



SPECIAL PROBLEM PROPOSAL

**DETERMINANTS OF AGRICULTURAL CAREER INTENTIONS AMONG THAI
UNDERGRADUATE STUDENTS: EVOLVING ROLES OF PERCEIVED
BEHAVIORAL CONTROL AND ATTITUDES**

THANAKORN CHAROENSUK

**BACHELOR OF SCIENCE DEGREE PROGRAM (AGRICULTURAL
DEVELOPMENT)**

**DEPARTMENT OF COMMUNICATION AND AGRICULTURAL DEVELOPMENT
FACULTY OF AGRICULTURAL TECHNOLOGY
KING MONGKUT'S INSTITUTE OF TECHNOLOGY LADKRABANG**

2023



SPECIAL PROBLEM

**DETERMINANTS OF AGRICULTURAL CAREER INTENTIONS AMONG THAI
UNDERGRADUATE STUDENTS: EVOLVING ROLES OF PERCEIVED
BEHAVIORAL CONTROL AND ATTITUDES**

THANAKORN CHAROENSUK

**BACHELOR OF SCIENCE DEGREE PROGRAM (AGRICULTURAL
DEVELOPMENT)**

DEPARTMENT OF COMMUNICATION AND AGRICULTURAL DEVELOPMENT

FACULTY OF AGRICULTURAL TECHNOLOGY

KING MONGKUT'S INSTITUTE OF TECHNOLOGY LADKRABANG

2023

Special Problem Certification
School of Agricultural Technology
King Mongkut's Institute of Technology Ladkrabang

.....

Title Determinants of Agricultural Career Intentions Among Thai Undergraduate Students: Evolving Roles of Perceived Behavioral Control and Attitudes

Student Thanakorn Charoensuk



Student ID 63040534

Degree Bachelor of Science in Agricultural Development

Program Agricultural Development

Year 2024

Advisor Assoc. Prof. Dr. Seneeporn Suwanmaneepong

EXAMINERS	SIGNATURES
Assoc. Prof. Dr. Suneeporn Suwanmaneepong 
Asst. Prof. Dr. Jeeranan Kharmkhan
Dr. Ekkaphon ThongKaew 

Considered to be counted as part of the curriculum studies
Bachelor of Science Degree in Agricultural Development
March 26, 2024

.....

(Assoc. Prof. Dr. Supaluk Sorapukdee)
Executive Office Director
Interdisciplinary Program on Agricultural Technology

Thesis title: "Determinants of Agricultural Career Intentions among Thai Undergraduate Students: Evolving Roles of Perceived Behavioral Control and Attitudes"

Student: Thanakorn Charoensuk

Student ID: 63040534

Degree: Bachelor

Program: Agriculture Development

Year: 2023

Thesis advisor: Assoc. Prof. Dr. Suneeporn Suwanmaneepong

ABSTRACT

This study explores the determinants of career intentions among 204 undergrad students at the School of Agriculture at King Mongkut's Institute of Technology Ladkrabang (KMITL) in Thailand, utilizing an extended version of the Theory of Planned Behavior (TPB) analyzed through Structural Equation Modeling (SEM) framework. This research aims to understand how attitudes, subjective norms, perceived behavioral control, and perceived values collectively influence agricultural students' career choices amidst a changing agricultural landscape.

The findings reveal that perceived behavioral control (PBC) and personal attitudes towards agriculture (AT) are the strongest predictors of students' intentions to pursue agricultural careers, surpassing the influence of subjective norms that traditionally dominated career choice models in agriculture. This shift indicates that students' career choices are increasingly driven by their perceptions of their capabilities and the intrinsic value they associate with agricultural careers, rather than external social pressures. This highlights a significant shift in how career decisions are

made, with students feeling more empowered by their capabilities and personal assessments of agriculture's viability than societal expectations.

These findings carry important implications for the design of agricultural education programs. They suggest a need for curricular adjustments that enhance skill development and align more closely with modern agricultural practices and technological innovations. By updating educational offerings to better match the interests and self-perceptions of students, agricultural schools can attract more students and better prepare them for successful careers in this evolving field. This study not only broadens our understanding of what motivates agricultural career intentions but also provides valuable insights for educators and policymakers in shaping future educational strategies in agriculture.

ACKNOWLEDGEMENT

“Just let him cook.”

The quote above has been my guiding principle since I realized I've been living wrong. It reminds me that I still have a chance to prove myself in every challenge, failure, and success. It helps me push myself to be better.

I am deeply grateful to my advisor, Associate Professor Dr. Suneeporn Suwanmaneepong, for her invaluable guidance and support. Her expertise and attention to detail have been crucial to my success.

I would also like to thank Dr. Chanhathai Kerdseeserm, Assistant Professor Dr. Jeeranan Khermkhan, and Dr. Ekkaphon Thongkeaw for their insightful feedback and encouragement, which significantly contributed to the completion of this thesis. I appreciate all faculty members whose teachings have greatly enriched my academic experience.

Lastly, thanks go to my friends and family for their unwavering support and love throughout my journey. Their encouragement and belief in me have been my strength during challenging times.

Thanakorn Charoensuk

TABLE OF CONTENTS

ABSTRACT	
CHAPTER 1. INTRODUCTION	1
1.1 Research Background	1
1.2 Problem statement and research gap	2
1.3 Research Questions	3
1.4 Objectives of the study	4
1.5 Research Framework	5
1.6 Scope of the study	6
CHAPTER 2. REVIEW OF RELATED LITERATURE, HYPOTHESIS	8
2.1 Agricultural Policy Development in Thailand	8
2.2 Theoretical Foundations: Extended Theory of Planned Behavior (TPB)	9
2.2.1 Extension with Perceived Value	11
2.3 Behavioral Intention and Predictive Variables	11
2.4 Factors Influencing Agricultural Career Intentions	12
2.5 Research gap and hypothesis	14
CHAPTER 3. METHODOLOGY	16
3.1 Study Area	16
3.2 Data Collection and Sample	17
3.3 Data Analysis and Assessment of the Measurement Model	19
3.3.1 Assessment of Measurement Model	22
CHAPTER 4. RESULTS	23
4.1. Measurement Model Evaluation	23
4.2. Structural Model Analysis	24

4.3.	Hypothesis Testing	26
4.4.	Path Diagram of Structural Equation Modeling	27
4.5.	Comparative of Agricultural Intentions Across Major.	28
CHAPTER 5. DISCUSSION		29
5.1.	The Influences of Factors on Agriculture Career Intention	29
5.2.	Changing Agriculture Career Trend	31
CHAPTER 6. CONCLUSION, IMPLICATION, AND RECOMMENDATION		32
6.1.	Conclusion	32
6.2.	Implications and Recommendations	33
	6.2.1. Agricultural Education Curriculum Implication	33
	6.2.2. Future Studies	34
REFERENCES		36
APPENDICES		43
A.	R codes in data analysis and visualization	43
B.	Survey questionnaire	43

CHAPTER 1.

