an entrepreneurial role model would positively influence entrepreneurial intention. Regarding the control variables used in this study, it was discovered that entrepreneurial intention was significantly impacted by work experience ($\beta = 0.135$, $p\text{-value} < 0.1$). This suggests that individuals with no work experience are generally less likely to pursue entrepreneurship compared to those with either entrepreneurial or general work experience. This finding highlights the value of practical experience in fostering entrepreneurial intention. Additionally, parents' occupations were found to significantly influence entrepreneurial intention. For instance, parents' occupation 1 (entrepreneur) was significantly associated with entrepreneurial intention ($\beta = -0.339$, $p\text{-value} < 0.05$). This indicates that individuals whose parents are entrepreneurs are less likely to have strong entrepreneurial intention. Similarly, parent's occupation 2 (peasant) negatively influence entrepreneurial intention ($\beta = -0.461$, $p\text{-value} < 0.01$) as the higher parents' occupation 2 (peasant), lower individual's entrepreneurial intention.

The Mediating Effect Test

Hypothesis 2 proposed that effectuation would act as a mediator. To better understand the mediating effect of effectuation, this study tests how effectuation mediates the relationship between entrepreneurial role model and entrepreneurial intention. This mediation analysis provides deeper insights into the mechanisms through which entrepreneurial role model influences the formation of entrepreneurial intention. Table 29 also display the positive relationship between effectuation and entrepreneurial intention ($\beta = 0.316$, $p\text{-value} < 0.01$). This indicates that effectuation has a significant and positive impact on entrepreneurial intention, suggesting that individuals who engage in effectual thinking and behaviors are more likely to develop strong entrepreneurial intention. Additionally, the result shows a positive relationship between the entrepreneurial role model and effectuation ($\beta = 0.506$, $p\text{-value} < 0.01$). This finding suggests that entrepreneurial role model significantly influences individuals' propensity to engage in effectuation, highlighting the role of role models in shaping effectual behaviors.

We utilized Bootstrapping analysis (Streukens & Leroi-Werelds, 2016) to randomly generate subsamples from the raw data for analyzing mediation effects. Bootstrapping is a technique that can be employed to explore indirect effects, such as mediation effects, within structural models (Hair et al., 2021). For the purposes of this study, we drew

5000 samples to calculate mediation effects (Zhao et al., 2010; Kim & Hall, 2019) using the Bootstrapping replicated sampling method in SmartPLS 4.1 to assess the significance of these mediation effects. The study found a significant indirect relationship between entrepreneurial role model and entrepreneurial intention through effectuation based on the bootstrapping findings ($\beta = 0.16$, $p\text{-value} < 0.01$) as shown in Table 29, This result verifies hypothesis 2, confirming that effectuation mediates the relationship between entrepreneurial role model and entrepreneurial intention. This mediation effect underscores the importance of effectual thinking as a critical pathway through which role model inspires entrepreneurial aspiration.

The Moderating Effect Test

This study proposed the moderating effect of goal orientation and self-efficacy between entrepreneurial role model and effectuation. It also examined the moderating effects of entrepreneurial resilience, optimism, and extraversion on the relationship between effectuation and entrepreneurial intention.

Hypothesis 3 predicted the moderating effect of goal orientation on the relationship between the entrepreneurial role model and effectuation. The results in Table 29 indicate that goal orientation negatively moderates the relationship between the entrepreneurial role model and effectuation ($\beta = -0.108$, $p\text{-value} < 0.05$). This finding is statistically significant, indicating that as goal orientation increases, the positive impact of the entrepreneurial role model on effectuation decreases. Consequently, this result does not support hypothesis 3, which posited a different moderating effect of goal orientation.

Hypothesis 4 proposed entrepreneurial self-efficacy positively moderates the relationship between entrepreneurial role model and effectuation. As result in Table 29, entrepreneurial self-efficacy plays a positive role between entrepreneurial role model and effectuation. ($\beta = 0.092$, $p\text{-value} < 0.1$). Although the statistical significance is marginal, this positive moderation effect suggests that higher levels of entrepreneurial self-efficacy enhance the influence of an entrepreneurial role model on effectuation, supporting hypothesis 4. These results highlight the nuanced roles that different personal attributes play in shaping entrepreneurial behavior and decision-making processes. Understanding these moderating effects is crucial for developing more effective entrepreneurship training and development programs that consider individual differences in goal orientation and self-efficacy.

Hypothesis 5 predicted the positive moderating effect of entrepreneurial resilience between effectuation and entrepreneurial intention. Table 29 presents the significant result for the moderator which shows entrepreneurial resilience positively moderates the relationship between effectuation and entrepreneurial intention ($\beta = 0.044$, $p\text{-value} < 0.05$). This statistical significance indicates that as entrepreneurial resilience increases, the positive impact of effectuation on entrepreneurial intention is enhanced. Therefore, hypothesis 5 is supported by these findings. The positive moderation by entrepreneurial resilience suggests that individuals who exhibit higher resilience are better able to translate effectuation into entrepreneurial intention. This means that resilient entrepreneurs are more likely to take the iterative, adaptive approach of effectuation and turn it into a concrete intention to start a business.

Hypotheses 6a and 6b posit a positive moderating effect of personality traits (openness and extraversion) on the relationship between effectuation and entrepreneurial intention. Table 29 presents the significant result for the moderators, indicating that openness positively moderates the relationship between effectuation and entrepreneurial intention ($\beta = 0.045$, $p\text{-value} < 0.01$). This level of statistical significance suggests that openness significantly enhances the positive impact of effectuation on entrepreneurial intention. Consequently, hypothesis 6a is supported by these findings. The positive moderation by openness implies that individuals who are more open to new experiences and ideas are better able to convert the adaptive, flexible approach of effectuation into a strong entrepreneurial intention. This means that open-minded entrepreneurs are more likely to embrace the principles of effectuation—such as leveraging contingencies and experimenting with various approaches—and subsequently develop a firm intention to pursue entrepreneurial endeavors. Besides, the results show extraversion positively moderates the relationship between effectuation and entrepreneurial intention ($\beta = 0.058$, $p\text{-value} < 0.05$), which suggests that extraversion significantly enhances the positive impact of effectuation on entrepreneurial intention. Therefore, hypothesis 6b is supported. The positive moderation by extraversion implies that individuals who are more extraverted are better able to translate the principles of effectuation into strong entrepreneurial intentions. Extraverted entrepreneurs, characterized by their sociability, assertiveness, and enthusiasm, are likely to leverage their interpersonal skills and proactive approach to capitalize on the adaptive and flexible nature of effectuation. This, in turn, strengthens their intention to pursue entrepreneurial ventures.

These results underscore the importance of personality traits such as openness and extraversion in the entrepreneurial process. Understanding these moderating effects can inform the development of targeted entrepreneurship education and training programs that emphasize the cultivation of openness and extraversion-related skills. By enhancing traits like openness and extraversion, it may be possible to improve the effectiveness of effectuation strategies in fostering entrepreneurial intention. Recognizing and nurturing open and extraverted qualities can help educators and mentors better prepare aspiring entrepreneurs to engage with their environments, build networks, and seize opportunities, ultimately enhancing their potential for entrepreneurial success.

Summary

This study explores the complex relationships between entrepreneurial role model, effectuation, and entrepreneurial intention, considering the moderating effects of various personal attributes (Table 30). Our analysis confirms the significant roles these factors play in shaping entrepreneurial behavior.

First, we find that entrepreneurial role model positively and significantly influences entrepreneurial intention, supporting the hypothesis that exposure to successful entrepreneurs inspires individuals to pursue their own entrepreneurial ventures. This direct relationship highlights the importance of role models in fostering entrepreneurial aspirations. Additionally, the study demonstrates that effectuation, a flexible and adaptive approach to entrepreneurship, significantly enhances entrepreneurial intention. Individuals who engage in effectual thinking are more likely to develop strong entrepreneurial intention. Importantly, effectuation also mediates the relationship

between entrepreneurial role model and entrepreneurial intention. This mediation effect underscores that role model not only inspires but also guides aspiring entrepreneurs in adopting effectual behaviors, which in turn foster entrepreneurial intention.

The study further examines the moderating effects of several personal attributes. Goal orientation negatively moderates the relationship between entrepreneurial role model and effectuation, suggesting that individuals with a high goal orientation may find it challenging to adapt to the iterative and flexible nature of effectuation, reducing the positive impact of role model. On the other hand, entrepreneurial self-efficacy marginally enhances this relationship, indicating that confidence in one's entrepreneurial abilities can strengthen the influence of role model on effectuation. Entrepreneurial resilience is found to positively moderate the relationship between effectuation and entrepreneurial intention. Resilient individuals, who can withstand setbacks and remain persistent, are better able to turn effectual thinking into concrete entrepreneurial intention. This finding emphasizes the value of resilience in the entrepreneurial process. Openness to experience also plays a significant moderating role, positively influencing the relationship between effectuation and entrepreneurial intention. Open-minded individuals are more likely to embrace the adaptive strategies of effectuation, enhancing their entrepreneurial intentions. This suggests that fostering openness can be beneficial in entrepreneurial education and training programs. Extraversion is another key moderator, positively affecting the relationship between effectuation and entrepreneurial intention. Extraverted individuals, characterized by their sociability and assertiveness, are better positioned to leverage effectual behaviors into strong entrepreneurial intentions. This highlights the importance of interpersonal skills and proactive behavior in entrepreneurship.

We also consider the impact of control variables on entrepreneurial intention. Work experience is shown to significantly affect entrepreneurial intention, with individuals lacking work experience being less likely to pursue entrepreneurship. This finding underscores the importance of practical experience in developing entrepreneurial aspirations. Furthermore, parental occupation significantly influences entrepreneurial intention. Surprisingly, individuals with parents who are entrepreneurs or peasants are less likely to pursue entrepreneurship themselves. This negative association suggests that certain parental occupations might discourage entrepreneurial intentions, potentially due to perceived challenges or drawbacks observed in these professions.

In summary, this study provides a comprehensive understanding of the factors influencing entrepreneurial intention. The significant roles of entrepreneurial role model, effectuation, and personal attributes such as resilience, openness, and extraversion are highlighted. These findings suggest that targeted interventions, including mentorship programs and training that foster relevant personal traits, can effectively enhance entrepreneurial intentions and behaviors. Understanding these dynamics is crucial for developing supportive environments that encourage and sustain entrepreneurial endeavors, ultimately contributing to economic growth and innovation.

Table 30 Summary of Hypotheses Test Results

Hypotheses	The statement	Results
H1	Entrepreneurial role model has a positive influence on entrepreneurial intention.	Supported
H2	Effectuation mediates the relationship between entrepreneurial role model and entrepreneurial intention.	Supported
H3	Goal orientation positively moderates the relationship between entrepreneurial role model and effectuation.	Not Supported
H4	Entrepreneurial Self-efficacy positively moderates the relationship between entrepreneurial role model and effectuation.	Supported
H5	Entrepreneurial resilience positively moderates the relationship between effectuation and entrepreneurial intention.	Supported
H6a	Openness positively moderates the relationship between effectuation and entrepreneurial intention	Supported
H6b	Extraversion positively moderates the relationship between effectuation and entrepreneurial intention.	Supported



Chapter 5 Discussion and Conclusions

5.1 Discussion

Given the significant contribution of entrepreneurial behavior to economic development, understanding how various factors influence the formation of entrepreneurial intention is a critical area of inquiry. Entrepreneurship drives innovation, creates jobs, and stimulates economic growth, making it essential to comprehend the underlying dynamics that foster entrepreneurial aspirations. This study, grounded in the theory of effectuation, delves into the mechanisms through which entrepreneurial role models impact the development of entrepreneurial intention.

5.1.1 The Relationship Between Entrepreneurial Role Model and Entrepreneurial Intention

This study confirms a positive impact of entrepreneurial role model on entrepreneurial intention through comprehensive data analysis. Specifically, the individual with entrepreneurial role model exhibits higher levels of entrepreneurial intention. This finding underscores the significant role that entrepreneurial role model plays in inspiring and motivating potential entrepreneurs.

First, entrepreneurial the role model serves as a reference point, allowing individuals to form expectations about future entrepreneurial endeavors. Witnessing the success of the role model in their entrepreneurial activities fosters aspirations and enhances the intention to pursue entrepreneurship (Fellnhofer & Muller, 2018). Observing role model overcome challenges and achieve success provides tangible examples of what is possible, thereby increasing the perceived attainability of entrepreneurial goals.

Second, the cognitive and behavioral patterns demonstrated by the role model during their entrepreneurial journey influence individuals' perceptions, attitudes, and behaviors (Bandura, 1986). Positive role model inspires and stimulates individuals to adopt similar thoughts and behaviors, leading to stronger entrepreneurial motivation (Zapkau et al., 2017; Brunel et al., 2017). This process, known as observational learning or modeling, allows aspiring entrepreneurs to internalize the strategies and mindsets of their role models, fostering a proactive and resilient approach to entrepreneurship.

Third, entrepreneurial the role model offers informational and resource support. Research indicates that by observing and learning from the role model, potential entrepreneur can acquire the necessary knowledge and skills for entrepreneurship (Bandura, 1986; Chlosta, 2012). This transfer of knowledge reduces barriers to starting a business and provides valuable experiential insights, thereby enhancing individuals' enthusiasm and fostering entrepreneurial intention (Scherer et al., 1989; Bosma et al., 2012). The practical guidance and mentorship provided by role model can demystify the entrepreneurial process, making it more accessible and less daunting for newcomers.

These findings align with previous research, highlighting the importance of entrepreneurial role model in shaping entrepreneurial intention. Role models not only

provide inspiration and motivation but also serve as critical sources of practical knowledge and emotional support. They help bridge the gap between aspiration and action, encouraging individuals to take concrete steps toward realizing their entrepreneurial dreams.

5.1.2 Mediating Mechanism of Entrepreneurial Role Model and Entrepreneurial Intention

The empirical analysis in this study supports the mediating role of effectuation in the relationship between entrepreneurial role model and entrepreneurial intention. Effectuation, characterized by a flexible and adaptive approach to entrepreneurship, plays a crucial role in explaining how entrepreneurial role model influences entrepreneurial intention. This mediation highlights the importance of effectual thinking in translating the inspiration and guidance provided by role model into concrete entrepreneurial intention.

First, the study demonstrates that entrepreneurial role model offers valuable guidance and insights for successful entrepreneurship. By observing role model, individual learns to tackle challenges through an experimentation-oriented mode of thinking. This approach, central to effectuation, encourages aspiring entrepreneurs to embrace uncertainty and adapt their strategies based on real-time feedback. As individuals experiment and learn from their experiences, their confidence and willingness to pursue entrepreneurship are significantly enhanced.

Second, entrepreneurial role model demonstrates effective ways to manage and mitigate risks. This aspect of effectuation involves making decisions based on available means and focusing on controllable aspects of the venture, rather than predicting the future. By observing how role model navigates risks and uncertainties, individual gains confidence in the ability to handle future entrepreneurial venture. This risk management capability is critical in fostering entrepreneurial intention, as it reduces the fear of failure and promotes a proactive approach to challenges.

Third, the study highlights that by observing an entrepreneur's strategies to overcome resource constraints, individuals learn the importance of collaboration and networking. Effectual entrepreneurs often leverage their social networks and form strategic partnerships to access resources and support. This collaborative mindset is crucial for aspiring entrepreneurs, as it enables them to garner support from others and navigate the resource-scarce environment of new ventures. Learning from role models, individuals understand the value of building a strong network, which facilitates their path to entrepreneurship.

Fourth, the resourcefulness and adaptable strategies exhibited by entrepreneurial role model in uncertain environments serve as a powerful source of inspiration. Seeing role model successfully adapts to changing circumstances and creatively solves problems fuels individuals' motivation to start their own businesses. This adaptability, a core component of effectuation, helps aspiring entrepreneur develop a resilient and innovative mindset, essential for thriving in the dynamic world of entrepreneurship.

These findings align with previous research suggesting that entrepreneurial role models

motivate individuals to develop entrepreneurial perceptions and enthusiasm (Dohse & Walter, 2012; Wyrwich et al., 2018). By providing real-world examples of effectual thinking and adaptive strategies, role model significantly influences the way individuals perceive and approach entrepreneurship. Furthermore, this study expands the exploration of how individuals cultivate effectual thinking by emulating and learning from entrepreneurs. The mediating role of effectuation underscores the process through which entrepreneurial role model inspires and guides aspiring entrepreneurs. It highlights the importance of experiential learning and observational learning in developing the skills and mindset necessary for entrepreneurial success.

5.1.3 Boundary Conditions for Entrepreneurial Role Model and Entrepreneurial Intention

This study also examined the boundary conditions of the influence of entrepreneurial role models on entrepreneurial intention, shedding light on the contextual factors that enhance or limit this relationship.

First, the study uncovered that goal orientation negatively moderated the relationship between entrepreneurial the role model and effectuation. That is, higher goal orientation diminishes the influence of an entrepreneurial role model on an individual's effectuation decision logic. This finding suggests that a strong sense of purpose held by individuals can lead them to focus more on outcomes and external validation, such as evaluations by others, and ignore the effective actions and flexibility in dealing with uncertainty demonstrated by entrepreneurial role model, resulting in a conservative mindset that avoids risk and embraces innovation.