INTRODUCTION

1.1 Research background

Agriculture is a cornerstone of global sustainability and economic progress at a crucial crossroads. It faces the twin challenges of fulfilling the growing food demands of a swiftly expanding worldwide population and adapting to climate change's adverse effects. The United Nations estimates that by 2050, the global population will hit 9.7 billion, necessitating a 70% boost in agricultural production to maintain food security (Bateman & Balmford, 2023; Fischer et al., 2023; Zaremohzzabieh et al., 2022). In this critical period of transformation, the younger generation emerges as an agent in this envisaged transformation. Their adaptability, technological savvy, and new perspectives can drive future agriculture.

Despite agriculture's undeniable importance, there is a noticeable decline in interest among the younger generation toward agricultural careers, especially in developing areas such as Latin America, Africa, and Asia (Geza et al., n.d.; Hueston & McLeod, 2012; Leavy & Hossain, 2014). This trend is alarming, given the potential of the youth to drive technological innovation and adopt sustainable farming methods essential for addressing climate change challenges (FAO, 2017; Vos & Bellù, 2019). Factors such as aspirations for formal employment, the allure of modern urban lifestyles, and the perception of farming as a demanding profession with limited resources and land access contribute to this disinterest, and they believe that agriculture does not provide opportunities (Girdziute et al., 2022; Hillary & TechBullion, 2023).

Among the growing concerns of declining interest in the agricultural sector and its looming challenges, the urgency to delve into the motivations behind students' career choices in agriculture

has never been more critical. This study focuses on King Mongkut's Institute of Technology Ladkrabang (KMITL), an institution in Thailand. Investigating KMITL students' perceptions and intentions toward agriculture serves a twofold purpose: firstly, to unearth underlying factors influencing their career inclinations, and secondly, to harness these insights in sculpting robust strategies aimed at rejuvenating interest in agricultural vocations. The intent is to provide policymakers, educators, and industry stakeholders with a blueprint for action that not only counteracts the current trend of disengagement among the youth but also bolsters the agricultural sector's capacity to weather the multifaceted challenges of the 21st century. Understanding the aspirations and reservations of these future agriculturists is pivotal in tailoring interventions that resonate with their expectations and ambitions, thereby securing a sustainable future for agriculture.

1.2 Problem statement and research gap

The agricultural sector stands at a pivotal crossroads, grappling with the dual challenges of escalating global food demand and the imperative for rapid adaptation to technological advancements and environmental shifts. Despite agriculture's critical role in global sustainability, a paradoxical decline in interest among the younger generation toward agricultural careers is evident, especially pronounced in developing regions, including Thailand (FAO, 2022; Zaremohzzabieh et al., 2022).

Research across various countries indicates that university graduates often hold negative perceptions of agriculture, considering it a less desirable career path (Chinsinga & Chasukwa, 2012; Ridha et al., 2017; S. Roy et al., 2016). While much research has been conducted on the

general youth population's attitude towards agriculture, studies explicitly focusing on those specializing in agriculture at the tertiary education level are comparatively rare.

At King Mongkut's Institute of Technology Ladkrabang (KMITL), this study focuses on a noticeable decline in student enrollment in agricultural programs in recent years. This trend reflects a broader disengagement among youth from agriculture, signaling a need for a renewed focus on understanding and addressing the factors behind this trend (*Www.Reg.Kmitl.Ac.Th*, n.d.).

Due to the declining interest in agriculture, applying the theory of planned behavior to this research is essential. By exploring these psychological factors, TPB helps us understand how attitudes, subjective norms, and perceived control shape intentions toward pursuing a career in agriculture. While the Theory of Planned Behavior (TPB) from (Ajzen, 1991) has been employed in related studies, its application in predicting agricultural career intentions using linear and nonlinear models still needs to be explored with variables that indicate rapid change among the new generation. This research aims to fill these gaps by extending TPB; it seeks to offer policy implications specifically tailored to this demographic, thereby addressing the theoretical and policy gaps in the existing literature, which may not capture the issue's complexity and multidimensionality.

1.3 Research Questions

By applying the theory of planned behavior, This research aims to provide a nuanced understanding of the factors influencing KMITL students' career paths in agriculture, especially in the context of declining enrollment in agricultural programs. To achieve this, the study will address the following research questions:

1. What factors influence students' decision to pursue a career in agriculture? This question aims to identify key variables—from personal attitudes to external influences—that shape career choices in agriculture.
2. What factors influence students' decision to pursue a career in agriculture? This question aims to identify key variables—from personal attitudes to external influences—that shape career choices in agriculture.
3. How can policy interventions and educational strategies be designed to enhance KMITL students' interest and participation in the agricultural sector? — This question focuses on identifying actionable insights for policymakers and educators to attract more young people to careers in agriculture.

1.4 Objectives of the study

The general objective of this study is to investigate the factors influencing university students' career choices in agriculture, focusing on attitudes, perceptions, and policy implications. This will serve as a comprehensive guide for educational institutions, policymakers, and stakeholders in the agricultural sector. The specific objectives are as follows:

1. Examine the influence of attitudinal factors on undergraduate students' intentions to pursue careers in agriculture
2. Assess the impact of subjective norms on students' intentions toward agriculture careers
3. Evaluate the role of perceived behavioral control in shaping undergraduate students' intention to engage in agricultural careers
4. Develop targeted interventions and policy recommendations to enhance undergraduate students' interest and participation in the agriculture sector

These objectives align with the research questions and will be pursued using a rigorous methodological approach, including Structural Equation Modeling (SEM) and Text Analysis for quantitative analysis and an open question in a questionnaire for qualitative insights.

1.5 Research framework

Figure 1.1 shows the structured research design that guides this study. It starts with identifying the research problem or questions about what influences agricultural career intentions among Thai undergraduate students. Data is then collected from King Mongkut's Institute of Technology Ladkrabang (KMITL) students. The collected data is analyzed in several ways: text analysis to understand students' attitudes and perceptions and sentiment analysis to gauge their emotional tone. Factor analysis, including exploratory (EFA) and confirmatory (CFA), is used to uncover and confirm the main factors influencing career intentions.

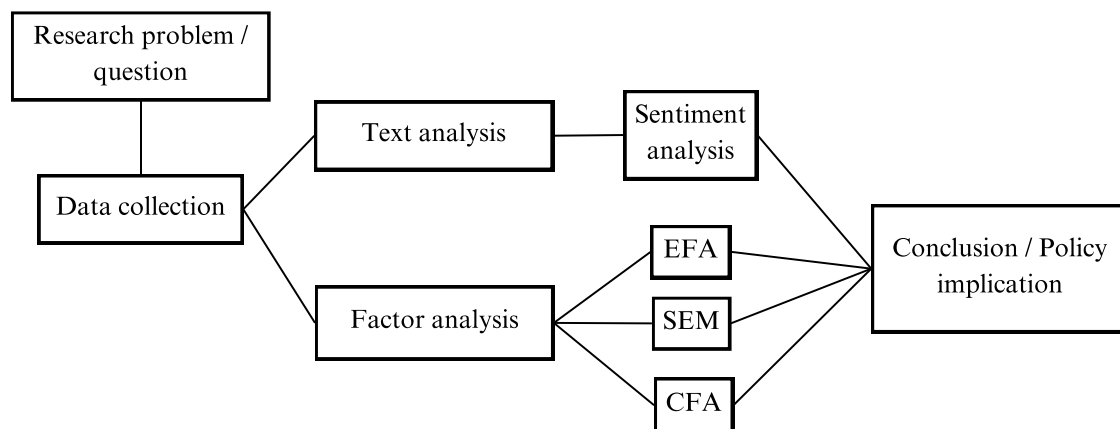


Figure 1.1 Research framework in linking the process of agricultural through the lens of young people

Structural Equation Modeling (SEM) is then used to test the relationships between these factors. The results from EFA, CFA, SEM, and sentiment analysis are combined to draw

conclusions and provide policy recommendations. These recommendations aim to improve agricultural education programs and strategies to attract more students to agricultural careers. This framework ensures a systematic approach to understanding and addressing the factors influencing students' agricultural career choices.

1.6 Scope of the study

The scope of this research is strategically designed to be comprehensive and focused, centering on Thailand's complex agricultural landscape with a specific emphasis on King Mongkut's Institute of Technology Ladkrabang (KMITL) in Bangkok. Conducted within a clearly outlined time frame, the study aims to draw a targeted sample size of at least 160 respondents, the minimum sample size for analysis using Structural Equation Modeling (SEM). Employing a mixed-methods approach, the research will utilize SEM, Exploratory Factor Analysis (EFA), and Confirmatory Factor Analysis (CFA) as primary analytical tools. The target population comprises two main groups: students currently enrolled in agriculture-related programs and those not enrolled, providing contrasting yet complementary perspectives. This delineation helps in measuring the Agricultural Intention (AI), as defined in **Table 1.1**, which indicates the inclination of individuals, particularly the younger generation, to engage in agricultural activities as a career path. While the study aims for comprehensiveness, it acknowledges limitations related to sample size and logistical challenges of accessing respondents in remote areas. The researcher, therefore, uses analytical tools such as the Theory of Planned Behavior (TPB) to check values, along with a pilot survey, to increase the reliability and efficiency of the research tool. This framework helps understand the complex interplay of attitudes, subjective norms, and perceived behavioral control, influencing youths' views and intentions toward agriculture.

Table 1.1 List of important terms discussed

Research terms	Definition	Source
Agricultural Intention (AI)	The inclination or planned decision of individuals, particularly the younger generation, to engage in agricultural activities as a career path.	
Structural Equation Modeling (SEM)	<i>“A comprehensive statistical approach for testing hypotheses about the relationships among observed and latent variables”</i> : used in the study to understand the complex interplay of factors influencing youth's view and intention toward agriculture.	Hair et al., 2021
KMITL	<i>“King Mongkut's Institute of Technology Ladkrabang is the university focusing on this study.”</i>	
Theory of Planned Behavior (TPB)	<i>A theory that aims to explain human behavior through three key variables: attitudes, subjective norms, perceived behavioral control, and perceived value. In this study.</i>	Ajzen, 1991

CHAPTER 2. REVIEW OF RELATED LITERATURE, CONCEPTUAL FRAMEWORK, HYPOTHESIS

The study assesses the link between agricultural intention and various factors. First, this chapter provides a background of the implementation of agricultural intention. Second, the possible role of young people in collective actions and their roles in developing better agricultural job intention (AJI) is explored. Afterward, the production efficiency measurement and the hypothesized structural link of the social capital, collective actions, and (AJI) are presented. The sections under this chapter are presented as follows:

- 2.1 Agricultural Policy Developments in Thailand
- 2.2 Theoretical Foundations: Extended Theory of Planned Behavior (TPB)
- 2.3 Behavioral intention and predictive variables
- 2.4 Factor influencing agricultural career intentions
- 2.5 Research gap and hypotheses

2.1 Agricultural Policy Development in Thailand

Thailand has implemented agricultural policies and reforms since the 1960s to transform and modernize the sector. Under the National Economic and Social Development Plans, starting in the 1960s, the government focused on expanding agricultural productivity through new technologies and infrastructure investments (Chomchalow, 1993). Price intervention policies were introduced in the 1980s to guarantee farmers' incomes through pledging programs (Pongsrihadulchai, 2019). In the 1990s, Thailand shifted towards export-oriented trade liberalization to boost agricultural competitiveness globally (Jongwanich, 2010). Later, policies promoted sustainable agriculture, organic practices, and sufficiency economy principles

(nantichas, n.d.). These policy shifts have dramatically changed the structure of Thai agriculture over the past few decades, from subsistence farming to export-oriented cash crop cultivation (Rigg et al., 2018). The reforms have also influenced young people's perceptions of agriculture as a traditional livelihood versus a modernized industry, impacting their intentions to pursue agricultural careers (Marta Ruiz Salvago, 2018). Some studies argue that the primary motivation to work in agriculture is the attitude toward agriculture, having parents involved in agricultural activities, a love for animals and nature, a readiness to start farming, and self-employment prospects after graduation (Inegbedion & Islam, 2020; Tiraieyari & Krauss, 2018). The government has implemented programs encouraging young people to take up farming to address the decline in youth interest in agriculture, such as the European Common Agricultural Policy's incentives for young farmers (Girdziute et al., 2022). However, these efforts have not been met with the expected enthusiasm, suggesting the presence of other influential socioeconomic factors and perceptions that impact the career decisions of the youth (Magagula & Tsvakirai, 2020). Therefore, examining youth attitudes and engagement in agriculture warrants a historical understanding of Thailand's evolving agricultural policy landscape.