Our study echoes earlier research that suggests individuals with a performance-prove goal orientation are more likely to choose goal-determined or repetitive tasks to demonstrate competence and avoid failure and negative evaluations (Chadwick & Raver, 2015). These individuals often prefer environments where they can clearly measure their success and receive positive reinforcement, which can limit their willingness to engage in the trial-and-error processes typical of entrepreneurial activities. Furthermore, this study expands on the understanding of goal orientation by illustrating that individuals with high goal orientation will selectively learn from entrepreneurial role models. They may focus primarily on aspects that align with their goal-driven mindset, such as strategic planning and achieving measurable outcomes, while neglecting the more dynamic and flexible approaches that are crucial for navigating the uncertainties inherent in entrepreneurship. This selective learning process can inhibit the development of effectual thinking, which emphasizes adaptability, resourcefulness, and the ability to leverage contingencies.

Second, entrepreneurial self-efficacy was found to positively moderate the relationship between entrepreneurial role model and effectuation. Specifically, the impact of an entrepreneurial role model on individuals' effectual thinking is significantly amplified when they possess higher entrepreneurial self-efficacy. Entrepreneurial self-efficacy, or the belief in one's ability to successfully perform entrepreneurial tasks, plays a crucial role in how effectively individuals can translate the inspiration and guidance from role models into practical entrepreneurial strategies. These findings suggest that strong entrepreneurial beliefs and confidence motivate individuals to actively draw from their

entrepreneurial role models to form effective entrepreneurial thinking logics. When individuals believe in their entrepreneurial capabilities, they are more likely to internalize and implement the adaptive and flexible strategies demonstrated by their role models. This proactive engagement not only enhances their ability to recognize and exploit entrepreneurial opportunities but also fosters innovative behaviors and resilience in the face of uncertainty.

Our findings are consistent with previous literature that high entrepreneurial beliefs and confidence help individuals to be more proactive in identifying entrepreneurial opportunities (Ozgen & Baron, 2007) and developing innovative behaviors (Globocnik & Salomo, 2015; Li et al., 2020) by learning from prior experiences (Ginges et al., 2011). The present study builds on this foundation by further arguing that individuals with high entrepreneurial self-efficacy, through learning and exposure to entrepreneurial role models, develop effective effectual thinking. They become more open to challenges and flexible in problem-solving in uncertain environments, thus expanding the research on the impact of entrepreneurial self-efficacy on entrepreneurial thinking development. Furthermore, the study highlights that entrepreneurial self-efficacy not only enhances the ability to recognize opportunities but also bolsters the capacity to navigate the complexities of the entrepreneurial process. Individuals with high self-efficacy are more likely to view challenges as opportunities for growth rather than as obstacles, which aligns with the principles of effectuation. This mindset encourages a trial-and-error approach, allowing aspiring entrepreneurs to pivot and adapt their strategies as they learn from their experiences and the successes and failures of their role models.

Third, the study validated the relationship between entrepreneurial resilience and its positive moderation of the connection between effectuation and entrepreneurial intention. Specifically, it was found that higher levels of entrepreneurial resilience, or tenacity, lead to a greater entrepreneurial willingness and a stronger engagement in effectual thinking. This finding underscores the crucial role of resilience in facilitating a flexible response to uncertain environments, enabling rational access to resources, and executing effective actions in challenging situations. These capabilities are essential for enhancing entrepreneurial enthusiasm and willingness to pursue new ventures.

Our findings are consistent with previous literature that highlights the importance of resilience in entrepreneurship. A high degree of resilience helps individuals better cope with unforeseen situations, navigate setbacks, and maintain their determination to achieve their entrepreneurial goals (Monllor & Murphy, 2017). Resilient entrepreneurs are more likely to view challenges as opportunities for growth and learning, rather than insurmountable obstacles. This mindset not only strengthens their intention to engage in entrepreneurial activities but also enhances their ability to adapt and thrive in dynamic and unpredictable business environments.

Finally, the study confirmed that extraversion and openness positively moderate the relationship between effectuation and entrepreneurial intention. Individuals with extraverted and open personalities exhibited stronger entrepreneurial intentions when

engaging in effectual decision-making logic. This finding suggests that those who possess traits of extraversion or openness are more adept at leveraging effectuation logic to develop robust entrepreneurial motivation and intention.

This result aligns with previous research indicating that extroverted individuals typically experience positive emotions, excitement, and enjoyment in various endeavors and social interactions (McCrae & John, 1992). These traits help them identify and exploit entrepreneurial opportunities effectively. Extroverts are often enthusiastic and proactive in their pursuits, traits that are beneficial in the dynamic and uncertain environment of entrepreneurship. Similarly, individuals with openness personalities tend to have an open mindset, are receptive to change, and excel in creative problem-solving (Slavec et al., 2017). Their openness drives them to embrace new opportunities and challenges, which is crucial for entrepreneurial success. Individuals with openness personalities are generally more resilient and persistent, qualities that enhance their willingness to pursue entrepreneurial activities despite potential setbacks.

5.2 Theoretical Contributions

This study enhances the scope of research on entrepreneurial intention based on the original work and contributes to the study of entrepreneurial intention in three main aspects.

First, this study delves into the influence mechanism of entrepreneurial role model on entrepreneurial intention from the perspective of entrepreneurial decision-making logic. Previous research has examined the relationship between role model and entrepreneurial intention within various theoretical frameworks, including social learning theory, the theory of planned behavior, and others (Scherer et al., 1989; Boissin et al., 2011; Mueller et al., 2014) which highlighted how role models can inspire and motivate individuals through observational learning, perceived behavioral control, and subjective norms. This study expands on existing literature by applying effectuation theory to examine the influence mechanism. Effectuation theory, which emphasizes the use of available means and flexibility in decision-making under uncertainty, provides a novel lens through which to understand how entrepreneurial role models impact intention formation. By focusing on the principles of effectuation—such as leveraging contingencies, focusing on affordable loss, and forming partnerships—this study broadens the theoretical understanding of the impact of entrepreneurial role models on entrepreneurial intentions.

This approach not only highlights the importance of role models in providing practical examples and inspiration but also underscores their role in shaping the cognitive processes and decision-making strategies of potential entrepreneurs. By incorporating effectuation theory, this research offers a more comprehensive view of how role models influence entrepreneurial intentions, considering both the motivational and cognitive aspects of entrepreneurship. Furthermore, this study contributes to the literature by demonstrating how the application of effectuation theory can enhance our understanding of the dynamic and context-dependent nature of entrepreneurial intention formation. It underscores the importance of examining multiple theoretical perspectives to capture the complex interplay between individual, social, and contextual factors in entrepreneurship.

Second, this study investigates the mediating role of effectuation between entrepreneurial role model and entrepreneurial intention. While prior research has examined the effects of role model on entrepreneurial intention in terms of their attitudes, perceptions, or behaviors (Zozimo et al., 2017; Nabi et al., 2019), the specific mechanisms through which entrepreneurial role model can enhance entrepreneurial intention by influencing individuals' effectual thinking, such as adaptively dealing with uncertainty, efficiently utilizing resources, managing risks, and taking decisive actions, have not been fully understood. Through in-depth exploration and empirical analyses, this study demonstrates that effectuation serves as a mediating factor between entrepreneurial role model and entrepreneurial intention. This not only sheds light on the reasons behind entrepreneurial intention but also advances the understanding of the role of entrepreneurial role model in shaping individual effectual thinking and subsequently impacting entrepreneurial intention. Therefore, this study underscores the necessity of fostering effectual thinking in potential entrepreneurs, which can be significantly influenced by role models. This contribution enriches the existing body of literature by offering a nuanced perspective on the interplay between role model, effectuation, and entrepreneurial intention, and it opens avenues for future research to further investigate these complex relationships.

Finally, this study taps into the moderating role of entrepreneurial self-efficacy, goal orientation, entrepreneurial resilience, and personality traits (extraversion and openness) between entrepreneurial role model, effectuation, and entrepreneurial willingness. These findings contribute to the academic understanding of the boundaries of entrepreneurial willingness and offer insights into the formation of entrepreneurial willingness. Our study confirms that entrepreneurial self-efficacy positively moderates the relationship between entrepreneurial role model and effectuation, indicating that individuals with strong entrepreneurial beliefs and self-confidence are more likely to be influenced positively by entrepreneurial role models. Conversely, goal orientation negatively moderates the relationship between entrepreneurial role model and effectuation, suggesting that a strong goal orientation may limit individuals in leveraging the knowledge and experience of role models, hindering flexibility and creative problem-solving, and therefore impeding the development of effectuation. Additionally, the study finds that entrepreneurial resilience and personality traits such as extraversion and openness positively moderate the relationship between effectuation and entrepreneurial intention. Individuals who can positively adapt to adversity are more likely to enhance the effectuation of entrepreneurial intention. Furthermore, effectuation has a greater impact on increasing entrepreneurial intention when individuals are more open or extroverted.

5.3 Practical Implications

This study has implications for entrepreneurship education and practice using a sample of university student populations. First, this study can provide a better understanding of how entrepreneurial role model and effectual thinking influence individuals' entrepreneurial intention. This knowledge can be used to develop more effective programs and interventions to promote entrepreneurship. For instance, entrepreneurship education can integrate case studies and guest lectures from successful entrepreneurs, showcasing effectual thinking. The stories of these role models

navigating uncertainty, leveraging resources, and adapting can inspire and equip students for their entrepreneurial journeys (Bosma et al., 2012). Mentorship programs that pair aspiring entrepreneurs with experienced mentors offer guidance and support to develop necessary skills (St-Jean & Audet, 2012). Alternatively, workshops that focus on promoting effective thinking can be organized to encourage potential entrepreneurs to experiment, pivot, and learn from failure. Additionally, governments and non-profit organizations can implement supportive policies and provide resources to foster innovative and flexible entrepreneurship, while steering clear of rigid business plans. (Shane, 2009).

This study confirms the important role of effectuation between entrepreneurial role model and entrepreneurial intention. As Internet use becomes more widespread, people are increasingly exposed to entrepreneurial role models, such as celebrities and self-published entrepreneurs, in addition to proximate people such as parents, relatives, and friends (Scherer et al., 1989), and extensive exposure to role model leads to more entrepreneurial information, more positive attitudes toward entrepreneurship (Krueger, 1993), and higher entrepreneurial intention (Minniti, 2005). Therefore, this study calls on relevant organizations, in the process of creating positive images of entrepreneurial role model and reporting on their achievements, to consciously refine the content of these role models in terms of experimentation, flexibility in dealing with uncertainty, focusing on cooperating with others, and awareness of reasonable risk, thus laying the foundation of entrepreneurial mindset formation for the young generation and enhancing their entrepreneurial willingness. Through understanding the influence of entrepreneurial role model, we can help to improve their entrepreneurial willingness.

Second, this study contributes to the understanding of the boundary conditions that influence the relationship between entrepreneurial role model, effectuation, and entrepreneurial intention, thereby aiding in the identification and reduction of entrepreneurial barriers. Real-world businesses often face environmental uncertainties (Zhang et al., 2019) such as unpredictable market responses, a lack of evidence-based organizational practices, and resource constraints in the entrepreneurial process. As a result, entrepreneurial decision-making necessitates the evaluation and selection of emerging opportunities, as well as flexibility in responding to them in a dynamic and uncertain entrepreneurial environment. This study asserts that while society advocates for entrepreneurship and encourages individuals to learn from successful entrepreneurs, there is also a need to guide the individual such as the student in learning from entrepreneurial role model in a rational manner, analyzing problems dialectically, and applying acquired knowledge flexibly in practical settings. This approach is crucial for fostering effective entrepreneurial thinking and logic, while mitigating the risks of stereotypical imitation or rigid adherence to rules. Additionally, individuals should recognize and respect the differences in personality, conduct a comprehensive assessment of their own capabilities and strengths, and choose a career path that aligns with their personal development.

Third, this study can be used to enhance the design and implementation of entrepreneurship education and training programs to ensure that they prioritize the development of effective thinking and other crucial entrepreneurial skills. The study

emphasizes the importance of educators introducing appropriate entrepreneurial role model in entrepreneurship education and practice to positively influence student populations. Furthermore, educators should provide students with a more rational and comprehensive understanding of entrepreneurship through lectures, trainings, or face-to-face contact opportunities (Aukenn et al., 2006) to strengthen their entrepreneurial intention. Moreover, during entrepreneurship courses and practical projects, emphasis should be placed on shaping and cultivating students' effectual thinking. This involves guiding them to be more hands-on, teaching them how to manage risks effectively, make rational use of resources in uncertain environments, and foster creative problem-solving skills. Additionally, attention should be given to the development of students' personality and attributes, such as exploring their personal beliefs, providing training programs on resilience to frustration and stress, and enhancing their adaptability in dealing with uncertain situations. The cultivation of these mindsets and skills will not only support students in their entrepreneurial pursuits but also benefit their long-term career growth and development.

5.4 Research Limitations and Future Research Perspectives

Several limitations need to be acknowledged in our study. Recognizing and further exploring these potential areas for improvement could enhance the strength of our research on the impact of entrepreneurial role model and effectuation on entrepreneurial intention.

First, the perceptual ratings of the independent variables, mediators, moderators, and dependent variables were obtained from college students. It is possible that our findings may have been influenced by common method variance (CMV; Podsakoff et al., 2012). To address this potential limitation, future research should consider collecting data from different sources, such as teachers, parents, or peers, which could help mitigate the influence of CMV on the results. Implementing procedural remedies, such as ensuring respondent anonymity and improving scale items, could also help reduce CMV (Podsakoff et al., 2012).

Second, while our cross-sectional design allows us to identify relationships between variables, it does not permit causal inferences. We cannot conclusively assert a causal relationship between entrepreneurial role model, effectuation, and entrepreneurial intention based on our study findings. Therefore, we suggest that future studies explore longitudinal or experimental research designs to establish causality and investigate the impact of structural changes over time (Shadish et al., 2002). Longitudinal studies could provide insights into how these relationships evolve and the long-term effects of role model on entrepreneurial intention.

Third, our data were collected exclusively from Chinese universities, raising concerns about the generalizability of our results to other settings. The cultural context of China may have unique characteristics that influence entrepreneurial intentions differently compared to other regions. To address this limitation, we propose that future studies test the model using more diverse population samples from various regions and countries. This approach has the potential to enhance the precision and robustness of the analyses (Henrich et al., 2010). By incorporating a more diverse sample, researchers can examine whether the observed relationships hold true across different cultural and

socio-economic contexts.

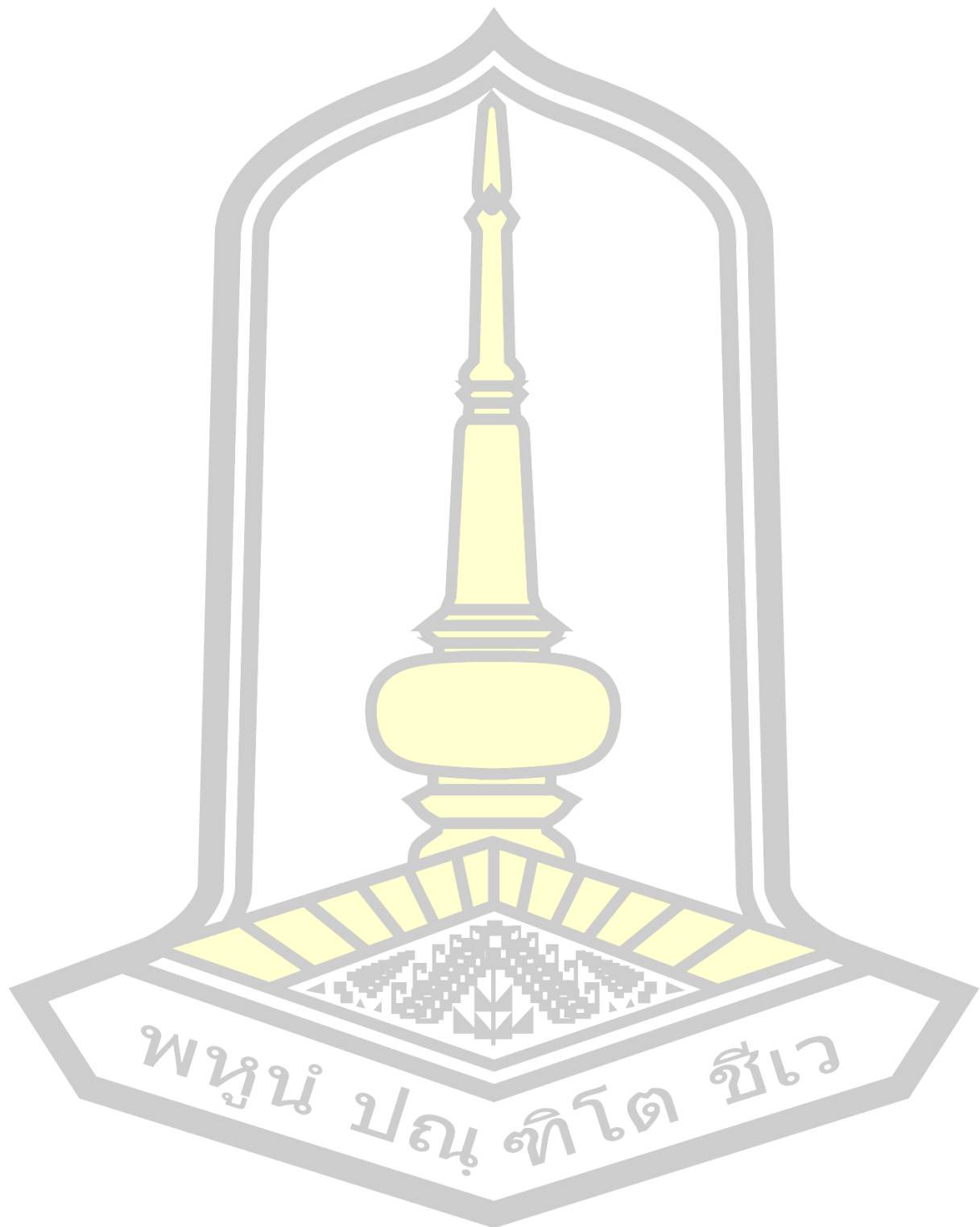
Finally, while our study focuses on the positive influences of entrepreneurial role model and effectuation, it does not account for potential negative influences or other contextual factors that might impact entrepreneurial intention. Future research should consider exploring additional variables, such as social support, and economic conditions, to provide a more comprehensive understanding of the factors influencing entrepreneurial intention (Krueger et al., 2000). Including these variables could offer a more nuanced view of the entrepreneurial intention formation process and identify potential areas for intervention and support.