2.2 Theoretical Foundations: Extended Theory of Planned Behavior (TPB)

The Theory of Planned Behavior (TPB) is a psychological theory that has been instrumental in understanding behavioral intention across various contexts, including agricultural development. Developed by Icek Ajzen in 1991, TPB has been widely applied to predict human Behavior and decision-making processes. The TPB framework comprises three primary constructs: Attitude Towards Behavior, Subjective Norms, and Perceived Behavioral Control.

- **Attitude Towards Behavior:** reflects an individual's favorable or unfavorable Assessment of a particular behavior based on the perceived outcomes of performing that Behavior.
- **Subjective Norms** represent the perceived social pressures or expectations from significant others that influence whether an individual will engage in a behavior.
- **Perceived Behavioral Control:** pertains to an individual's perception of their ability to perform the Behavior, considering the resources and obstacles that may facilitate or impede the Behavior.

The theories have been widely applied across various disciplines and have proven particularly useful in predicting the field's human Behavior and decision-making processes (Lalani et al., 2016; Miller, 2017, 2019). Applying TPB in this context will help identify targeted interventions and policies to encourage more students to consider careers in this sector (Sitienei & Morrish, 2014).

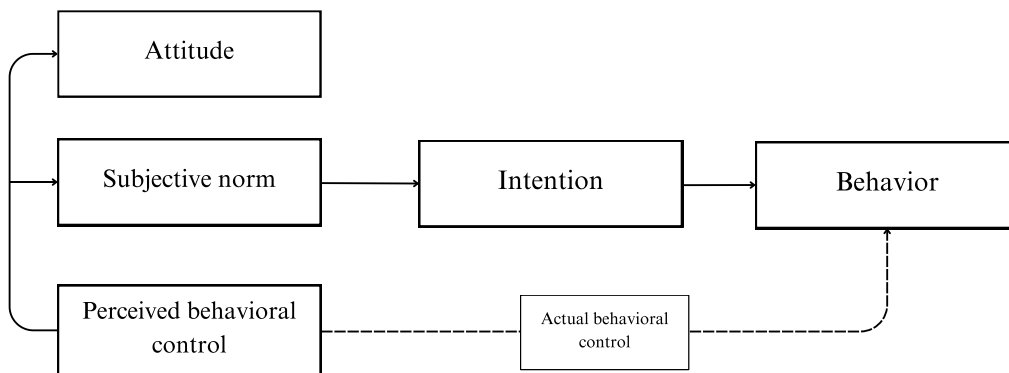


Figure 2.1 Theory of Planned Behavior (Ajzen, 1991)

2.2.1 Extension with Perceived Value

In addition to these core constructs, this study proposes to extend the TPB framework by incorporating the Perceived Value (PV) concept. Values serve as core principles that guide Behavior by providing a benchmark for evaluating individual attitudes and actions. The notion of "Perceived Value" (PV) emerged as a significant concept in the commercial realm during the 1990s and has since been explored across various fields (Sánchez-Fernández & Iniesta-Bonillo, 2007). In sectors such as business, entrepreneurship, and tourism, it has been found that perceived economic, functional, and relational values contribute to consumer satisfaction (Mustak, 2019; Oriade & Schofield, 2019). When applied to agriculture, PV encompasses the sector's contribution to the food supply, environmental stewardship, the preservation of traditional values, and support for national and global progress (Romstad et al., 2000). Furthermore, PV has been identified as a significant determinant of career intentions, influencing individuals' decisions to pursue specific professional paths (Jeong et al., 2021).

The Perceived Value is justified by recognizing that decisions, especially career choices, are not solely based on attitudes, norms, and control perceptions but also on the perceived intrinsic and extrinsic rewards associated with the Behavior (Sweeney & Soutar, 2001). In agriculture, perceived value may encompass beliefs about the sector's role in addressing global challenges such as food security, environmental conservation, and socioeconomic development, which can significantly influence young individuals' career intentions (Suprehatin & Shidiq, 2020).

2.3 Behavioral Intention and Predictive Variables

Behavioral Intention (BI) is a pivotal construct in the TPB framework, acting as the immediate precursor to individual engagement in a behavior (Brayley et al., 2015). It measures the extent to

which individuals have formed plans to engage in a specific future behavior, such as choosing a career in agriculture. The importance of BI lies in its predictive power; it is an accurate predictor of planned Behavior, especially in cases where the Behavior is difficult to observe or has yet to occur (Ajzen, 2011). In agriculture, several variables have been identified that can predict Behavioral Intention. These include Attitude Towards Agriculture (AT): A positive attitude towards agriculture can significantly influence an individual's intention to pursue a career in this field (Ali et al., 2020). Perceived Behavioral Control (PBC): The belief that one has control over performing the Behavior, such as having the necessary skills and resources, can also influence the BI (Bagheri et al., 2019). Subjective Norms (SN): Social pressures or the perceived expectations of important others, such as family and peers, can encourage or discourage an individual from choosing agriculture as a career (Tiraieyari & Krauss, 2018). A strong understanding of agricultural practices and the industry can positively influence the BI (Chowdhury & Roy, 2015). The availability of resources and support can either facilitate or hinder BI from pursuing a career in agriculture (Daxini et al., 2018). Gender and Place of Residence: These demographic factors have been found to moderate the relationship between the predictive variables and BI, adding another layer of complexity to the predictive model (Zampetakis et al., 2013). Understanding these predictive variables in the context of Behavioral Intention provides a nuanced view of the factors influencing agricultural career choices. It allows for developing targeted interventions and policies to encourage more students to consider careers in this vital sector.

2.4 Factors Influencing Agricultural Career Intentions

In understanding the dynamics of agricultural career intentions among students, it is essential to explore a broad spectrum of influencing factors beyond gender and socioeconomic status. This

section delves into the multifaceted elements that shape students' intentions towards pursuing careers in agriculture, drawing from the Theory of Planned Behavior (TPB) and empirical studies within the agricultural education context.

- **Personal Attitudes and Perceptions:** Students' attitudes towards agriculture, shaped by their perceptions of the sector's viability, sustainability, and technological advancements, play a crucial role in their career intentions. Positive attitudes toward innovative agricultural practices and sustainability can significantly influence students' inclination toward agriculture as a career choice (Ali et al., 2020; Arunrat et al., 2017).
- **Subjective Norms and Social Influences:** The influence of family, peers, and societal expectations cannot be understated. Students who perceive a strong social support system or societal value placed on agricultural careers are likelier to develop positive intentions towards the sector. This includes the impact of parental involvement in agriculture and the societal portrayal of agriculture as a modern and evolving field (Mukembo et al., 2017; Tiraieyari & Krauss, 2018).
- **Perceived Behavioral Control:** The perception of having the necessary skills, resources, and opportunities to pursue a career in agriculture directly impacts students' career intentions. Access to agricultural education, hands-on training, and awareness of career opportunities within the sector enhance students' perceived control and, consequently, their career intentions (Bond, 2022).
- **Educational and Policy Support:** The role of educational institutions and government policies in promoting agriculture as a viable career path is pivotal. Curricula integrating modern agricultural technologies, sustainability practices, and entrepreneurship, coupled

with policies that provide incentives and support for young agrarian professionals, are critical in shaping career intentions (Hair et al., 2021; Pongsrihadulchai, 2019).

- **Exposure to Agricultural Practices:** Direct exposure to agricultural practices through internships, field visits, and participation in agricultural projects influences students' understanding and interest in the sector. Such experiences demystify agriculture, showcasing its potential for innovation and entrepreneurship (Feldt, 2019; Pongsrihadulchai, 2019).

This section provides a comprehensive overview of the factors influencing agricultural career intentions among students. By focusing on these broader influencing factors, the study seeks to identify actionable insights that can help attract more young people to careers in agriculture, addressing the critical need for a new generation of agricultural professionals.

2.5 Research gap and hypothesis

Despite the extensive application of the Theory of Planned Behavior (TPB) in various fields, including agriculture, there remains a noticeable gap in the literature regarding the comprehensive integration of TPB with additional factors, such as Perceived Value (PV) in the context of agricultural education and career intentions among students. While TPB's core constructs—Attitude Towards Behavior, Subjective Norms, and Perceived Behavioral Control—have been explored, the role of (PV) in shaping agricultural career intentions, especially among students at institutions like King Mongkut's Institute of Technology Ladkrabang (KMUTL), has not been sufficiently examined. This gap presents an opportunity for this study to extend the TPB

framework by incorporating PV as a significant factor influencing students' intentions toward agriculture.

Furthermore, while previous research has identified various predictive variables for Behavioral Intention in agriculture, such as Attitude Towards Agriculture, Perceived Behavioral Control, and Subjective Norms, there is a lack of studies that explore these variables within the specific context of KMITL students. This study aims to fill these gaps by examining how these factors and PV influence agricultural students' career intentions at KMITL.

- H1: A positive Attitude Towards Agriculture (AT) will positively influence undergraduate students' intentions to pursue careers in agriculture.
- H2: Subjective Norms (SN) will positively influence undergraduate students' intentions to pursue careers in agriculture.
- H3: Perceived Behavioral Control (PBC) will positively influence undergraduate students' intentions to pursue careers in agriculture.
- H4: Perceived Value (PV) will positively influence undergraduate students' intentions to pursue careers in agriculture.

This section aims to highlight the research gaps in the existing literature and propose hypotheses that will guide the empirical investigation of this study. By addressing these gaps, the study seeks to contribute a deeper understanding of the factors influencing agricultural career intentions among university students, focusing on the extended TPB framework that includes Perceived Value.

CHAPTER 3.

METHODOLOGY

This chapter presents the methodological and analytical approaches employed in the study, focusing on discerning the catalysts of collective actions, comprehending the intricacies of Behavior, and gauging attitudes towards agriculture farms. The methodology adopted aims to shed light on these facets and ascertain the intricate connections between the diverse variables and factors under consideration. The sections under this chapter proceed as follows:

3.1 Study area

3.2 Data collection and sample

3.3 Data analysis

3.1 Study area

The study will be conducted at King Mongkut's Institute of Technology Ladkrabang (KMITL) in Bangkok, Thailand. KMITL is renowned for its academic excellence, particularly in agricultural technology, making it an exemplary setting for this research. The university's diverse student body, state-of-the-art facilities, and comprehensive agricultural programs offer a unique opportunity to explore the attitudes and intentions of students toward agricultural careers within a modern educational context.

KMITL's commitment to innovation in agriculture and its role in shaping the future of Thailand's agricultural sector positions it as an ideal backdrop for examining the factors influencing students' career choices in agriculture. The institution's location in Bangkok, a major urban center, adds a layer of interest, considering the urban-rural dynamics that may influence students' perceptions and career intentions in agriculture.

The study aims to engage a targeted sample size of at least 160 respondents from KMITL's student population. This sample will include students enrolled in agriculture-related programs and those from other disciplines, providing a comprehensive perspective on the factors influencing agricultural career intentions among the youth. The choice of KMITL as the study area aligns with the research objectives and ensures that the findings will be relevant and applicable to Thailand's broader agricultural education and career development context.

3.2 Data Collection and sample

Data collection for this study will be conducted using a mixed-methods approach, combining both qualitative and quantitative research methods. The primary data collection tools will include structured questionnaires for quantitative data and semi-structured interviews for qualitative insights. These tools will be designed meticulously to capture the complexities of the variables under study, such as attitudes, intentions, and perceptions toward agricultural careers.

The sample for this study will be drawn from the students at the university, targeting a minimum of 160 respondents to meet the statistical requirements for conducting Structural Equation Modeling (SEM). Utilizing a stratified random sampling technique, the study ensures adequate representation of both key groups—students enrolled in agriculture-related courses and those who are (Boomsma, 1982; Gagne & Hancock, 2006; Velicer & Fava, 1998). The robust sample size and advanced statistical methods like SEM ensure the generalizability and robustness of the study's findings (Gagne & Hancock, 2006). Additionally, the adequacy of the sample size is crucial for the likelihood of model convergence, as models based on larger samples, more indicators per factor, and more significant factor loadings are more likely to converge without improper solutions or impossible parameter estimates (Wolf et al., 2013).

Table 3.1 Profile of study sample.

Demographic	Category	Percent
Region	Bangkok and Vicinity	36
	Central	30.2
	East	8.4
	North	4.4
	North East	12
	South	9
Major	Agricultural communication	15.6
	Agricultural development	18.7
	Animal Production Technology and Meat Science	16.7
	Aquatic Animal Production and Management	22.6
	Economics and Business for Agriculture Development	4.4
	Plant production technology	8.3
	Smart Farm management	13.7
Family background related to agriculture	yes	67
	no	33

The survey encompassed 212 undergraduate students in agricultural disciplines across various institutions, each represented by at least five respondents. Post data cleaning, the analyzed sample included 204 students from the initial 212, reflecting a high engagement rate of 95.7%. The demographic breakdown, as depicted in **Table 3.1**, indicates that 67% of the respondents have a family background in agriculture. Males represented a substantial majority of the sample at 74.3%. Geographically, 61.9% of participants came from rural settings, and approximately two-thirds (65%) reported at least one family member involved in agricultural work. These findings were cross-referenced with current literature to ensure the survey's relevance to the target demographic. A review informed these modifications of relevant literature to provide the questionnaire's applicability to the current research setting. The specific items used to measure each variable are detailed in Appendix A of the study.