5.5 Conclusions

In conclusion, this study comprehensively explores the multifaceted roles of entrepreneurial role models in the context of entrepreneurial intention research. The findings indicate that, consistent with the theory of effectuation, entrepreneurial role model has a significant positive impact on entrepreneurial intention. Specifically, effectuation mediates the relationship between entrepreneurial role model and entrepreneurial intention, illustrating the crucial role of adaptive decision-making processes in the entrepreneurial journey. Furthermore, the study identifies that the relationship between entrepreneurial role model and effectuation is moderated by entrepreneurial self-efficacy and goal orientation. These moderating factors highlight the importance of individual confidence in entrepreneurial abilities and the strategic orientation towards achieving entrepreneurial goals. Additionally, the relationship between effectuation and entrepreneurial intention is positively moderated by entrepreneurial resilience, openness, and extraversion, key traits within the Big Five personality framework. This underscores the role of personal resilience, openness to new experiences, and sociability in enhancing the effectiveness of effectual thinking on entrepreneurial intention.

By elucidating these relationships, this study makes a valuable contribution to understanding the influence of entrepreneurial role model on an individual and the complex processes involved in the formation of entrepreneurial intention. It extends existing literature by integrating the effectuation perspective and highlighting the moderating effects of personality traits and cognitive factors. This nuanced understanding offers practical implications for entrepreneurship education and practice. It suggests that fostering entrepreneurial self-efficacy, goal orientation, resilience, openness, and extraversion can enhance the effectiveness of role model in inspiring entrepreneurial intention. Moreover, these insights have broad applications across various sectors of society. For educators, incorporating effectuation principles and fostering relevant personality traits in entrepreneurship curricula can better prepare students for the uncertainties of entrepreneurial ventures. For policymakers and practitioners, recognizing the value of entrepreneurial role model and supporting environments that cultivate these traits can promote a more robust entrepreneurial ecosystem.

REFERENCES



- Abbasianchavari, A., & Moritz, A. (2021). The impact of role models on entrepreneurial intentions and behavior: a review of the literature. *Management Review Quarterly*, 71, 1-40.
- Ajzen, I. (1980). *Understanding attitudes and predicting social behavior*. Englewood cliffs.
- Ajzen, I. (1987). Attitudes, traits, and actions: Dispositional prediction of behavior in personality and social psychology. In *Advances in experimental social psychology* (Vol. 20, pp. 1-63). Academic Press.
- Ajzen, I. (1991). The theory of planned behavior. *Organizational behavior and human decision processes*, 50(2), 179-211.
- Al-Jubari, I., Hassan, A., & Liñán, F. (2019). Entrepreneurial intention among university students in Malaysia: integrating self-determination theory and the theory of planned behavior. *International entrepreneurship and management journal*, 15, 1323-1342.
- Altinay, L., Madanoglu, M., Daniele, R., & Lashley, C. (2012). The influence of family tradition and psychological traits on entrepreneurial intention. *International Journal of hospitality management*, 31(2), 489-499.
- Ames, C. (1992). Classrooms: Goals, structures, and student motivation. *Journal of educational psychology*, 84(3), 261.
- Ames, C., & Archer, J. (1988). Achievement goals in the classroom: Students' learning strategies and motivation processes. *Journal of educational psychology*, 80(3), 260.
- Amofah, K., & Saladrighes, R. (2022). Impact of attitude towards entrepreneurship education and role models on entrepreneurial intention. *Journal of Innovation and Entrepreneurship*, 11(1), 1-30.
- Anderman, E. M., & Maehr, M. L. (1994). Motivation and schooling in the middle grades. *Review of educational Research*, 64(2), 287-309.
- Antoncic, B., Bratkovic Kregar, T., Singh, G., & DeNoble, A. F. (2015). The big five personality–entrepreneurship relationship: Evidence from Slovenia. *Journal of small business management*, 53(3), 819-841.
- Anwar, G., & Abdullah, N. N. (2021). Inspiring future entrepreneurs: The effect of experiential learning on the entrepreneurial intention at higher education. *International Journal of English Literature and Social Sciences*, 6.
- Armstrong, J. S., & Overton, T. S. (1977). Estimating nonresponse bias in mail surveys. *Journal of marketing research*, 14(3), 396-402.
- Arrighetti, A., Caricati, L., Landini, F., & Monacelli, N. (2016). Entrepreneurial intention in the time of crisis: a field study. *International Journal of Entrepreneurial Behavior & Research*, 22(6), 835-859.
- Asimakopoulos, P., Asimakopoulos, S., & Fernandes, F. D. S. (2019). Cash holdings of listed and unlisted firms: new evidence from the euro area. *The European Journal of Finance*, 25(17), 1708-1729.
- Asma, Peng, X., Hassan, S., Akhtar, S., Sarwar, A., Khan, M. A., & Khan, B. U. (2019). Determinants of social entrepreneurial intentions for educational programs. *Journal of Public Affairs*, 19(2), e1925.
- Autio, E., H. Keeley, R., Klosthen, M., GC Parker, G., & Hay, M. (2001). Entrepreneurial intent among students in Scandinavia and in the USA. *Enterprise and Innovation Management Studies*, 2(2), 145-160.
- Awotoye, Y., & Singh, R. P. (2017). Entrepreneurial resilience, high impact challenges, and firm performance. *Journal of Management Policy and Practice*, 18(2), 28-37.
- Ayala, J. C., & Manzano, G. (2014). The resilience of the entrepreneur. Influence on the success of the business. A longitudinal analysis. *Journal of economic psychology*, 42, 126-135.
- Bandura, A. (1977). Self-efficacy: toward a unifying theory of behavioral change. *Psychological review*, 84(2), 191.
- Bandura, A. (1986). *Social Foundations of Thought and Action: A Social Cognitive Theory*, Prentice-Hall, Englewood Cliffs, NJ.
- BarNir, A., Watson, W. E. and Hutchins, H. M. (2011). Mediation and moderated mediation in

- the relationship among role models, self-efficacy, entrepreneurial career intention, and gender. *Journal of Applied Social Psychology*, 41(2): 270–297.
- Baron, R. A. (2008). The role of affect in the entrepreneurial process. *Academy of management Review*, 33(2), 328–340.
- Barrick, M. R., & Mount, M. K. (1991). The big five personality dimensions and job performance: a meta-analysis. *Personnel psychology*, 44(1), 1–26. *Educational and psychological measurement*, 52(1), 229–237.
- Barrick, M. R., & Mount, M. K. (1993). Autonomy as a moderator of the relationships between the Big Five personality dimensions and job performance. *Journal of applied Psychology*, 78(1), 111.
- Barrick, M. R., Mount, M. K., & Judge, T. A. (2001). Personality and performance at the beginning of the new millennium: What do we know and where do we go next?. *International Journal of Selection and assessment*, 9(1-2), 9–30.
- Barton, M., Schaefer, R., & Canavati, S. (2018). To be or not to be a social entrepreneur: motivational drivers amongst American business students. *Entrepreneurial Business & Economics Review*, 6(1).
- Bateman, T. S., & Zeithaml, C. P. (1989). The psychological context of strategic decisions: A model and convergent experimental findings. *Strategic management journal*, 10(1), 59–74.
- Bell, A. P. (1970). Role model ship and interaction in adolescence and young adulthood. *Developmental Psychology*, 2(1), 123.
- Bendersky, C., & Shah, N. P. (2013). The downfall of extraverts and rise of neurotics: The dynamic process of status allocation in task groups. *Academy of Management Journal*, 56(2), 387–406.
- Berends, H., Jelinek, M., Reymen, I., & Stultiëns, R. (2014). Product innovation processes in small firms: Combining entrepreneurial effectuation and managerial causation. *Journal of Product Innovation Management*, 31(3), 616–635.
- Bergmann H, Sternberg R (2007) The changing face of entrepreneurship in Germany. *Small Bus Econ* 28(2–3):205–221.
- Berry, C. M., Kim, A., Wang, Y., Thompson, R., & Mobley, W. H. (2013). Five-factor model personality measures and sex-based differential prediction of performance. *Applied psychology*, 62(1), 13–43.
- Beugelsdijk, S. (2007). Entrepreneurial culture, regional innovativeness and economic growth. *Journal of Evolutionary Economics*, 17(2), 187–210.
- Bird, B. (1988). Implementing entrepreneurial ideas: The case for intention. *Academy of management Review*, 13(3), 442–453.
- Bird, B. J. (1992). The operation of intentions in time: The emergence of the new venture. *Entrepreneurship Theory and practice*, 17(1), 11–20.
- Bleidorn, W., Hopwood, C. J., & Lucas, R. E. (2018). Life events and personality trait change. *Journal of personality*, 86(1), 83–96.
- Bleidorn, W., Schwaba, T., Zheng, A., Hopwood, C. J., Sosa, S. S., Roberts, B. W., & Briley, D. A. (2022). Personality stability and change: A meta-analysis of longitudinal studies. *Psychological bulletin*, 148(7-8), 588.
- Block JH, Hoogerheide L, Thurik R (2013) Education and entrepreneurial choice: an instrumental variables analysis. *Int Small Bus J* 31(1):23–33.
- Bocken, N. M. (2015). Sustainable venture capital—catalyst for sustainable start-up success?. *Journal of cleaner production*, 108, 647–658.
- Boissin, J. P., Branchet, B., Delanoë, S., & Velo, V. (2011). Gender's perspective of role model influence on entrepreneurial behavioral beliefs. *International Journal of Business*, 16(2), 182.
- Bosma, N., Hessels, J., Schutjens, V., Van Praag, M., & Verheul, I. (2012). Entrepreneurship and role models. *Journal of economic psychology*, 33(2), 410–424.
- Boyd, N. G., & Vozikis, G. S. (1994). The influence of self-efficacy on the development of entrepreneurial intentions and actions. *Entrepreneurship theory and practice*, 18(4), 63–77.
- Brandstätter, H. (2011). Personality aspects of entrepreneurship: A look at five meta analyses.

- Personality and Individual Differences, 51(3), 222–230.
- Branicki, L. J., Sullivan-Taylor, B., & Livschitz, S. R. (2017). How entrepreneurial resilience generates resilient SMEs. *International Journal of Entrepreneurial Behavior & Research*, 24(7), 1244-1263.
- Braun, I., & Sieger, P. (2021). Under pressure: Family financial support and the ambidextrous use of causation and effectuation. *Strategic Entrepreneurship Journal*, 15(4), 716-749.
- Brett, J. F., & VandeWalle, D. (1999). Goal orientation and goal content as predictors of performance in a training program. *Journal of applied psychology*, 84(6), 863.
- Brettel, M., Mauer, R., Engelen, A., & Küpper, D. (2012). Corporate effectuation: Entrepreneurial action and its impact on R&D project performance. *Journal of business venturing*, 27(2), 167-184.
- Brockner, J., Higgins, E. T., & Low, M. B. (2004). Regulatory focus theory and the entrepreneurial process. *Journal of Business Venturing*, 19, 203-220.
- Brunel, O., Laviolette, E. M., & Radu-Lefebvre, M. (2017). Role models and entrepreneurial intention: the moderating effects of experience, locus of control and self-esteem. *Journal of enterprising culture*, 25(02), 149-177.
- Bryant, A. L., & Zimmerman, M. A. (2003). Role models and psychosocial outcomes among African American adolescents. *Journal of Adolescent Research*, 18(1), 36-67.
- Bui, H. T. (2017). Big Five personality traits and job satisfaction: Evidence from a national sample. *Journal of General Management*, 42(3), 21-30.
- Bullough, A., & Renko, M. (2013). Entrepreneurial resilience during challenging times. *Business Horizons*, 56(3), 343-350.
- Bullough, A., Renko, M., & Myatt, T. (2014). Danger zone entrepreneurs: The importance of resilience and self-efficacy for entrepreneurial intentions. *Entrepreneurship theory and practice*, 38(3), 473-499.
- Burks, A. W. (1977). Chance, cause, reason: An inquiry into the nature of scientific evidence.
- Burnette, J. L., Pollack, J. M., Forsyth, R. B., Hoyt, C. L., Babij, A. D., Thomas, F. N., & Coy, A. E. (2020). A growth mindset intervention: Enhancing students' entrepreneurial self-efficacy and career development. *Entrepreneurship Theory and Practice*, 44(5), 878-908.
- Butz, N. T., Hanson, S., Schultz, P. L., & Warzynski, M. M. (2018). Beyond the Big Five: does grit influence the entrepreneurial intent of university students in the US?. *Journal of Global Entrepreneurship Research*, 8, 1-16.
- Buunk, A. P., Peiró, J. M., & Griffioen, C. (2007). A positive role model may stimulate career-oriented behavior I. *Journal of Applied Social Psychology*, 37(7), 1489-1500.
- Cai, L., Guo, R., Fei, Y., & Liu, Z. (2017). Effectuation, exploratory learning and new venture performance: evidence from China. *Journal of Small Business Management*, 55(3), 388-403.
- Caliendo, M., Kritikos, A. S., Rodriguez, D., & Stier, C. (2023). Self-efficacy and entrepreneurial performance of start-ups. *Small Business Economics*, 61(3), 1027-1051.
- Cardon, M. S., & Kirk, C. P. (2015). Entrepreneurial passion as mediator of the self-efficacy to persistence relationship. *Entrepreneurship theory and practice*, 39(5), 1027-1050.
- Carr, J. C., & Sequeira, J. M. (2007). Prior family business exposure as intergenerational influence and entrepreneurial intent: A theory of planned behavior approach. *Journal of business research*, 60(10), 1090-1098.
- Carroll, G. R., & Mosakowski, E. (1987). The career dynamics of self-employment. *Administrative science quarterly*, 570-589.
- Chadwick, I. C., & Raver, J. L. (2015). Motivating organizations to learn: Goal orientation and its influence on organizational learning. *Journal of management*, 41(3), 957-986.
- Chandler, G. N., DeTienne, D. R., McKelvie, A., & Mumford, T. V. (2011). Causation and effectuation processes: A validation study. *Journal of business venturing*, 26(3), 375-390.
- Chen Y C. (2005). Why some failed entrepreneurs can bounce back but others cannot? Constructing entrepreneurial resilience after business failure, <http://ir.lib.cyut.edu.tw:8080/bitstream/310901800/9679/1/3.pdf>.
- Chen, C. C., Greene, P. G., & Crick, A. (1998). Does entrepreneurial self-efficacy distinguish

- entrepreneurs from managers?. *Journal of business venturing*, 13(4), 295-316.
- Chen, J., Liu, L., & Chen, Q. (2021). The effectiveness of effectuation: a meta-analysis on contextual factors. *International Journal of Entrepreneurial Behavior & Research*, 27(3), 777-798.
- Chen, N., Ding, G., & Li, W. (2016). Do negative role models increase entrepreneurial intentions? The moderating role of self-esteem. *Basic and Applied Social Psychology*, 38(6), 337-350.
- Chin, W. W. (1998a). Issues and opinion on structural equation modeling. *Management Information Systems Quarterly*, 22(1), 7-16.
- Chlosta, S., Patzelt, H., Klein, S. B., & Dormann, C. (2012). Parental role models and the decision to become self-employed: The moderating effect of personality. *Small Business Economics*, 38, 121-138.
- Christiansen, J. B. (1979). Television role models and adolescent occupational goals. *Human Communication Research*, 5(4), 335-337.
- Ciavarella, M. A., Buchholtz, A. K., Riordan, C. M., Gatewood, R. D., & Stokes, G. S. (2004). The Big Five and venture survival: Is there a linkage? *Journal of Business Venturing*, 19, 465-483.
- Ciszewska-Mlinaric, M., Obloj, K., & Wasowska, A. (2016). Effectuation and causation: Two decision-making logics of INVs at the early stage of growth and internationalisation. *Journal of East European Management Studies*, 275-297.
- Coad, A. F. (1999). Some survey evidence on the learning and performance orientations of management accountants. *Management Accounting Research*, 10(2), 109-135.
- Cohen, J. (1988). *Statistical Power Analysis for the Behavioral Sciences* (2nd Edition). Hillsdale, NJ: Lawrence Earlbaum Associates.
- Cohen, S., & Wills, T. A. (1985). Stress, social support, and the buffering hypothesis. *Psychological bulletin*, 98(2), 310.
- Costa, P. T., Jr., & McCrae, R. R. (1992). *Revised NEO personality inventory (NEO-PI-R) and NEO five-factor (NEO-FFI) inventory professional manual*. Odessa, FL: Psychological Assessment Resources.
- Criaco, G., Sieger, P., Wennberg, K., Chirico, F. and Minola, T. (2017), "Parents' performance in entrepreneurship as a 'double-edged sword' for the intergenerational transmission of entrepreneurship", *Small Business Economics*, Vol. 49 No. 4, pp. 841-864.
- Cui, L., Su, S. I. I., Feng, Y., & Hertz, S. (2019). Causal or effectual? Dynamics of decision-making logics in servitization. *Industrial Marketing Management*, 82, 15-26.
- Culbertson, S. S., Smith, M. R., & Leiva, P. I. (2011). Enhancing entrepreneurship: The role of goal orientation and self-efficacy. *Journal of Career Assessment*, 19(2), 115-129.
- D'andria, A., Gabarret, I., & Vedel, B. (2018). Resilience and effectuation for a successful business takeover. *International Journal of Entrepreneurial Behavior & Research*, 24(7), 1200-1221.
- Davidsson, P. (2004). *Researching entrepreneurship* (Vol. 5). New York: Springer.
- de la Cruz, M. E., Jover, A. J. V., & Gras, J. M. G. (2018). Influence of the entrepreneur's social identity on business performance through effectuation. *European Research on Management and Business Economics*, 24(2), 90-96.
- De Noble, A. F., Jung, D., & Ehrlich, S. B. (1999). Entrepreneurial self-efficacy: The development of a measure and its relationship to entrepreneurial action. *Frontiers of entrepreneurship research*, 1999(1), 73-87.
- Debicki, B. J., Kellermanns, F. W., Barnett, T., Pearson, A. W., & Pearson, R. A. (2016). Beyond the Big Five: The mediating role of goal orientation in the relationship between core self-evaluations and academic performance. *The International Journal of Management Education*, 14(3), 273-285.
- Deligianni, I., Voudouris, I., & Lioukas, S. (2017). Do effectuation processes shape the relationship between product diversification and performance in new ventures?. *Entrepreneurship Theory and Practice*, 41(3), 349-377.
- DeNeve, K. M., & Cooper, H. (1998). The happy personality: a meta-analysis of 137

- personality traits and subjective well-being. *Psychological bulletin*, 124(2), 197.
- DeTienne, D. R., Chandler, G. N., & McKelvie, A. (2012, July). The impact of motivation, innovation, and causation and effectuation approaches on exit strategies. In *Academy of Management Proceedings* (Vol. 2012, No. 1, p. 17155). Briarcliff Manor, NY 10510: Academy of Management.
- Dew, N., & Sarasvathy, S. D. The Entrepreneurial Method: How Expert Entrepreneurs Create New Markets.
- Dew, N., Read, S., Sarasvathy, S. D., & Wiltbank, R. (2008). Outlines of a behavioral theory of the entrepreneurial firm. *Journal of Economic Behavior & Organization*, 66(1), 37-59.
- Dew, N., Read, S., Sarasvathy, S. D., & Wiltbank, R. (2009). Effectual versus predictive logics in entrepreneurial decision-making: Differences between experts and novices. *Journal of business venturing*, 24(4), 287-309.
- Dew, N., Sarasvathy, S. D., Read, S., & Wiltbank, R. (2008). Immortal firms in mortal markets? An entrepreneurial perspective on the “innovator's dilemma”. *European Journal of Innovation Management*, 11(3), 313-329.
- Di Paola, N. (2020). Pathways to academic entrepreneurship: the determinants of female scholars' entrepreneurial intentions. *The Journal of Technology Transfer*.
- Diener, C. I., & Dweck, C. S. (1978). An analysis of learned helplessness: Continuous changes in performance, strategy, and achievement cognitions following failure. *Journal of personality and social psychology*, 36(5), 451.
- Diener, C. I., & Dweck, C. S. (1980). An analysis of learned helplessness: II. The processing of success. *Journal of personality and social psychology*, 39(5), 940.
- Digman, J. M. (1990). Personality structure: Emergence of the five-factor model. *Annual review of psychology*, 41(1), 417-440.
- Digman, J. M. (1997). Higher-order factors of the Big Five. *Journal of personality and social psychology*, 73(6), 1246.
- Dimitriadis, S. (2021). Social capital and entrepreneur resilience: Entrepreneur performance during violent protests in Togo. *Strategic Management Journal*, 42(11), 1993-2019.
- Doern, R. (2016). Entrepreneurship and crisis management: The experiences of small businesses during the London 2011 riots. *International small business journal*, 34(3), 276-302.
- Dohse D, Walter SG (2012). Knowledge context and entrepreneurial intentions among students. *Small Bus Econ* 39(4):877–895.
- Drnovsek, M., Cardon, M. S., & Patel, P. C. (2016). Direct and indirect effects of passion on growing technology ventures. *Strategic Entrepreneurship Journal*, 10(2), 194-213.
- Duening, T. N. (2010). Five minds for the entrepreneurial future: Cognitive skills as the intellectual foundation for next generation entrepreneurship curricula. *The Journal of entrepreneurship*, 19(1), 1-22.
- Dunn, T., & Holtz-Eakin, D. (2000). Financial capital, human capital, and the transition to self-employment: Evidence from intergenerational links. *Journal of labor economics*, 18(2), 282-305.
- Dutton, J. E., & Jackson, S. E. (1987). Categorizing strategic issues: Links to organizational action. *Academy of management review*, 12(1), 76-90.
- Dweck, C. S. (1986). Motivational processes affecting learning. *American psychologist*, 41(10), 1040.
- Dweck, C. S., & Leggett, E. L. (1988). A social-cognitive approach to motivation and personality. *Psychological review*, 95(2), 256.
- Eddleston, K. A., Ladge, J. J., Mitteness, C., & Balachandra, L. (2016). Do you see what I see? Signaling effects of gender and firm characteristics on financing entrepreneurial ventures. *Entrepreneurship Theory and Practice*, 40(3), 489-514.
- Eison, J. A. (1979). The development and validation of a scale to assess differing student orientations towards grades and learning. The University of Tennessee.
- Elliot, A. J. (1997). Integrating the “classic” and “contemporary” approaches to achievement motivation: A hierarchical model of approach and avoidance achievement motivation.

- Advances in motivation and achievement, 10(7), 143-179.
- Elliot, A. J. (1999). Approach and avoidance motivation and achievement goals. *Educational psychologist*, 34(3), 169-189.
- Elliot, A. J., & Church, M. A. (1997). A hierarchical model of approach and avoidance achievement motivation. *Journal of personality and social psychology*, 72(1), 218.
- Elliott, C., Mavriplis, C., & Anis, H. (2020). An entrepreneurship education and peer mentoring program for women in STEM: mentors' experiences and perceptions of entrepreneurial self-efficacy and intent. *International Entrepreneurship and Management Journal*, 16, 43-67.
- Elliott, E. S., & Dweck, C. S. (1988). Goals: An approach to motivation and achievement. *Journal of personality and social psychology*, 54(1), 5.
- Elnadi, M., & Gheith, M. H. (2021). Entrepreneurial ecosystem, entrepreneurial self-efficacy, and entrepreneurial intention in higher education: Evidence from Saudi Arabia. *The International Journal of Management Education*, 19(1), 100458.
- Engel, Y., Dimitrova, N. G., Khapova, S. N., & Elfring, T. (2014). Uncertain but able: Entrepreneurial self-efficacy and novices' use of expert decision-logic under uncertainty. *Journal of Business Venturing Insights*, 1, 12-17.
- Engle, R. L., Schlaegel, C., & Delanoe, S. (2011). The role of social influence, culture, and gender on entrepreneurial intent. *Journal of Small Business & Entrepreneurship*, 24(4), 471-492.
- Entrialgo, M., & Iglesias, V. (2017). Are the Intentions to Entrepreneurship of Men and Women Shaped Differently? The Impact of Entrepreneurial Role-Model Exposure and Entrepreneurship Education. *Entrepreneurship Research Journal*, 8(1).
- Erdheim, J., Wang, M., & Zickar, M. J. (2006). Linking the Big Five personality constructs to organizational commitment. *Personality and individual differences*, 41(5), 959-970.
- Erkut, S., & Mokros, J. R. (1984). Professors as models and mentors for college students. *American Educational Research Journal*, 21(2), 399-417.
- Esfandiar, K., Sharifi-Tehrani, M., Pratt, S., & Altinay, L. (2019). Understanding entrepreneurial intentions: A developed integrated structural model approach. *Journal of Business Research*, 94, 172-182.
- Fatoki, O. (2018). The impact of entrepreneurial resilience on the success of small and medium enterprises in South Africa. *Sustainability*, 10(7), 2527.
- Fellnhöfer, K., & Mueller, S. (2018). "I want to be like you!": The influence of role models on entrepreneurial intention. *Journal of Enterprising Culture*, 26(02), 113-153.
- Fernandez-Perez, V., Alonso-Galicia, P. E., Rodríguez-Ariza, L., & del Mar Fuentes-Fuentes, M. (2015). Professional and personal social networks: A bridge to entrepreneurship for academics?. *European Management Journal*, 33(1), 37-47.
- Fisher, G. (2012). Effectuation, causation, and bricolage: A behavioral comparison of emerging theories in entrepreneurship research. *Entrepreneurship theory and practice*, 36(5), 1019-1051.
- Fisher, R., Maritz, A., & Lobo, A. (2016). Does individual resilience influence entrepreneurial success. *Academy of Entrepreneurship Journal*, 22(2), 39-53.
- Fiske, D. W. (1949). Consistency of the factorial structures of personality ratings from different sources. *The Journal of Abnormal and Social Psychology*, 44(3), 329.
- Forbes, D. P. (2005). Are some entrepreneurs more overconfident than others?. *Journal of business venturing*, 20(5), 623-640.
- Ford, J. K., Smith, E. M., Weissbein, D. A., Gully, S. M., & Salas, E. (1998). Relationships of goal orientation, metacognitive activity, and practice strategies with learning outcomes and transfer. *Journal of applied psychology*, 83(2), 218.
- Fornell, C., & Larcker, D. F. (1981). Structural equation models with unobservable variables and measurement error: Algebra and statistics.
- Frese, T., Geiger, I., & Dost, F. (2020). An empirical investigation of determinants of effectual and causal decision logics in online and high-tech start-up firms. *Small Business Economics*, 54, 641-664.

- Frishammar, J., & Andersson, S. (2009). The overestimated role of strategic orientations for international performance in smaller firms. *Journal of international entrepreneurship*, 7, 57-77.
- Futterer, F., Schmidt, J., & Heidenreich, S. (2018). Effectuation or causation as the key to corporate venture success? Investigating effects of entrepreneurial behaviors on business model innovation and venture performance. *Long Range Planning*, 51(1), 64-81.
- Gabrielsson, J., & Politis, D. (2011). Career motives and entrepreneurial decision-making: examining preferences for causal and effectual logics in the early stage of new ventures. *Small Business Economics*, 36, 281-298.
- Galkina, T., & Atkova, I. (2020). Effectual networks as complex adaptive systems: Exploring dynamic and structural factors of emergence. *Entrepreneurship Theory and Practice*, 44(5), 964-995.
- Galkina, T., & Chetty, S. (2015). Effectuation and networking of internationalizing SMEs. *Management International Review*, 55, 647-676.
- Galkina, T., & Jack, S. (2022). The synergy of causation and effectuation in the process of entrepreneurial networking: Implications for opportunity development. *International Small Business Journal*, 40(5), 564-591.
- García-Juan, B., Escrig-Tena, A. B., & Roca-Puig, V. (2019). Empowerment in the public sector: Testing the influence of goal orientation. *Public personnel management*, 48(4), 443-470.
- Garonne, C., Davidsson, P., & Steffens, P. (2010). Do strategy choices matter for nascent firms? A study on effectuation and causation impacts on new ventures outcomes. *Proceedings of the 7th AGSE International Entrepreneurship Research Exchange*, 325-336.
- Gartner, W. B. (1988). "Who is an entrepreneur?" is the wrong question. *American Journal of Small Businesses*, 12(4), 11-32.
- Geisser, S. (1974). A predictive approach to the random effect model. *Biometrika*, 61(1), 101-107.
- Gibson, D. E. (2004). Role models in career development: New directions for theory and research. *Journal of vocational behavior*, 65(1), 134-156.
- Ginges, J., Atran, S., Sachdeva, S., & Medin, D. (2011). Psychology out of the laboratory: the challenge of violent extremism. *American Psychologist*, 66(6), 507.
- Gist, M. E. (1987). Self-efficacy: Implications for organizational behavior and human resource management. *Academy of management review*, 12(3), 472-485.
- Globocnik, D., & Salomo, S. (2015). Do formal management practices impact the emergence of bootlegging behavior?. *Journal of Product Innovation Management*, 32(4), 505-521.
- Gnyawali, D. R., & Fogel, D. S. (1994). Environments for entrepreneurship development: key dimensions and research implications. *Entrepreneurship theory and practice*, 18(4), 43-62.
- Goldberg, L. R. (1990). An alternative "description of personality": The Big-Five factor structure. *Journal of Personality and Social Psychology*, 59, 1216-1229.
- Grant, A. M. (2013). Rethinking the extraverted sales ideal: The ambivert advantage. *Psychological science*, 24(6), 1024-1030.
- Guo, R. (2019). Effectuation, opportunity shaping and innovation strategy in high-tech new ventures. *Management Decision*, 57(1), 115-130.
- Gutiérrez, M., & Tomás, J. M. (2019). The role of perceived autonomy support in predicting university students' academic success mediated by academic self-efficacy and school engagement. *Educational Psychology*, 39(6), 729-748.
- Hair Jr, J. F., Hult, G. T. M., Ringle, C. M., Sarstedt, M., Danks, N. P., Ray, S., ... & Ray, S. (2021). An introduction to structural equation modeling. Partial least squares structural equation modeling (PLS-SEM) using R: a workbook, 1-29.
- Hair, J., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate data analysis* (7th ed.). Upper saddle River, New Jersey: Pearson Education International.
- Hair, J., Black, W., Babin, B., Anderson, R., & Tatham, R. (2009). *Multivariate data analysis*. Pearson Education.

- Hair, J.F., Ringle, C. M. and Sarstedt, M. (2011). PLS-SEM: Indeed a silver bullet. *Journal of Marketing theory and practice*, 19(2), 139-151
- Halama, P., & Gurnáková, J. (2014). Need for structure and Big Five personality traits as predictors of decision- making styles in health professionals. *Studia Psychologica*, 56(3), 171.
- Halper, L. R., & Vancouver, J. B. (2016). Self-efficacy's influence on persistence on a physical task: Moderating effect of performance feedback ambiguity. *Psychology of Sport and Exercise*, 22, 170-177.
- Haneberg, D. H. (2019). Entrepreneurial learning as an effectual process. *The Learning Organization*, 26(6), 631-647.
- Harms, R., & Schiele, H. (2012). Antecedents and consequences of effectuation and causation in the international new venture creation process. *Journal of international entrepreneurship*, 10, 95-116.
- Haynie, M., & Shepherd, D. A. (2009). A measure of adaptive cognition for entrepreneurship research. *Entrepreneurship Theory and Practice*, 33(3), 695-714.
- Hayward, M. L., Forster, W. R., Sarasvathy, S. D., & Fredrickson, B. L. (2010). Beyond hubris: How highly confident entrepreneurs rebound to venture again. *Journal of Business venturing*, 25(6), 569-578.
- Hedner, T., Abouzeedan, A., & Klofsten, M. (2011). Entrepreneurial resilience. *Annals of Innovation & Entrepreneurship*, 2(1), 7986.
- Henninger, P., Brem, A., Giones, F., Bican, P. M., & Wimschneider, C. (2020). Effectuation vs. causation: Can established firms use start-up decision-making principles to stay innovative?. *International Journal of Innovation Management*, 24(01), 2050002.
- Henrich, J., Heine, S. J., & Norenzayan, A. (2010). The weirdest people in the world?. *Behavioral and brain sciences*, 33(2-3), 61-83.
- Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the academy of marketing science*, 43, 115-135.
- Henseler, J., Ringle, C. M., & Sinkovics, R. R. (2009). The use of partial least squares path modeling in international marketing. In *New challenges to international marketing* (Vol. 20, pp. 277-319). Emerald Group Publishing Limited.
- Herb-Sepich, D. (2014). Resiliency through connectedness: Connections female social entrepreneurs develop to reduce stress. A narrative inquiry (Doctoral dissertation, Creighton University).
- Hirst, G., Van Knippenberg, D., & Zhou, J. (2009). A cross-level perspective on employee creativity: Goal orientation, team learning behavior, and individual creativity. *Academy of management journal*, 52(2), 280-293.
- Hirst, G., Van Knippenberg, D., Chen, C. H., & Sacramento, C. A. (2011). How does bureaucracy impact individual creativity? A cross-level investigation of team contextual influences on goal orientation-creativity relationships. *Academy of management journal*, 54(3), 624-641.
- Hmieleski, K. M., & Corbett, A. C. (2008). The contrasting interaction effects of improvisational behavior with entrepreneurial self-efficacy on new venture performance and entrepreneur work satisfaction. *Journal of business venturing*, 23(4), 482-496.
- Hmieleski, K. M., Carr, J. C., & Baron, R. A. (2015). Integrating discovery and creation perspectives of entrepreneurial action: The relative roles of founding CEO human capital, social capital, and psychological capital in contexts of risk versus uncertainty. *Strategic Entrepreneurship Journal*, 9(4), 289-312.
- Hoffmann, A., Junge, M., & Malchow-Møller, N. (2015). Running in the family: parental role models in entrepreneurship. *Small Business Economics*, 44, 79-104.
- Honjo, Y., & Kato, M. (2022). Are founder-CEOs resilient to crises? The impact of founder-CEO succession on new firm survival. *International Small Business Journal*, 40(2), 205-235.
- Hou, F., Su, Y., Lu, M., & Qi, M. (2019). Model of the entrepreneurial intention of university