3.3 Data analysis and Assessment of the measurement model

Data analysis for this research will be a multi-step process designed to examine the relationships among the variables under study. The primary analytical tool will be Structural Equation Modeling (SEM). This statistical technique allows for exploring relationships between observed and latent variables. SEM will be particularly useful in understanding the intricate interplay of attitudes, subjective norms, perceived behavioral control, and perceived value in shaping agricultural career intentions among the younger generation, as shown in **Figure 3.1**.

Preliminary analyses will be carried out before conducting SEM. These will include descriptive statistics to summarize the characteristics of the sample, as well as Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) to validate the measurement models. EFA will be used to identify the underlying structure of the data, while CFA will confirm the factor structure and assess the reliability and validity of the constructs. Given the study's focus on the moderating effects of gender and socioeconomic status, multi-group SEM will be conducted to examine these relationships across different sub-groups. This will provide a more nuanced understanding of how these demographic factors influence career intentions in agriculture.

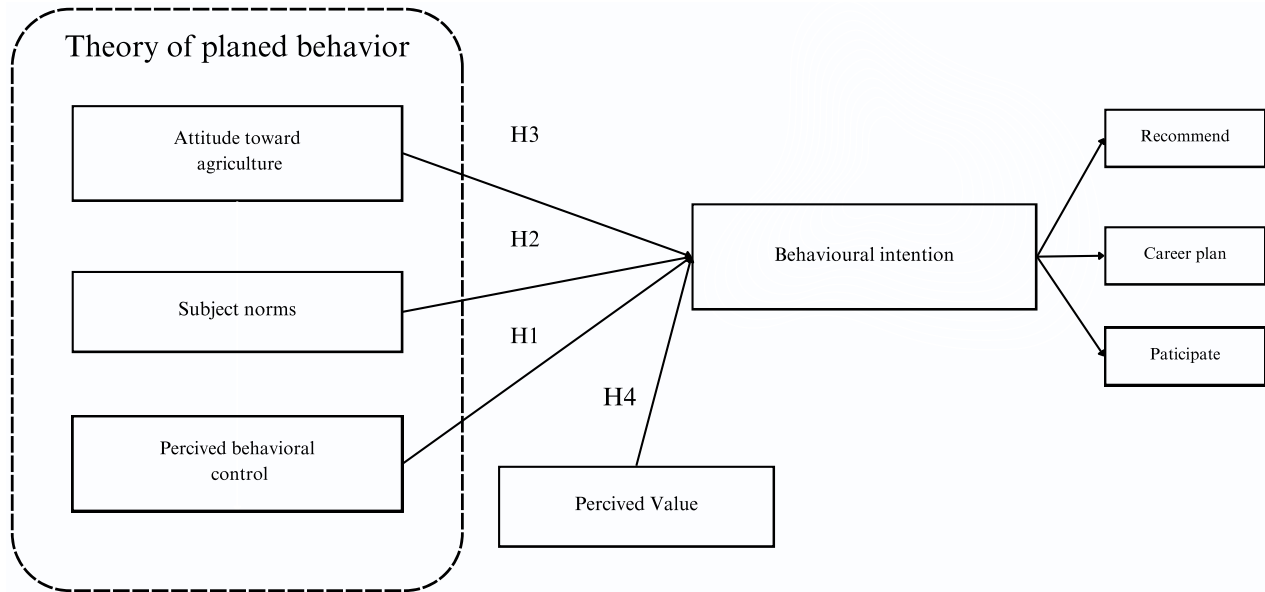


Figure 3.1 Empirical Structural Equation Model Illustrating the Influence of the Theory of Planned Behavior on Agricultural Intention

Concerning the structural model shown in Figure 3.1, specific hypotheses will be tested to examine the relationships among the key variables. These hypotheses are as follows:

- H1: Subjective Norms (SN) are positively associated with Behavioral Intention (BI) to pursue a career in agriculture among students.
- H2: Attitude Toward Agriculture (AT) is positively associated with Behavioral Intention (BI) to pursue a career in agriculture among students.
- H3: Perceived Behavioral Control (PBC) is positively associated with Behavioral Intention (BI) to pursue a career in agriculture among KMITL students.
- H4: Perceived Value (PV) is positively associated with Behavioral Intention (BI) to pursue a career in agriculture among KMITL students

Each path will be assessed for statistical significance, and the strength and direction of the relationships will be interpreted based on the path coefficients. Fit indices such as the Chi-Square

statistic, Comparative Fit Index (CFI), and Root Mean Square Error of Approximation (RMSEA) will be used to evaluate the model's overall fit. Furthermore, multi-group SEM will examine whether these relationships vary across different sub-groups, such as those based on gender or specific agricultural disciplines. This will provide additional insights into the moderating effects of these demographic factors.

By incorporating these hypotheses into the SEM analysis, the study will offer a nuanced and comprehensive understanding of the factors influencing career intentions in agriculture among the younger generation. This will validate the theoretical constructs and provide actionable insights for policy formulation and educational strategies.

Table 3.2 Summary of the expected relationship of the hypothesized structural path.

Hypotheses	Paths	Expected relationship
H1	Attitude toward agriculture → Agricultural intention	Positive
H2	Subject norms → Agricultural intention	Positive
H3	Perceived behavioral control → Agricultural intention	Positive
H4	Perceived value → Agricultural job intention	Positive

All statistical analyses will be performed using the R programming language, which offers robust packages for SEM and other advanced statistical methods. The choice of R aligns with its widespread use in academic research and its flexibility in handling complex statistical models. All statistical analyses and visualization will be performed using the R programming language, employing the lavaan, ggplot2, and Tidytextpackage for SEM analysis (Queiroz et al., 2023; Rosseel et al., 2023; Wickham et al., 2023).