- students in the pearl river delta of china. *Frontiers in Psychology*, 10.
- Hough, L. M. (1992). The 'Big Five' personality variables--construct confusion: Description versus prediction. *Human performance*, 5(1-2), 139-155.
- Huang, K. H., & Yu, T. H. K. (2021). Complexity theory of entrepreneur characteristics. *International Entrepreneurship and Management Journal*, 1-12.
- Hurtz, G. M., & Donovan, J. J. (2000). Personality and job performance: the Big Five revisited. *Journal of applied psychology*, 85(6), 869.
- Islam, T., Ahmad, S., Kaleem, A., & Mahmood, K. (2021). Abusive supervision and knowledge sharing: moderating roles of Islamic work ethic and learning goal orientation. *Management Decision*, 59(2), 205-222.
- Ismail, M., Khalid, S.A., Othman, M., Jusoff, H.K., Rahman, N.A., Kassim, K.M., Zain, R.S. (2009). Entrepreneurial intention among Malaysian undergraduates. *Int J Business Manag*, 4(10), 54.
- Johannisson, B. (1991). University training for entrepreneurship: Swedish approaches. *Entrepreneurship & Regional Development*, 3(1), 67-82.
- Johnson, S. L., Madole, J. W., & Freeman, M. A. (2018). Mania risk and entrepreneurship: Overlapping personality traits. *Academy of Management Perspectives*, 32(2), 207-227.
- Judge, T. A., Bono, J. E., & Locke, E. A. (2000). Personality and job satisfaction: The mediating role of job characteristics. *Journal of applied psychology*, 85(2), 237.
- Judge, T. A., Rodell, J. B., Klinger, R. L., Simon, L. S., & Crawford, E. R. (2013). Hierarchical representations of the five-factor model of personality in predicting job performance: integrating three organizing frameworks with two theoretical perspectives. *Journal of applied psychology*, 98(6), 875.
- Kagan, J. (1958). The concept of identification. *Psychological review*, 65(5), 296.
- Kalinic, I., Sarasvathy, S. D., & Forza, C. (2014). 'Expect the unexpected': Implications of effectual logic on the internationalization process. *International Business Review*, 23(3), 635-647.
- Karimi, S. (2020). The role of entrepreneurial passion in the formation of students' entrepreneurial intentions. *Applied Economics*, 52(3), 331-344.
- Karimi, S., Biemans, H. J., Lans, T., Chizari, M., & Mulder, M. (2016). The impact of entrepreneurship education: A study of Iranian students' entrepreneurial intentions and opportunity identification. *Journal of small business management*, 54(1), 187-209.
- Katz, J., & Gartner, W. B. (1988). Properties of emerging organizations. *Academy of management review*, 13(3), 429-441.
- Kerr, J., & Coviello, N. (2019). Formation and constitution of effectual networks: A systematic review and synthesis. *International journal of management reviews*, 21(3), 370-397.
- Kerr, J., & Coviello, N. (2020). Weaving network theory into effectuation: A multi-level reconceptualization of effectual dynamics. *Journal of Business Venturing*, 35(2), 105937.
- Khan, S. N., Mubushar, M., Khan, I. U., Rehman, H. M., & Khan, S. U. (2021). The influence of personality traits on sustainability-oriented entrepreneurial intentions: the moderating role of servant leadership. *Environment, Development and Sustainability*, 23, 13707-13730.
- Khatoon, A., Rehman, S. U., Islam, T., & Ashraf, Y. (2022). Knowledge sharing through empowering leadership: the roles of psychological empowerment and learning goal orientation. *Global Knowledge, Memory and Communication*.
- Khelil, N. (2016). The many faces of entrepreneurial failure: Insights from an empirical taxonomy. *Journal of business venturing*, 31(1), 72-94.
- Khurana, I., Dutta, D. K., & Ghura, A. S. (2022). SMEs and digital transformation during a crisis: The emergence of resilience as a second-order dynamic capability in an entrepreneurial ecosystem. *Journal of Business Research*, 150, 623-641.
- Kickul, J., Wilson, F., Marlino, D., et al. (2008) Are misalignments of perceptions and self-efficacy causing gender gaps in entrepreneurial intentions among our nations' teens? *Journal of Small Business and Enterprise Development* 15(2): 321-335.

- Kickul, J., Gundry, L. K., Barbosa, S. D., & Whitcanack, L. (2009). Intuition versus analysis? Testing differential models of cognitive style on entrepreneurial self-efficacy and the new venture creation process. *Entrepreneurship theory and practice*, 33(2), 439-453.
- Kim, M. J., & Hall, C. M. (2019). A hedonic motivation model in virtual reality tourism: Comparing visitors and non-visitors. *International Journal of Information Management*, 46, 236-249.
- Kirkwood, J. (2007). Igniting the entrepreneurial spirit: is the role parents play gendered?. *International Journal of Entrepreneurial Behavior & Research*, 13(1), 39-59.
- Klyver, K., Schenkel, M. T., Nielsen, M. S., & Schøtt, T. (2014). How instrumental and emotional support from family differs between vocational decisions to become self-employed or employed. *Journal of Business and Entrepreneurship*, 25(2), 53.
- Kohlberg, L. (1963). Moral development and identification.
- Kolvereid, L. (1996). Prediction of employment status choice intentions. *Entrepreneurship Theory and practice*, 21(1), 47-58.
- Kong, F., Zhao, L., & Tsai, C. H. (2020). The relationship between entrepreneurial intention and action: the effects of fear of failure and role model. *Frontiers in Psychology*, 11, 229.
- Kruegel, N. F., & Brazeal, D. V. (1994). Entrepreneurial potential and potential entrepreneurs. *Entrepreneurship: Theory and Practice*, 18(3), 91-104.
- Krueger Jr, N. F. (2000). The Cognitive Infrastructure of Opportunity Emergence. *Entrepreneurship Theory and Practice*, 24(3), 5-23.
- Krueger Jr, N. F., & Brazeal, D. V. (1994). Entrepreneurial potential and potential entrepreneurs. *Entrepreneurship theory and practice*, 18(3), 91-104.
- Krueger Jr, N. F., Reilly, M. D., & Carsrud, A. L. (2000). Competing models of entrepreneurial intentions. *Journal of business venturing*, 15(5-6), 411-432.
- Krueger, N. (1993). The impact of prior entrepreneurial exposure on perceptions of new venture feasibility and desirability. *Entrepreneurship theory and practice*, 18(1), 5-21.
- Krueger, N. F., & Carsrud, A. L. (1993). Entrepreneurial intentions: Applying the theory of planned behaviour. *Entrepreneurship & regional development*, 5(4), 315-330.
- Krueger, N. F., Reilly, M. D. and Carsrud, A. L. (2000). Competing models of entrepreneurial intentions. *Journal of Business Venturing*, 15(5):411-432.
- Lafuente, E. M., & Vaillant, Y. (2013). Age driven influence of role-models on entrepreneurship in a transition economy. *Journal of Small Business and Enterprise Development*, 20(1), 181-203.
- Laspiata, S., Breugst, N., Heblich, S., & Patzelt, H. (2012). Intergenerational transmission of entrepreneurial intentions. *Journal of business venturing*, 27(4), 414-435.
- Lavolette, E. M., Radu Lefebvre, M., & Brunel, O. (2012). The impact of story bound entrepreneurial role models on self-efficacy and entrepreneurial intention. *International Journal of Entrepreneurial Behavior & Research*, 18(6), 720-742.
- Leutner, F., Ahmetoglu, G., Akhtar, R., & Chamorro-Premuzic, T. (2014). The relationship between the entrepreneurial personality and the Big Five personality traits. *Personality and individual differences*, 63, 58-63.
- Lewis, B. R., Templeton, G. F., & Byrd, T. A. (2005). A methodology for construct development in MIS research. *European journal of information systems*, 14, 388-400.
- Lewis, E. F., Hardy, M., & Snaith, B. (2013). An analysis of survey reporting in the imaging professions: is the issue of non-response bias being adequately addressed?. *Radiography*, 19(3), 240-245.
- Li, C., Makhdoom, H. U. R., & Asim, S. (2020). Impact of entrepreneurial leadership on innovative work behavior: Examining mediation and moderation mechanisms. *Psychology research and behavior management*, 105-118.
- Li, C., Murad, M., Shahzad, F., Khan, M. A. S., Ashraf, S. F., & Dogbe, C. S. K. (2020). Entrepreneurial passion to entrepreneurial behavior: Role of entrepreneurial alertness, entrepreneurial self-efficacy and proactive personality. *Frontiers in psychology*, 11, 1611.
- Liñán, F., & Chen, Y. W. (2009). Development and cross-cultural application of a specific instrument to measure entrepreneurial intentions. *Entrepreneurship theory and practice*,

- 33(3), 593-617.
- Liñán, F., & Fayolle, A. (2015). A systematic literature review on entrepreneurial intentions: citation, thematic analyses, and research agenda. *International entrepreneurship and management journal*, 11, 907-933.
- Lindner, J. R., Murphy, T. H., & Briers, G. E. (2001). Handling nonresponse in social research. *Journal of agricultural education*, 42(4), 43-53.
- Liu, S., & Liu, M. (2020). The impact of learner metacognition and goal orientation on problem-solving in a serious game environment. *Computers in Human Behavior*, 102, 151-165.
- Liu, X., Lin, C., Zhao, G., & Zhao, D. (2019). Research on the effects of entrepreneurial education and entrepreneurial self-efficacy on college students' entrepreneurial intention. *Frontiers in psychology*, 10, 869.
- Lockwood, P., & Kunda, Z. (1997). Superstars and me: Predicting the impact of role models on the self. *Journal of personality and social psychology*, 73(1), 91.
- Lounsbury, J. W., Foster, N., Patel, H., Carmody, P., Gibson, L. W., & Stairs, D. R. (2012). An investigation of the personality traits of scientists versus nonscientists and their relationship with career satisfaction. *R&D Management*, 42(1), 47-59.
- Low, M. B., & MacMillan, I. C. (1988). Entrepreneurship: Past research and future challenges. *Journal of management*, 14(2), 139-161.
- Luthans, F., & Ibrayeva, E. S. (2006). Entrepreneurial self-efficacy in Central Asian transition economies: quantitative and qualitative analyses. *Journal of International Business Studies*, 37, 92-110.
- Ma, J., Peng, Y., & Wu, B. (2021). Challenging or hindering? The roles of goal orientation and cognitive appraisal in stressor-performance relationships. *Journal of Organizational Behavior*, 42(3), 388-406.
- Mahfud, T., Triyono, M. B., Sudira, P., & Mulyani, Y. (2020). The influence of social capital and entrepreneurial attitude orientation on entrepreneurial intentions: the mediating role of psychological capital. *European Research on Management and Business Economics*, 26(1), 33-39.
- March, J. G. (1991). Exploration and exploitation in organizational learning. *Organization science*, 2(1), 71-87.
- Marks, S. (2021). Performing and unperforming entrepreneurial success: Confessions of a female role model. *Journal of Small Business Management*, 59(5), 946-975.
- Marquardt, D. J., Casper, W. J., & Kuenzi, M. (2021). Leader goal orientation and ethical leadership: A socio-cognitive approach of the impact of leader goal-oriented behavior on employee unethical behavior. *Journal of Business Ethics*, 172, 545-561.
- Martin, R. (2012). Regional economic resilience, hysteresis and recessionary shocks. *Journal of economic geography*, 12(1), 1-32.
- Marx, R. E., Sawatari, Y., Fortin, M., & Broumand, V. (2005). Bisphosphonate-induced exposed bone (osteonecrosis/osteopetrosis) of the jaws: risk factors, recognition, prevention, and treatment. *Journal of oral and maxillofacial surgery*, 63(11), 1567-1575.
- Matthews, C. H., & Moser, S. B. (1995, June). The impact of family background and gender on interest in small firm ownership: A longitudinal study. In *Proceedings of the ICSB 40th World conference*, Sydney (pp. 18-21).
- Maulida, E., Doriza, S., Refai, D., & Argarini, F. (2020). The Influence of Entrepreneurial Role Model on Entrepreneurial Attitude in Higher Education Student. *KnE Social Sciences*, 247-253.
- McCrae, R. R., & Costa Jr, P. T. (1992). Discriminant validity of NEO-PIR facet scales.
- McCrae, R. R., & Costa, P. T. (1985). Updating Norman's "adequacy taxonomy": Intelligence and personality dimensions in natural language and in questionnaires. *Journal of personality and social psychology*, 49(3), 710.
- McCrae, R. R., & John, O. P. (1992). An introduction to the five-factor model and its applications. *Journal of personality*, 60(2), 175-215.
- McGee, J. E., & Peterson, M. (2019). The long-term impact of entrepreneurial self-efficacy

- and entrepreneurial orientation on venture performance. *Journal of small business management*, 57(3), 720-737.
- McKelvie, A., Chandler, G. N., DeTienne, D. R., & Johansson, A. (2020). The measurement of effectuation: highlighting research tensions and opportunities for the future. *Small Business Economics*, 54, 689-720.
- Mehta, A., & Mehta, N. (2018). Knowledge integration and team effectiveness: A team goal orientation approach. *Decision Sciences*, 49(3), 445-486.
- Mei, H., Ma, Z., Jiao, S., Chen, X., Lv, X., & Zhan, Z. (2017). The sustainable personality in entrepreneurship: the relationship between big six personality, entrepreneurial self-efficacy, and entrepreneurial intention in the Chinese context. *Sustainability*, 9(9), 1649.
- Miao, C., Qian, S., & Ma, D. (2017). The relationship between entrepreneurial self-efficacy and firm performance: a meta-analysis of main and moderator effects. *Journal of Small Business Management*, 55(1), 87-107.
- Miller, A. L., Fassett, K. T., & Palmer, D. L. (2021). Achievement goal orientation: A predictor of student engagement in higher education. *Motivation and Emotion*, 45, 327-344.
- Minniti, M. (2005). Entrepreneurship and network externalities. *Journal of Economic Behavior & Organization*, 57(1), 1-27.
- Minniti, M., & Bygrave, W. (2001). A dynamic model of entrepreneurial learning. *Entrepreneurship theory and practice*, 25(3), 5-16.
- Mintzberg, H. (1994). Rethinking strategic planning part I: Pitfalls and fallacies. *Long range planning*, 27(3), 12-21.
- Mollica, A. G., Cain, K., & Callan, R. S. (2017). Using Assessments of Dental Students' Entrepreneurial Self-Efficacy to Aid Practice Management Education. *Journal of dental education*, 81(6), 726-731.
- Monllor, J., & Murphy, P. J. (2017). Natural disasters, entrepreneurship, and creation after destruction: A conceptual approach. *International Journal of Entrepreneurial Behavior & Research*, 23(4), 618-637.
- Moreno-Gómez, J., Gómez-Araujo, E., & Castillo-De Andreis, R. (2020). Parental role models and entrepreneurial intentions in Colombia: Does gender play a moderating role? *Journal of Entrepreneurship in Emerging Economies*, 12(3), 413-429.
- Mount, M. K., & Barrick, M. R. (1995). The Big Five personality dimensions: Implications for research and practice in human resources management. *Research in personnel and human resources management*, 13(3), 153-200.
- Mueller, J., Zapkau, F. B., & Schwens, C. (2014). Impact of prior entrepreneurial exposure on entrepreneurial intention—cross-cultural evidence. *Journal of Enterprising Culture*, 22(03), 251-282.
- Mueller, S. L., & Thomas, A. S. (2001). Culture and entrepreneurial potential: A nine country study of locus of control and innovativeness. *Journal of business venturing*, 16(1), 51-75.
- Munawar, S., Yousaf, H. Q., Ahmed, M., & Rehman, S. (2022). Effects of green human resource management on green innovation through green human capital, environmental knowledge, and managerial environmental concern. *Journal of Hospitality and Tourism Management*, 52, 141-150.
- Mungai, E., & Velamuri, S. R. (2011). Parental entrepreneurial role model influence on male offspring: Is it always positive and when does it occur?. *Entrepreneurship Theory and Practice*, 35(2), 337-357.
- Murphy, L. B. (1974). Coping, vulnerability, and resilience in childhood. *Coping and adaptation*, 69-100.
- Nabi, G., Walmsley, A., & Akhtar, I. (2021). Mentoring functions and entrepreneur development in the early years of university. *Studies in Higher Education*, 46(6), 1159-1174.
- Nauta, M., & Kokaly, M. (2001). Assessing role model influences on students' academic and vocational decisions. *Journal of Career Assessment*, 9(1), 81-99.
- Neneh, B. N. (2019). From entrepreneurial alertness to entrepreneurial behavior: The role of

- trait competitiveness and proactive personality. *Personality and Individual Differences*, 138, 273-279.
- Neneh, B. N. (2022). Entrepreneurial passion and entrepreneurial intention: the role of social support and entrepreneurial self-efficacy. *Studies in Higher Education*, 47(3), 587-603.
- Nicholls, J. G. (1984). Achievement motivation: Conceptions of ability, subjective experience, task choice, and performance. *Psychological review*, 91(3), 328.
- Noel, T. W. (2002). Effects of entrepreneurial education on intent to open a business: An exploratory study. *Journal of entrepreneurship education*, 5, 3.
- Nowiński, W., & Haddoud, M. Y. (2019). The role of inspiring role models in enhancing entrepreneurial intention. *Journal of Business Research*, 96, 183-193.
- Olson, E. M., Slater, S. F., Hult, G. T. M., & Olson, K. M. (2018). The application of human resource management policies within the marketing organization: The impact on business and marketing strategy implementation. *Industrial Marketing Management*, 69, 62-73.
- Olsson-Collentine A, Van Assen MA, Hartgerink CH. The prevalence of marginally significant results in psychology over time. *Psychological science*. 2019 Apr;30(4):576-86.
- Ortega, A. M., García, M. T., & Santos, M. V. (2017). Effectuation-causation: what happens in new product development?. *Management Decision*, 55(8), 1717-1735.
- Ozgen, E., & Baron, R. A. (2007). Social sources of information in opportunity recognition: Effects of mentors, industry networks, and professional forums. *Journal of business venturing*, 22(2), 174-192.
- Pablo-Lerchundi, I., Morales-Alonso, G., & González-Tirados, R. M. (2015). Influences of parental occupation on occupational choices and professional values. *Journal of Business Research*, 68(7), 1645-1649.
- Palmer, C., Niemand, T., Stöckmann, C., Kraus, S., & Kailer, N. (2019). The interplay of entrepreneurial orientation and psychological traits in explaining firm performance. *Journal of Business Research*, 94, 183-194.
- Parker, S. C. (2004). *The economics of self-employment and entrepreneurship*. Cambridge university press.
- Pathki, C. S. R., Kluemper, D., Meuser, J., and McLarty, B. (2021). The org-B5: development of a short work frame-of-reference measure of the big five. *Journal of Management*.
- Payne, S. C., Youngcourt, S. S., & Beaubien, J. M. (2007). A meta-analytic examination of the goal orientation nomological net. *Journal of applied psychology*, 92(1), 128.
- Perry, J. T., Chandler, G. N., & Markova, G. (2012). Entrepreneurial effectuation: a review and suggestions for future research. *Entrepreneurship theory and practice*, 36(4), 837-861.
- Peterman, N. E., & Kennedy, J. (2003). Enterprise education: Influencing students' perceptions of entrepreneurship. *Entrepreneurship theory and practice*, 28(2), 129-144.
- Pintrich, P. R. (2000). An achievement goal theory perspective on issues in motivation terminology, theory, and research. *Contemporary educational psychology*, 25(1), 92-104.
- Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: a critical review of the literature and recommended remedies. *Journal of applied psychology*, 88(5), 879.
- Pollack, J. M., Burnette, J. L., & Hoyt, C. L. (2012). Self-efficacy in the face of threats to entrepreneurial success: Mind-sets matter. *Basic and Applied Social Psychology*, 34(3), 287-294.
- Postigo, Á., Cuesta, M., García-Cueto, E., Prieto-Díez, F., & Muñiz, J. (2021). General versus specific personality traits for predicting entrepreneurship. *Personality and Individual Differences*, 182, 111094.
- Pritschet L, Powell D, Horne Z. Marginally significant effects as evidence for hypotheses: Changing attitudes over four decades. *Psychological science*. 2016 Jul;27(7):1036-42.
- Qureshi, S., Amin, M., & Mustafa, A. (2020). An intention to select entrepreneurship as a career choice: a case of undergraduate students enrolled in entrepreneurship programs. *Global Management Sciences Review*, V(I), 8-21.
- Rabl, T., Petzsche, V., Baum, M., & Franzke, S. (2023). Can support by digital technologies

- stimulate intrapreneurial behaviour? The moderating role of management support for innovation and intrapreneurial self-efficacy. *Information Systems Journal*, 33(3), 567-597.
- Raja, U., Johns, G., & Ntalianis, F. (2004). The impact of personality on psychological contracts. *Academy of management Journal*, 47(3), 350-367.
- Rajchamaha, K., & Prapojanasomboon, J. (2022). Influence of role models on the entrepreneurial skills of science and technology undergraduates. *Education+ Training*, 64(7), 981-995.
- Ranabahu, N., & Barrett, M. (2020). Does practice make micro-entrepreneurs perfect? An investigation of expertise acquisition using effectuation and causation. *Small Business Economics*, 54, 883-905.
- Rauch, A., & Frese, M. (2000). Psychological approaches to entrepreneurial success: A general model and an overview of findings. *International review of industrial and organizational psychology*, 15, 101-142.
- Rauch, A., & Frese, M. (2007). Let's put the person back into entrepreneurship research: A meta-analysis on the relationship between business owners' personality traits, business creation, and success. *European Journal of work and organizational psychology*, 16(4), 353-385.
- Read, S., & Sarasvathy, S. D. (2005). Knowing what to do and doing what you know: Effectuation as a form of entrepreneurial expertise. *The Journal of Private Equity*, 45-62.
- Read, S., Dew, N., Sarasvathy, S. D., Song, M., & Wiltbank, R. (2009). Marketing under uncertainty: The logic of an effectual approach. *Journal of marketing*, 73(3), 1-18.
- Read, S., Song, M., & Smit, W. (2009). A meta-analytic review of effectuation and venture performance. *Journal of business venturing*, 24(6), 573-587.
- Renko, M., Bullough, A., & Saeed, S. (2021). How do resilience and self-efficacy relate to entrepreneurial intentions in countries with varying degrees of fragility? A six-country study. *International Small Business Journal*, 39(2), 130-156.
- Reynolds, P. D., Bygrave, W. D., Autio, E., & Arenius, P. (2004). GEM 2003 global report. Babson Park, MA: Babson College.
- Ringle, C. M., Sarstedt, M., & Straub, D. W. A critical look at the use of PLS-SEM in MIS quarterly. *MIS Q.* 36 (1), iii–xiv (2012).
- Roccas, S., Sagiv, L., Schwartz, S. H., & Knafo, A. (2002). The big five personality factors and personal values. *Personality and Social Psychology Bulletin*, 28(6), 789–801.
- Rocha, V., & Van Praag, M. (2020). Mind the gap: The role of gender in entrepreneurial career choice and social influence by founders. *Strategic Management Journal*, 41(5), 841-866.
- Rodríguez Gutiérrez, P. I., Pastor Pérez, M. D. P., & Alonso Galicia, P. E. (2019). University entrepreneurship: how to trigger entrepreneurial intent of undergraduate students. *Journal of Science and Technology Policy Management*, 10(4), 927-950.
- Rogers, J. C. (1986). Mentoring for career achievement and advancement. *The American Journal of Occupational Therapy*, 40(2), 79-82.
- Rose, A. (2007). Economic resilience to natural and man-made disasters: Multidisciplinary origins and contextual dimensions. *Environmental Hazards*, 7(4), 383-398.
- Rotefoss, B., & Kolvereid, L. (2005). Aspiring, nascent and fledgling entrepreneurs: an investigation of the business start-up process. *Entrepreneurship & Regional Development*, 17(2), 109-127.
- Runst, P., & Thomä, J. (2023). Resilient entrepreneurs?—revisiting the relationship between the Big Five and self-employment. *Small Business Economics*, 61(1), 417-443.
- Salgado, J. F., & Rumbos, A. (1997). Personality and job performance in financial services managers. *International Journal of Selection and Assessment*, 5(2), 91-100.
- Sánchez, J. C. (2013). The impact of an entrepreneurship education program on entrepreneurial competencies and intention. *Journal of small business management*, 51(3), 447-465.
- Santoro, G., Messeni-Petruzzelli, A., & Del Giudice, M. (2021). Searching for resilience: the impact of employee-level and entrepreneur-level resilience on firm performance in small family firms. *Small Business Economics*, 57, 455-471.

- Santos, S. C., Caetano, A., Spagnoli, P., Costa, S. F., & Neumeyer, X. (2017). Predictors of entrepreneurial activity before and during the European economic crisis. *International Entrepreneurship and Management Journal*, 13, 1263-1288.
- Sarasvathy, S. D. (2001). Causation and effectuation: Toward a theoretical shift from economic inevitability to entrepreneurial contingency. *Academy of management Review*, 26(2), 243-263.
- Sarasvathy, S. D. (2008). Effectuation: Elements of entrepreneurial expertise. In *Effectuation*. Edward Elgar Publishing.
- Sarasvathy, S., & Kotha, S. (2001). Effectuation in the management of Knightian Uncertainty: Evidence from the RealNetworks Case. *Research on management and entrepreneurship*, 1, 1-49.
- Sarasvathy, S., Kumar, K., York, J. G., & Bhagavatula, S. (2014). An effectual approach to international entrepreneurship: Overlaps, challenges, and provocative possibilities. *Entrepreneurship Theory and Practice*, 38(1), 71-93.
- Sarstedt, M., Hair Jr, J. F., & Ringle, C. M. (2023). "PLS-SEM: indeed a silver bullet"—retrospective observations and recent advances. *Journal of Marketing theory and Practice*, 31(3), 261-275.
- Scherer R, Adams J, Wiebe F (1989b) Developing entrepreneurial behaviours: a social learning theory perspective. *J Organ Change Manag* 2:16–28.
- Scherer, I. B., Schaefer, R., & Minello, I. F. (2015). Resilience in the face of business failure: a Brazilian study on entrepreneurial behavior. *Business and Management Review*, 4(7), 354-365.
- Scherer, R. F., Adams, J. S., Carley, S. S., & Wiebe, F. A. (1989). Role model performance effects on development of entrepreneurial career preference. *Entrepreneurship theory and practice*, 13(3), 53-72.
- Scherer, R. F., Brodzinski, J. D., & Wiebe, F. (1991). Examining the relationship between personality and entrepreneurial career preference. *Entrepreneurship & Regional Development*, 3(2), 195-206.
- Scherer, R. F., Brodzinski, J. D., & Wiebe, F. A. (1991). Assessing perception of career role-model performance: The self-employed parent. *Perceptual and Motor Skills*, 72(2), 555-560.
- Schmitt-Rodermund, E. (2004). Pathways to successful entrepreneurship: Parenting, personality, early entrepreneurial competence, and interests. *Journal of vocational behavior*, 65(3), 498-518.
- Schmutzler, J., Andonova, V., & Diaz-Serrano, L. (2019). How context shapes entrepreneurial self-efficacy as a driver of entrepreneurial intentions: A multilevel approach. *Entrepreneurship theory and practice*, 43(5), 880-920.
- Schweizer, R., Vahlne, J. E., & Johanson, J. (2010). Internationalization as an entrepreneurial process. *Journal of International Entrepreneurship*, 8, 343-370.
- Semeijn, J. H., Van der Heijden, B. I. J. M., & De Beuckelaer, A. (2020). Personality traits and types in relation to career success: An empirical comparison using the big five. *Applied Psychology*, 69(2), 538-556.
- Seo, D., Mah, S., & Yun, S. (2023). Why Do Supervisors Abuse Certain Subordinates? Goal Orientation and Leader–Member Exchange as Antecedents. *Journal of Leadership & Organizational Studies*, 15480518231204489.
- Shadish, W. R., Cook, T. D., & Campbell, D. T. (2002). *Experimental and quasi-experimental*
- Shaffer, J. A., & Postlethwaite, B. E. (2012). A matter of context: A meta-analytic investigation of the relative validity of contextualized and noncontextualized personality measures. *Personnel Psychology*, 65(3), 445-494.
- Shane, S. (2009). Why encouraging more people to become entrepreneurs is bad public policy. *Small business economics*, 33, 141-149.
- Shane, S. A. (2003). *A general theory of entrepreneurship: The individual-opportunity nexus*. Edward Elgar Publishing.
- Shane, S., & Venkataraman, S. (2000). The promise of entrepreneurship as a field of research. *Academy of management review*, 25(1), 217-226.

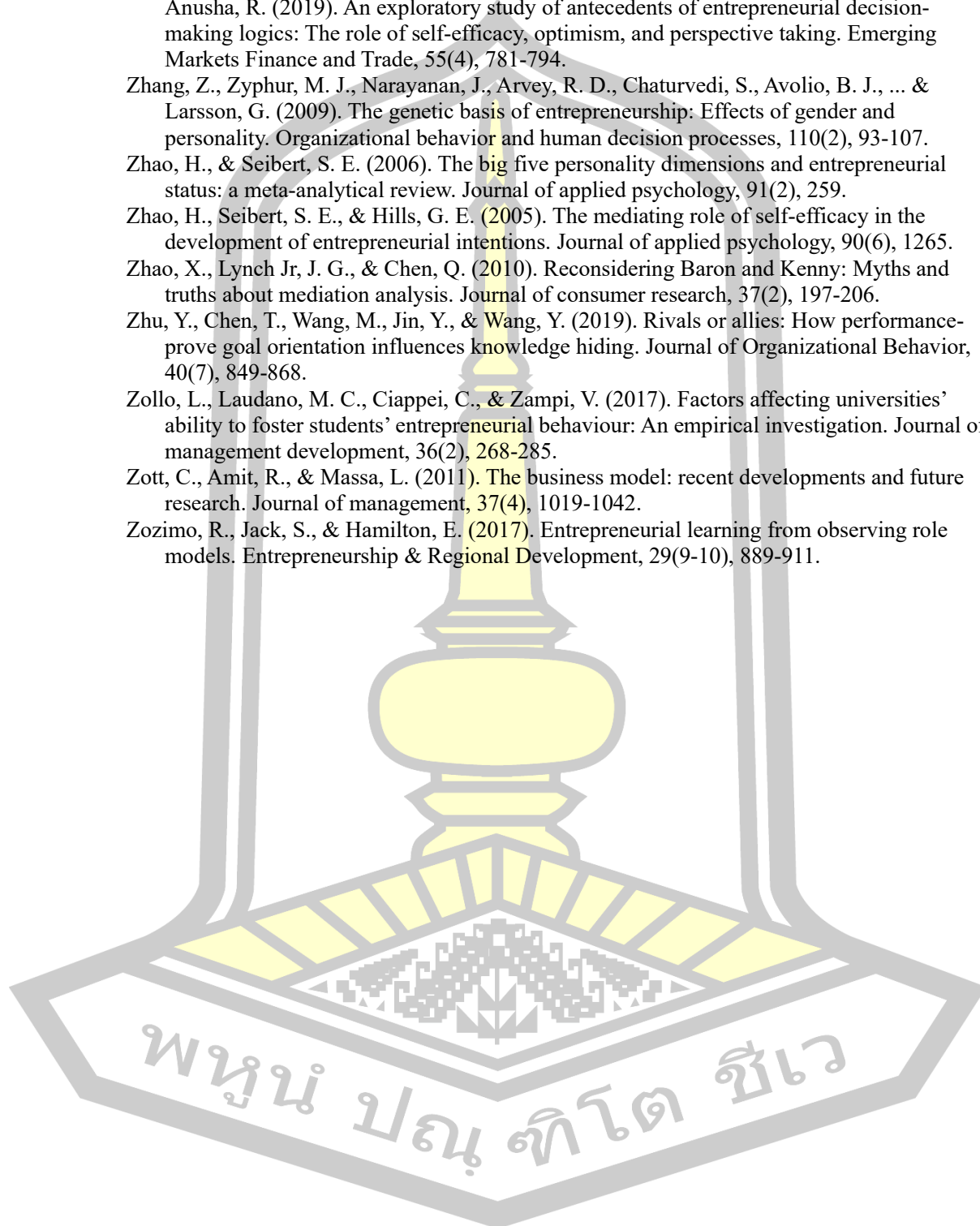
- Shane, S., Nicolaou, N., Cherkas, L., & Spector, T. D. (2010). Genetics, the Big Five, and the tendency to be self-employed. *Journal of Applied Psychology*, 95(6), 1154.
- Shapero, A., & Sokol, L. (1982). The social dimensions of entrepreneurship. University of Illinois at Urbana-Champaign's Academy for Entrepreneurial Leadership Historical Research Reference in Entrepreneurship.
- Shapiro, E. C., Haseltine, F. P., & Rowe, M. P. (1978). Moving up: Role models, mentors, and the "patron system". *Sloan Management Review* (pre-1986), 19(3), 51.
- Sharma, M. S., & Suri, S. (2019). Moderating effects of big five personality between self-efficacy and career choice among college students. *International Journal of Innovative Studies in Sociology and Humanities*, 4(5), 101-109.
- Sharma, P., & Salvato, C. (2011). Commentary: Exploiting and exploring new opportunities over life cycle stages of family firms. *Entrepreneurship Theory and Practice*, 35(6), 1199-1205.
- Simmering, M. J., Fuller, C. M., Richardson, H. A., Ocal, Y., & Atinc, G. M. (2015). Marker variable choice, reporting, and interpretation in the detection of common method variance: A review and demonstration. *Organizational Research Methods*, 18(3), 473-511.
- Simmons, S. A., Wiklund, J., Levie, J., Bradley, S. W., & Sunny, S. A. (2019). Gender gaps and reentry into entrepreneurial ecosystems after business failure. *Small Business Economics*, 53, 517-531.
- Simms, C., McGowan, P., Pickernell, D., Vazquez-Brust, D., & Williams, A. (2022). Uncovering the effectual-causal resilience nexus in the era of Covid-19: A case of a food sector SME's resilience in the face of the global pandemic. *Industrial Marketing Management*, 106, 166-182.
- Sinclair, V. G., & Wallston, K. A. (2004). The development and psychometric evaluation of the Brief Resilient Coping Scale. *Assessment*, 11(1), 94-101.
- Singh, S., & Pavlovich, K. (2011). Being resilient when experiencing venture failure.
- Sirén, C., Parida, V., Patel, P. C., & Wincent, J. (2019). Rushed and short on time: The negative effects of temporal planning and flexible pacing style on the entrepreneurial alertness–effectuation relationship. *Journal of Business Research*, 101, 555-560.
- Slavec, A., Drnovšek, M., & Hisrich, R. D. (2017). Entrepreneurial openness: Concept development and measure validation. *European Management Journal*, 35(2), 211-223.
- Smolka, K. M., Verheul, I., Burmeister–Lamp, K., & Heugens, P. P. (2018). Get it together! Synergistic effects of causal and effectual decision–making logics on venture performance. *Entrepreneurship Theory and Practice*, 42(4), 571-604.
- Soleimanof, S., Morris, M. H., & Jang, Y. (2021). Following the footsteps that inspire: Parental passion, family communication, and children's entrepreneurial attitudes. *Journal of Business Research*, 128, 450-461.
- Souitaris, V., Zerbinati, S., & Al-Laham, A. (2007). Do entrepreneurship programmes raise entrepreneurial intention of science and engineering students? The effect of learning, inspiration and resources. *Journal of Business venturing*, 22(4), 566-591.
- Stahlmann, A. G., Hopwood, C. J., & Bleidorn, W. (2023). Big Five personality traits predict small but robust differences in civic engagement. *Journal of Personality*.
- Sternberg, R. (2009). Regional dimensions of entrepreneurship. *Foundations and Trends® in Entrepreneurship*, 5(4), 211-340.
- St-Jean, E., & Audet, J. (2012). The role of mentoring in the learning development of the novice entrepreneur. *International entrepreneurship and management journal*, 8, 119-140.
- Straub, D., Boudreau, M. C., & Gefen, D. (2004). Validation guidelines for IS positivist research. *Communications of the Association for Information systems*, 13(1), 24.
- Streukens, S., & Leroi-Werelds, S. (2016). Bootstrapping and PLS-SEM: A step-by-step guide to get more out of your bootstrap results. *European management journal*, 34(6), 618-632.
- Stroe, S., Parida, V., & Wincent, J. (2018). Effectuation or causation: An fsQCA analysis of entrepreneurial passion, risk perception, and self-efficacy. *Journal of Business Research*, 89, 265-272.
- Stuart, R. W., & Abetti, P. A. (1990). Impact of entrepreneurial and management experience