3.3.1 Assessment of measurement model

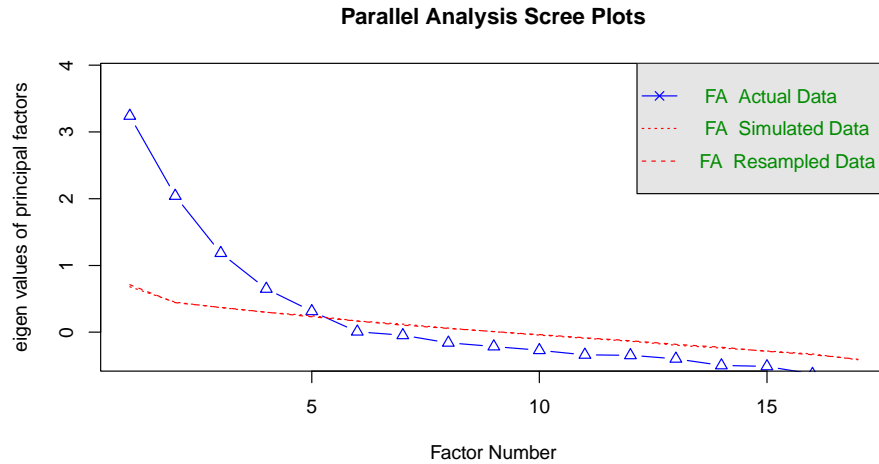


Figure 3.2 Parallel analysis scree plot confirms the existence of five factors.

loadings (λ), Cronbach's alpha (α), composite reliability (CR), average variance extracted (AVE), and discriminant validity as per the guidance of (Hair et al., 2021). The λ , α , and CR values should ideally surpass the 0.70 benchmark, and AVE values should exceed 0.50 to meet the convergent and discriminant validity criteria. The results were favorable: the Kaiser-Meyer-Olkin (KMO) measure was 0.804, which is above acceptable (Kaiser, 1970), indicating the sampling adequacy for factor analysis was more than satisfactory. Parallel analysis suggested a five-factor structure as optimal, corroborated by the scree plot **Figure 3.2**, which indicated clear demarcation and justified the retention of these factors. Additionally, Cronbach's alpha revealed a strong internal consistency with a high value of 0.86. The study's Loadings (λ) values were well above the 0.5 cutoff, ensuring both convergent and discriminant validity of the survey constructs. The outcomes of these assessments are detailed methodically in **Tables 4.1** and **4.2**, reflecting the reliability and validity of the measurement scales used to gauge the proposed constructs.

CHAPTER 4.

RESULTS

This chapter presents the central findings from the analysis conducted on the attitudes, subjective norms, perceived behavioral control, perceived value, and intentions towards agriculture among undergraduates at King Mongkut's Institute of Technology Ladkrabang (KMITL), utilizing the Theory of Planned Behavior (TPB). The structural equation modeling (SEM) approach has facilitated an in-depth understanding of the relationships between these constructs. The chapter is organized as follows to delineate the study's findings methodically:

4.1 Measurement Model Evaluation

4.2 Structural Model Analysis

4.3 Hypothesis Testing

4.4 Path Diagram of Structural Equation Modeling

4.5 Comparative of Agricultural Intentions Across Major

4.1. Measurement Model Evaluation

The results in **Table 4.1** illustrate the soundness of the convergent validity within the study's measurement model. Factor loadings for all items are well above the 0.5 threshold, with 'Attitude Toward Agriculture' items like AT1 and AT2 demonstrating particularly high loadings of 0.914 and 0.932, indicating a strong relationship with the underlying construct. Composite Reliability (CR) values exceed the 0.7 cut-off across all constructs, evidencing high internal consistency, notably within the 'Attitude Toward Agriculture' construct at 0.931. Average Variance Extracted (AVE) for each construct also surpasses the 0.5 benchmark, showcasing that more than half of the

variance of the indicators is accounted for by their respective constructs, confirming the constructs' good convergent validity. This set of results firmly establishes the constructs' accuracy in capturing the essence of the theoretical dimensions they represent, thereby providing a reliable base for subsequent structural analysis in the study.

Table 4.1 Convergent validity

Constructs	Items	Loading (λ)	CR	AVEs
Attitude Toward Agriculture	AT1	0.834	0.931	0.823
	AT2	0.972		
	AT3	0.835		
Subjective Norms	SN1	0.785	0.737	0.541
	SN2	0.807		
	SN4	0.637		
Perceived Behavioral Control	PBC1	0.678	0.752	0.502
	PBC2	0.717		
	PBC3	0.752		
Pecieved Value	PV1	0.698	0.805	0.536
	PV2	0.943		
	PV3	0.650		
	PV4	0.787		
Intention Toward Agriculture	AI2	0.694	0.729	0.559
	AI3	0.767		
	AI4	0.623		

4.2. Structural Model Analysis

Table 4.2 shows the fit indices, which showed good model fit as the data fell within the recommended value. The goodness-of-fit measures for the structural equation modeling analysis provide a comprehensive view of how well the proposed model aligns with the observed data. The Standardized Root Mean Square Residual (SRMR) value is at 0.061, well below the recommended maximum of 0.08, indicating a satisfactory fit with small residuals between observed and predicted

values. The Comparative Fit Index (CFI), with a value of 0.948, exceeds the benchmark of 0.90, suggesting that the model substantially improves over a baseline model that assumes no correlation among variables. This is further supported by the Incremental Fit Index (IFI) of 0.949, surpassing the recommended threshold, affirming that the model has an excellent incremental fit over the null model.

The Goodness-of-Fit Index (GFI) at 0.909 indicates that the model accounts for a significant amount of variance and covariance observed in the data, denoting a good fit. The Tucker-Lewis Index (TLI) stands at 0.934, which is above the acceptable criterion and indicates that the model fits well when considering the number of parameters estimated.

Table 4.2. The Goodness of Fit Measures

Fit index	Research model	Recommended values	Reference
SRMR	0.061	≤ 0.08	(Hu & Bentler, 1999)
CFI	0.948	≥ 0.90	(Bentler, 1990)
GFI	0.909	≥ 0.90	(Jöreskog, 1982)
IFI	0.949	≥ 0.90	(Bollen, 1989)
TLI	0.934	≥ 0.90	(Tucker & Lewis, 1973)
RMSEA	0.063	≤ 0.08	(Hu & Bentler, 1999)

Note: SRMR: Standardized Root Mean Square Residual, CFI: Comparative fit index; GFI: Goodness-of-fit index; IFI: Incremental fit index; TLI: Tucker-Lewis Index; NNFI: Non-normed fit index; RMSEA: Root mean square error of approximation.

The Root Mean Square Error of Approximation (RMSEA) is 0.063, falling within the desired range of less than 0.08. This points to a model that approximates the data well, with a low level of approximation error. These indices collectively signal that the SEM model is robust, providing a reliable representation of the relationships between the variables according to the Theory of Planned Behavior. This implies that the model structure is appropriate for understanding the factors influencing agricultural intentions among the students surveyed.