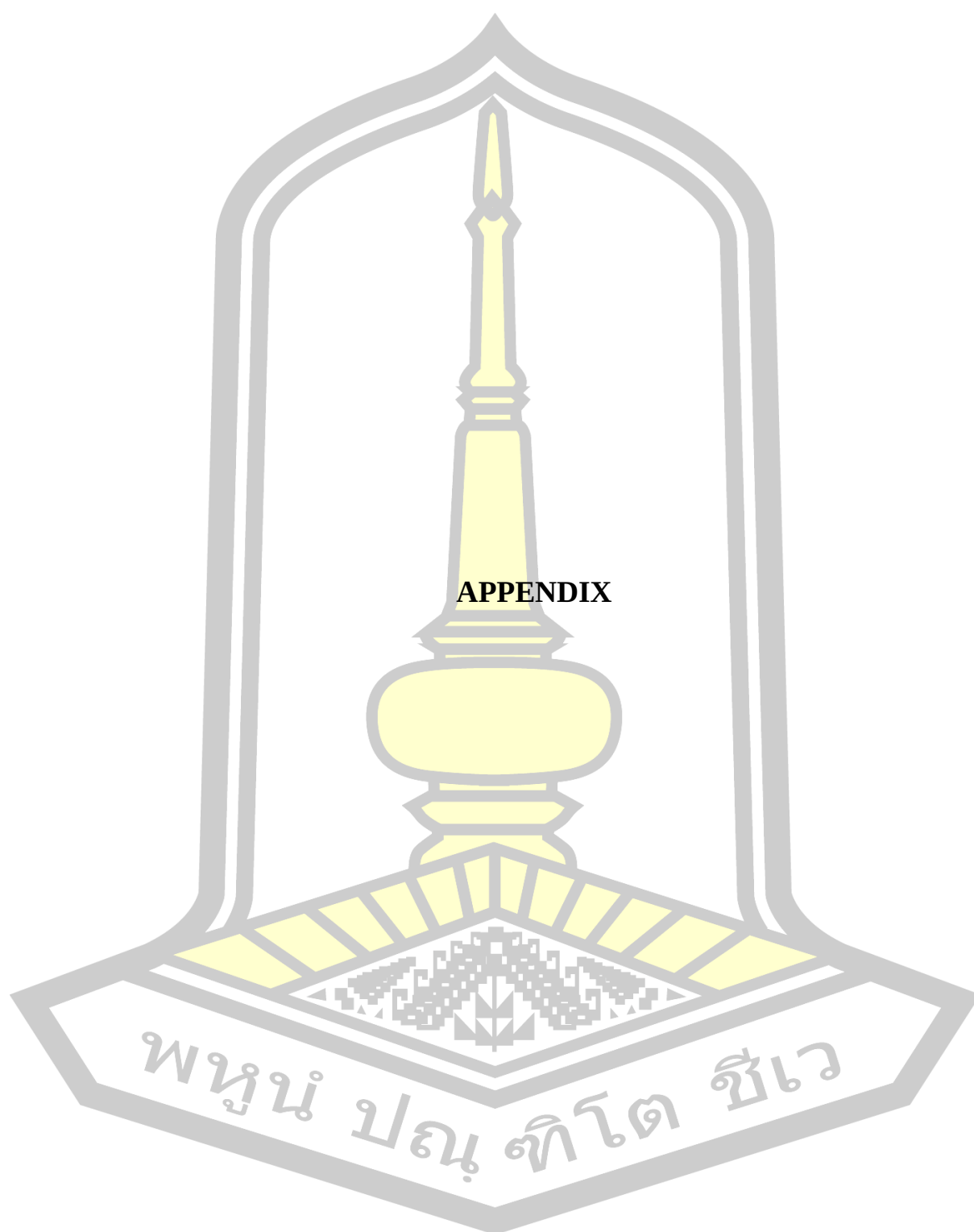
- on early performance. *Journal of business venturing*, 5(3), 151-162.
- Stuart, T. E., & Sorenson, O. (2007). Strategic networks and entrepreneurial ventures. *Strategic Entrepreneurship Journal*, 1(3-4), 211-227.
- Sujan, H., Weitz, B. A., & Kumar, N. (1994). Learning orientation, working smart, and effective selling. *Journal of marketing*, 58(3), 39-52.
- Sun, H., Lo, C. T., Liang, B., & Wong, Y. L. B. (2017). The impact of entrepreneurial education on entrepreneurial intention of engineering students in Hong Kong. *Management Decision*, 55(7), 1371-1393.
- Sun, J., Buys, N., Wang, X., & McAuley, A. (2011). Using the concept of resilience to explain entrepreneurial success in China. *International Journal of Management and Enterprise Development*, 11(2-4), 182-202.
- Super, D. E. (1957). The psychology of careers; an introduction to vocational development.
- Sutin, A. R., Costa, P. T., Miech, R., & Eaton, W. W. (2009). Personality and career success: Concurrent and longitudinal relations. *European journal of personality*, 23(2), 71-84.
- Swail, J., Down, S., & Kautonen, T. (2014). Examining the effect of 'entre-tainment' as a cultural influence on entrepreneurial intentions. *International Small Business Journal*, 32(8), 859-875.
- Tarapuez, E., Guzmán, B., & Parra, R. (2018). Determinants of entrepreneurial intention in Latin America. *Suma de Negocios*, 9(19), 56-67.
- Theis, L., & Bipp, T. (2019). Workplace Goal Orientation. *European Journal of Psychological Assessment*.
- Thompson, E. R. (2009). Individual entrepreneurial intent: Construct clarification and development of an internationally reliable metric. *Entrepreneurship theory and practice*, 33(3), 669-694.
- Tingey, L., Larzelere, F., Goklish, N., Rosenstock, S., Mayo-Wilson, L. J., O'Keefe, V., ... & Barlow, A. (2020). Behavioral and mental health outcomes from an RCT of a youth entrepreneurship intervention among Native American adolescents. *Children and Youth Services Review*, 119, 105603.
- Townsend, D. M., Busenitz, L. W., & Arthurs, J. D. (2010). To start or not to start: Outcome and ability expectations in the decision to start a new venture. *Journal of business venturing*, 25(2), 192-202.
- 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.
- Trice, A. (1991). Relationships among first aspirations, parental occupations, and current occupations. *Psychological Reports*, 68, 287-290.
- Trice, A. D. (1991). Stability of children's career aspirations. *The Journal of genetic psychology*, 152(1), 137-139.
- Tripopsakul, S. (2018). Social media adoption as a business platform: an integrated TAM-TOE framework. *Polish Journal of Management Studies*, 18(2), 350-362.
- Türk, S., Zapkau, F. B., & Schwens, C. (2020). Prior entrepreneurial exposure and the emergence of entrepreneurial passion: the moderating role of learning orientation. *Journal of Small Business Management*, 58(2), 225-258.
- Uddin, M. R., & Bose, T. K. (2012). Determinants of entrepreneurial intention of business students in Bangladesh. *International Journal of Business and Management*, 7(24), 128-137.
- Uppal, N. (2014). Moderation effects of job characteristics on the relationship between neuroticism and job performance. *International Journal of Selection and Assessment*, 22(4), 411-421.
- Urbano, D., Toledano, N., & Ribeiro-Soriano, D. (2011). Socio-cultural factors and transnational entrepreneurship: A multiple case study in Spain. *International Small Business Journal*, 29(2), 119-134.
- Urdu, T. (1997). Achievement goal theory: Past results, future directions. *Advances in motivation and achievement*, 10, 99-141.

- Uy, M. A., Sun, S., & Foo, M. D. (2017). Affect spin, entrepreneurs' well-being, and venture goal progress: The moderating role of goal orientation. *Journal of Business Venturing*, 32(4), 443-460.
- Vaghely, I. P., & Julien, P. A. (2010). Are opportunities recognized or constructed?: An information perspective on entrepreneurial opportunity identification. *Journal of business venturing*, 25(1), 73-86.
- Vaillant, Y., & Lafuente, E. (2007). Do different institutional frameworks condition the influence of local fear of failure and entrepreneurial examples over entrepreneurial activity?. *Entrepreneurship and Regional Development*, 19(4), 313-337.
- Van Auken, H., & Werbel, J. (2006). Family dynamic and family business financial performance: Spousal commitment. *Family business review*, 19(1), 49-63.
- Van Auken, H., Fry, F. L., & Stephens, P. (2006). The influence of role models on entrepreneurial intentions. *Journal of developmental Entrepreneurship*, 11(02), 157-167.
- Van Auken, H., Stephens, P., Fry, F. L., & Silva, J. (2006). Role model influences on entrepreneurial intentions: A comparison between USA and Mexico. *The International Entrepreneurship and Management Journal*, 2, 325-336.
- Van De Klundert, T. (1986). Economic resilience: a two-country analysis. *De economist*, 134(1), 25-41.
- Van der Kuip, I., & Verheul, I. (2003). Early development of entrepreneurial qualities: the role of initial education (No. N200311). *EIM Business and Policy Research*, 1-27.
- VandeWalle, D. (1997). Development and validation of a work domain goal orientation instrument. *Educational and psychological measurement*, 57(6), 995-1015.
- VandeWalle, D., & Cummings, L. L. (1997). A test of the influence of goal orientation on the feedback-seeking process. *Journal of applied psychology*, 82(3), 390.
- Vega-Gómez, F. I., Miranda González, F. J., Chamorro Mera, A., & Pérez-Mayo, J. (2020). Antecedents of entrepreneurial skills and their influence on the entrepreneurial intention of academics. *Sage Open*, 10(2), 2158244020927411.
- Velu, C., & Jacob, A. (2016). Business model innovation and owner-managers: the moderating role of competition. *R&D Management*, 46(3), 451-463.
- Voorhees, C. M., Brady, M. K., Calantone, R., & Ramirez, E. (2016). Discriminant validity testing in marketing: an analysis, causes for concern, and proposed remedies. *Journal of the academy of marketing science*, 44, 119-134.
- Wahyudi, C. G., & Sanyata, S. (2020, August). Getting to Know the Characteristics of the Z-Generation Career Options as the Industrial Revolution Activator 4.0 in Indonesia. In 2nd International Seminar on Guidance and Counseling 2019 (ISGC 2019) (pp. 258-259). Atlantis Press.
- Waleczek, P., Zehren, T., & Flatten, T. C. (2018). Start-up financing: How founders finance their ventures' early stage. *Managerial and Decision Economics*, 39(5), 535-549.
- Wang, M., Cai, J., Soetanto, D., & Guo, Y. (2021). Why do academic scientists participate in academic entrepreneurship? An empirical investigation of department context and the antecedents of entrepreneurial behavior. *Journal of Small Business Management*, 1-32.
- Wardana, L. W., Narmaditya, B. S., Wibowo, A., Mahendra, A. M., Wibowo, N. A., Harwida, G., & Rohman, A. N. (2020). The impact of entrepreneurship education and students' entrepreneurial mindset: the mediating role of attitude and self-efficacy. *Heliyon*, 6(9).
- Wei, Z., & Zhang, L. (2020). How to perform strategic change? A strategy as practice perspective. *Chinese Management Studies*, 14(3), 811-832.
- Welsh, M. (2014). Resilience and responsibility: governing uncertainty in a complex world. *The geographical journal*, 180(1), 15-26.
- Westland, J.C. (2010). Lower bounds on sample size in structural equation modeling. *Electronic Commerce Research and Applications*, 9(6), 476-487.
- Williams, T. A., & Shepherd, D. A. (2016). Victim entrepreneurs doing well by doing good: Venture creation and well-being in the aftermath of a resource shock. *Journal of Business Venturing*, 31(4), 365-387.
- Wilson, F., Kickul, J., & Marlino, D. (2007). Gender, entrepreneurial self-efficacy, and

- entrepreneurial career intentions: Implications for entrepreneurship education. *Entrepreneurship theory and practice*, 31(3), 387-406.
- Wiltbank, R., Dew, N., Read, S., and Sarasvathy, S.D. (2006) What to do next? The case for non-predictive strategy. *Strategic Management Journal*, 27, 981–998.
- Wing-Fai, L. (2016). The strengths of close ties: Taiwanese online entrepreneurship, gender and intersectionality. *Information, Communication & Society*, 19(8), 1046-1060.
- Winkler, C., & Case, J. R. (2014). Chicken or egg: Entrepreneurial self-efficacy and entrepreneurial intentions revisited. *Journal of Business and Entrepreneurship*, 26(1), 37-62.
- Woo, H., & Ahn, H. J. (2015). Big five personality and different meanings of happiness of consumers. *Economics & Sociology*, 8(3), 145.
- Wright, S., Wong, A., & Newill, C. (1997). The impact of role models on medical students. *Journal of general internal medicine*, 12, 53-56.
- Wu, S., & Wu, L. (2008). The impact of higher education on entrepreneurial intentions of university students in China. *Journal of small business and enterprise development*, 15(4), 752-774.
- Wyrwich, M., Sternberg, R., & Stuetzer, M. (2019). Failing role models and the formation of fear of entrepreneurial failure: A study of regional peer effects in German regions. *Journal of Economic Geography*, 19(3), 567-588.
- Wyrwich, M., Stuetzer, M., & Sternberg, R. (2016). Entrepreneurial role models, fear of failure, and institutional approval of entrepreneurship: A tale of two regions. *Small business economics*, 46, 467-492.
- Xiao, X. H., & Fu, H. (2022). Fire spreading across boundaries: The positive spillover of entrepreneurial passion to family and community domains. *Frontiers in Psychology*, 13, 952421.
- Yamakawa, Y., Peng, M. W., & Deeds, D. L. (2015). Rising from the ashes: Cognitive determinants of venture growth after entrepreneurial failure. *Entrepreneurship Theory and Practice*, 39(2), 209-236.
- Yang, Y., & Danes, S. M. (2015). Resiliency and resilience process of entrepreneurs in new venture creation. *Entrepreneurship Research Journal*, 5(1), 1-30.
- Yao, K., Li, X., & Liang, B. (2021). Failure learning and entrepreneurial resilience: The moderating role of firms' knowledge breadth and knowledge depth. *Journal of Knowledge Management*, 25(9), 2141-2160.
- Ylitalo, J. (2009). Controlling for common method variance with partial least squares path modeling: A Monte Carlo study. Research project, Helsinki University of Technology.
- Yoon, J. H., & Cho, E. (2021). Effectuation (EF) and Causation (CS) on Venture Performance and Entrepreneurs' Dispositions Affecting the Reliance on EF and CS. *Entrepreneurship Research Journal*, 13(2), 381-408.
- Yu, W., Zhu, F., Der Foo, M., & Wiklund, J. (2022). What does not kill you makes you stronger: Entrepreneurs' childhood adversity, resilience, and career success. *Journal of Business Research*, 151, 40-55.
- Zahra, S. A. (2021). International entrepreneurship in the post Covid world. *Journal of World Business*, 56(1), 101143.
- Zapkau, F. B., Schwens, C., & Kabst, R. (2017). The role of prior entrepreneurial exposure in the entrepreneurial process: A review and future research implications. *Journal of Small Business Management*, 55(1), 56-86.
- Zapkau, F. B., Schwens, C., Steinmetz, H., & Kabst, R. (2015). Disentangling the effect of prior entrepreneurial exposure on entrepreneurial intention. *Journal of Business Research*, 68(3), 639-653.
- Zeffane, R. (2012). Gender and youth entrepreneurial potential: Evidence from the United Arab Emirates. *International Journal of Business and Management*, 8(1), 60–72.
- Zell, E., & Lesick, T. L. (2022). Big five personality traits and performance: A quantitative synthesis of 50+ meta-analyses. *Journal of personality*, 90(4), 559-573.
- Zhang, J., & Huang, J. (2021). Entrepreneurial self-efficacy mediates the impact of the post-

- pandemic entrepreneurship environment on college students' entrepreneurial intention. *Frontiers in Psychology*, 12, 643184.
- Zhang, Y., Cui, L., Zhang, G., Sarasvathy, S., & Anusha, R. (2019). An exploratory study of antecedents of entrepreneurial decision-making logics: The role of self-efficacy, optimism, and perspective taking. *Emerging Markets Finance and Trade*, 55(4), 781-794.
- Zhang, Z., Zyphur, M. J., Narayanan, J., Arvey, R. D., Chaturvedi, S., Avolio, B. J., ... & Larsson, G. (2009). The genetic basis of entrepreneurship: Effects of gender and personality. *Organizational behavior and human decision processes*, 110(2), 93-107.
- Zhao, H., & Seibert, S. E. (2006). The big five personality dimensions and entrepreneurial status: a meta-analytical review. *Journal of applied psychology*, 91(2), 259.
- Zhao, H., Seibert, S. E., & Hills, G. E. (2005). The mediating role of self-efficacy in the development of entrepreneurial intentions. *Journal of applied psychology*, 90(6), 1265.
- Zhao, X., Lynch Jr, J. G., & Chen, Q. (2010). Reconsidering Baron and Kenny: Myths and truths about mediation analysis. *Journal of consumer research*, 37(2), 197-206.
- Zhu, Y., Chen, T., Wang, M., Jin, Y., & Wang, Y. (2019). Rivals or allies: How performance-prove goal orientation influences knowledge hiding. *Journal of Organizational Behavior*, 40(7), 849-868.
- Zollo, L., Laudano, M. C., Ciappei, C., & Zampi, V. (2017). Factors affecting universities' ability to foster students' entrepreneurial behaviour: An empirical investigation. *Journal of management development*, 36(2), 268-285.
- Zott, C., Amit, R., & Massa, L. (2011). The business model: recent developments and future research. *Journal of management*, 37(4), 1019-1042.
- Zozimo, R., Jack, S., & Hamilton, E. (2017). Entrepreneurial learning from observing role models. *Entrepreneurship & Regional Development*, 29(9-10), 889-911.





Questionnaire on Entrepreneurial Intention of University's Students

Dear Students,

We are the Entrepreneurship Academic Research Team at the university. Thank you sincerely for dedicating your time to complete this questionnaire. The aim of this survey is to delve into students' entrepreneurial mindset and their readiness to embark on entrepreneurial ventures. Rest assured, in line with academic research protocols, this survey guarantees anonymity, ensuring that your responses remain confidential. Kindly provide your honest feedback while filling out the questionnaire.

We appreciate your valuable participation!



Part I Main Questions

Entrepreneurial Role Model

Please indicate your level of agreement with the following statements, reflecting your sincere thoughts and feelings. The more you move towards the right, the greater your agreement is understood to be. Your responses should be based solely on your own perspectives, without the need to consult or consider the opinions of others.

	Strongly Disagree ← 1 2 3 4 5 6 7 → Agree Strongly						
1. There is an entrepreneurial person I am trying to be like in my career pursuits.	1	2	3	4	5	6	7
2. There is an entrepreneurial person particularly inspirational to me in my career path.	1	2	3	4	5	6	7
3. In the career path I am pursuing, there is an entrepreneurial person I admire.	1	2	3	4	5	6	7
4. I know of an entrepreneurial person who has a career I would like to pursue.	1	2	3	4	5	6	7
5. I know of an entrepreneurial person who has a career I would like to pursue.	1	2	3	4	5	6	7

Goal Orientation

Presented here are descriptions of various thoughts and behaviors. Kindly indicate your degree of alignment with each statement, grounded in your authentic thoughts and emotions. The more you incline towards the right, the more often these thoughts or behaviors are presumed to occur in your experience. Your selections should be made independently, without seeking or being influenced by the opinions of others.

	Strongly Disagree ← 1 2 3 4 5 6 7 → Agree Strongly						
6. I am willing to select a challenging work assignment that I can learn a lot from.	1	2	3	4	5	6	7
7. I often look for opportunities to develop new skills and knowledge.	1	2	3	4	5	6	7
8. I enjoy challenging and difficult task at work where I'll learn new skills.	1	2	3	4	5	6	7
9. For me, development of my work ability is important enough to take risks.	1	2	3	4	5	6	7
10. I prefer to work in situations that require a high level of ability and talent.	1	2	3	4	5	6	7
11. I like to show that I can perform better than my coworkers.	1	2	3	4	5	6	7
12. I try to figure out what it takes to prove my ability to others at work.	1	2	3	4	5	6	7
13. I enjoy it when others at work are aware of how well I am doing.	1	2	3	4	5	6	7
14. I prefer to work on projects where I can prove my ability to others.	1	2	3	4	5	6	7
15. I would avoid taking on a new task if there was a chance that I would appear rather incompetent to others.	1	2	3	4	5	6	7
16. Avoiding a show of low ability is more important to me than learning a new skill.	1	2	3	4	5	6	7
17. I'm concerned about taking on a task at work if my performance would reveal that I had low ability.	1	2	3	4	5	6	7
18. I prefer to avoid situations at work where I might perform poorly.	1	2	3	4	5	6	7

Entrepreneurial self-efficacy

Please assess your level of confidence in relation to the following descriptions, drawing on your genuine thoughts and feelings. The degree of confidence increases as you move towards the right. Your choices should be based solely on your personal convictions, without the necessity of consulting the opinions of others.

I am confident that in the journey of launching a business in the future, I will be capable of

	Strongly ← Unconfident 1 2 3 4 5 6 7 Confident →						
19. Conceive a unique idea for a business							
20. Identify market opportunities for a new business	1	2	3	4	5	6	7
21. Plan a new business	1	2	3	4	5	6	7
22. Write a formal business plan	1	2	3	4	5	6	7
23. Raise money to start a business	1	2	3	4	5	6	7
24. Convince others to invest in your business	1	2	3	4	5	6	7
25. Convince a bank to lend you money to start a business	1	2	3	4	5	6	7
26. Convince others to work for you in your new business	1	2	3	4	5	6	7
27. Manage a small business	1	2	3	4	5	6	7
28. Grow a successful business.	1	2	3	4	5	6	7

Effectuation

Please indicate your level of agreement with the following statements, reflecting your sincere thoughts and feelings. The more you move towards the right, the greater your agreement is understood to be. Your responses should be based solely on your own perspectives, without the need to consult or consider the opinions of others.

Image in the in the process of starting a business in the future,

	Strongly ← Disagree 1 2 3 4 5 6 7 Agree →						
29. I would be flexible and took advantage of opportunities as they arose.							
30. I would adapt what I'm doing to the resources I would have.	1	2	3	4	5	6	7
31. I would allow the business to evolve as opportunities emerge.	1	2	3	4	5	6	7
32. I would be careful not to commit more resources than I could afford to lose.	1	2	3	4	5	6	7
33. I would be careful not to risk so much money that the company would be in real trouble financially if things don't work out.	1	2	3	4	5	6	7
34. I would be careful not to risk more money than I am willing to lose with my initial idea.	1	2	3	4	5	6	7
35. I would use a substantial number of agreements with customers, suppliers and other organizations and people to reduce the amount of uncertainty.	1	2	3	4	5	6	7
36. I would use pre-commitments from customers and suppliers as often as possible.	1	2	3	4	5	6	7
37. I would try a number of different approaches until I find a business model that works.	1	2	3	4	5	6	7
38. I would experiment with different products and/or business models.	1	2	3	4	5	6	7

Entrepreneurial Resilience

Below are various descriptions of thoughts and behaviors. Kindly rate your level of agreement with each statement according to your genuine beliefs and experiences. The more you move towards the right, the more frequently you are likely to engage in or experience these thoughts or behaviors. Your responses should be independent of external opinions and reflect your individual perspective alone.

	Strongly Disagree ←————→ Strongly Agree						
39. I look for creative ways to alter difficult situations.	1	2	3	4	5	6	7
40. Regardless of what happens to me, I believe I can control my reaction to it.	1	2	3	4	5	6	7
41. I believe I can grow in positive ways by dealing with difficult situations.	1	2	3	4	5	6	7
42. I actively look for ways to replace the losses I encounter in life.	1	2	3	4	5	6	7

Personality (Openness & Extraversion)

You will find descriptions of various personal traits and behavioral tendencies. Kindly indicate your degree of agreement with each statement based on your genuine beliefs or experiences. The more you move towards the right, the stronger your agreement is considered to be. Your responses should reflect your own perspectives, independent of any external influences or opinions.

	Strongly Disagree ←————→ Strongly Agree						
43. I enjoy hearing different ideas.	1	2	3	4	5	6	7
44. I have a vivid imagination.	1	2	3	4	5	6	7
45. I enjoy thinking about things.	1	2	3	4	5	6	7
46. I enjoy philosophical discussions.	1	2	3	4	5	6	7
47. I feel comfortable around people.	1	2	3	4	5	6	7
48. I make friends easily.	1	2	3	4	5	6	7
49. I am skilled in handling social situations.	1	2	3	4	5	6	7
50. I talk a lot at work.	1	2	3	4	5	6	7

Entrepreneurial Intention

Please indicate your level of agreement with the following statements, reflecting your sincere thoughts and feelings. The more you move towards the right, the greater your agreement is understood to be. Your responses should be based solely on your own perspectives, without the need to consult or consider the opinions of others.

	Strongly Disagree ←————→ Strongly Agree						
51. I am ready to do anything to be an entrepreneur.	1	2	3	4	5	6	7
52. My professional goal is to become an entrepreneur.	1	2	3	4	5	6	7

- | | | | | | | | |
|--|---|---|---|---|---|---|---|
| 53. I will make every effort to start and run my own firm. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 54. I am determined to create a firm in the future. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 55. I have very seriously thought of starting a firm. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 56. I have the firm intention to start a firm someday. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

Part II Basic Information

56. Your gender

- 1) Male; 2) Female

57. Your grade

- 1) Freshman; 2) Sophomores ; 3) Juniors; 4) Senior

58. Your major

- 1) Majors in economics and management (eg. Management, Financial); 2) Majors in scientific and technical subjects (eg. Engineer, Computer Science, Intelligent Manufacturing);
3) Others

59. Your GPA

- 1) <1.0; 2) 1.0-2.0; 3) 2.0-3.0; 4) 3.0-4.0; 5) ≥4.0

60. Your parent' occupation

- 1) Self-employed; 2) Peasant; 3) Employees of enterprises and public institutions;
4) Government officials; 5) Others

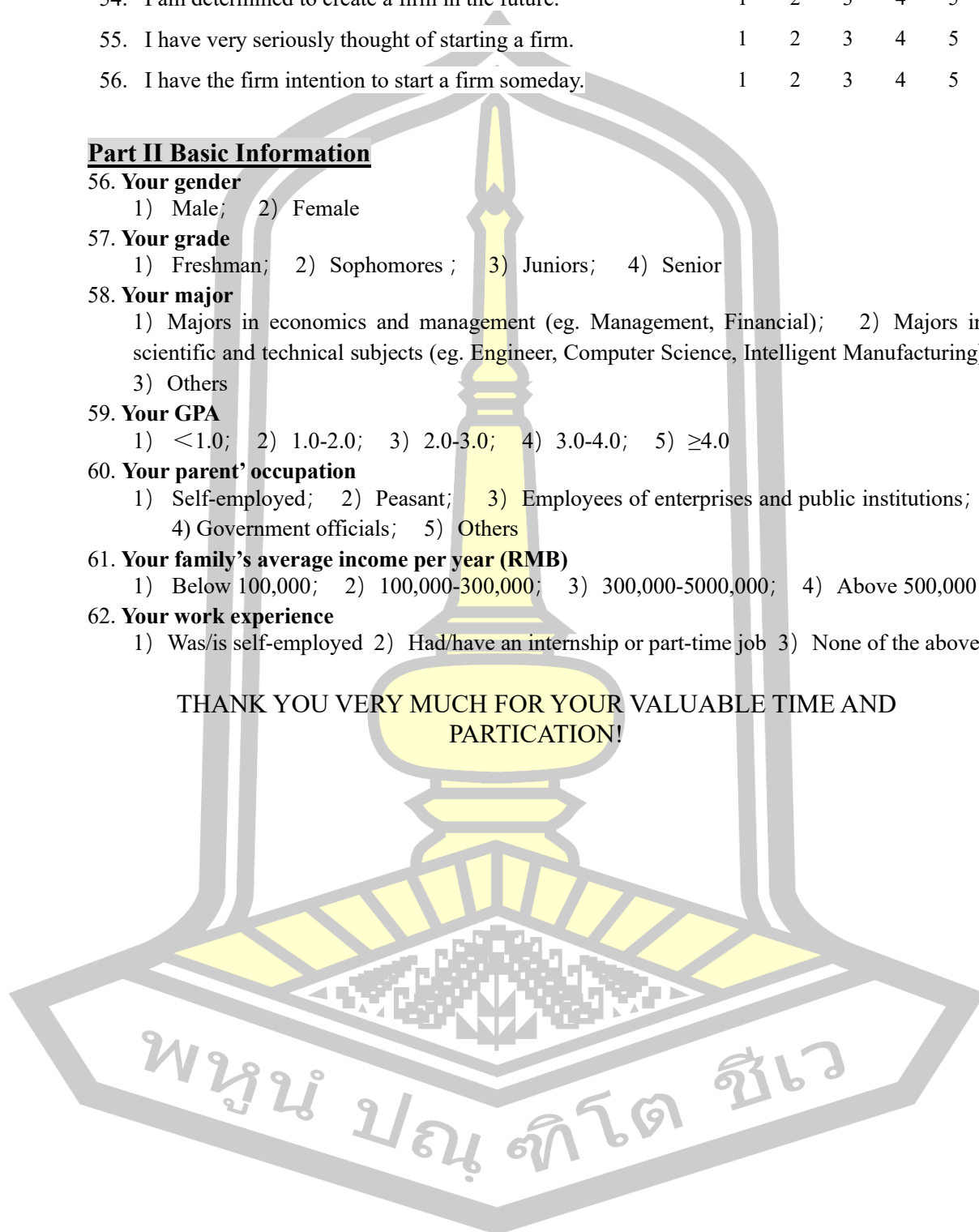
61. Your family's average income per year (RMB)

- 1) Below 100,000; 2) 100,000-300,000; 3) 300,000-500,000; 4) Above 500,000

62. Your work experience

- 1) Was/is self-employed 2) Had/have an internship or part-time job 3) None of the above

THANK YOU VERY MUCH FOR YOUR VALUABLE TIME AND
PARTICATION!



BIOGRAPHY

NAME	Shuwei Wang
PLACE OF BIRTH	China
ADDRESS	Benjamart 211, Nakon-Sawan Rd, Talat, Mueang Maha Sarakham, Maha Sarakham, 44000, Thailand
POSITION	Lecturer
PLACE OF WORK	
EDUCATION	2007 Master of Business Administration, Sun-Yan Sen University, Guangzhou, China 2024 Doctor of Philosophy (Modern Management) Mahasarakham University, Thailand
Research output	2023 "The effect of abusive supervision variability on work-family conflict: The role of psychological detachment and optimism" Frontiers in Psychology