4.3. Hypothesis Testing

In the hypothesis testing section, Table 4.2 demonstrates that the Theory of Planned Behavior effectively predicts agricultural intentions among KMITL undergraduates. The analysis supports all four hypotheses. Students' positive attitudes toward agriculture (AT) show a meaningful correlation with their intentions (AI) to pursue agriculture, indicated by a path coefficient (β) of 0.34. Social influences, or subjective norms (SN), also play a slightly smaller role, with a β of 0.147. The standout finding is the strong impact of perceived behavioral control (PBC) on students' intentions, with a high β of 0.428, emphasizing that students' perceptions of their ability to succeed in agriculture significantly shape their intentions. The perceived value (PV) of agriculture, with a β of 0.170, also positively affects students' intentions to work in this field. The statistical significance of these findings, with all p-values well below the 0.05 threshold, solidifies the reliability of these behavioral predictors. This section of the study not only confirms the usefulness of the TPB model but also highlights the particular importance of control perceptions in the context of agriculture.

Table 4.2 Summary of the study results.

Hypothesis Testing				Results	
Hypothesis	Path	support	β	z-values	p Values
H1	AT→AI	yes	0.340	3.591	0.000
H2	SN →AI	yes	0.147	1.999	0.046
H3	PBC→AI	yes	0.428	4.192	0.000
H4	PV→AI	yes	0.170	1.956	0.050

Note: AI: students' Agricultural intention; AT: attitude; SNs: subjective norms; PBC: perceived behavioral control; PV: Perceived value

4.4. Path Diagram of Structural Equation Modeling

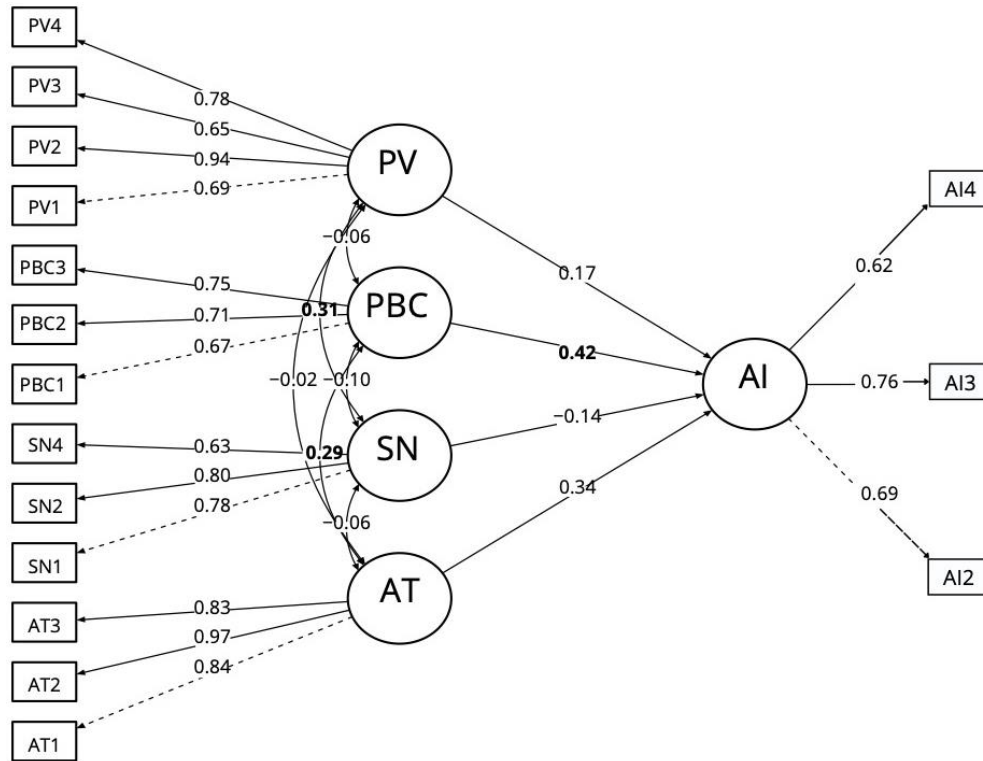
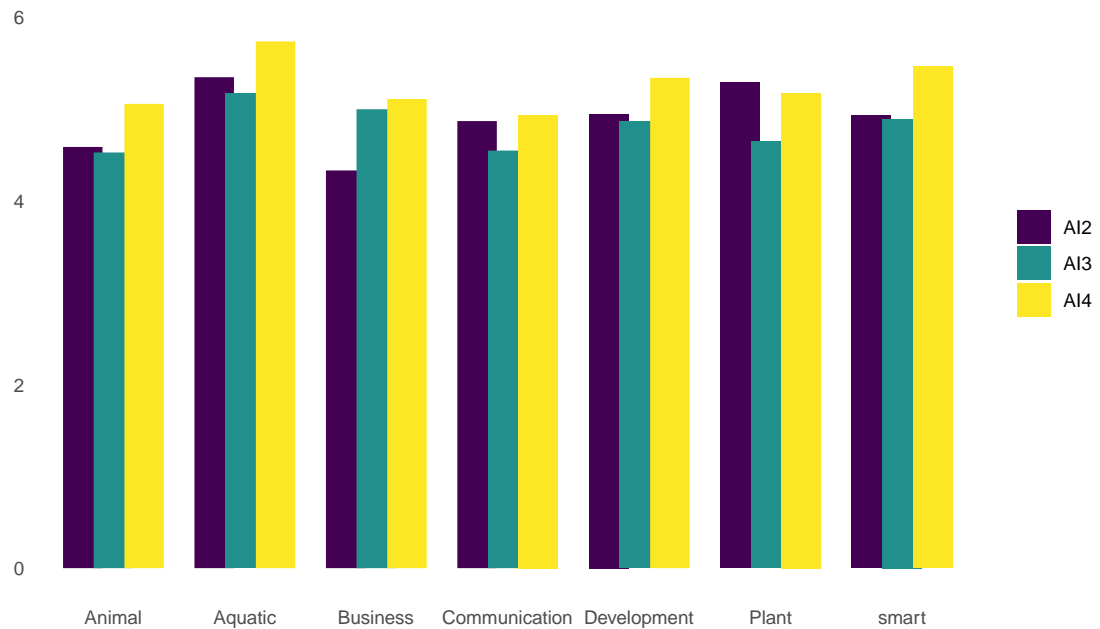


Figure 4.1 Path diagram and hypotheses testing results.

The path diagram is more than a summary; it's a precise breakdown showing that students' belief in their control over pursuing an agricultural career, which we call Perceived Behavioral Control (PBC), is the most influential, significantly affecting their intentions. The attitudes toward agriculture (AT) they hold, and the value (PV) they attach to the field also contribute positively but to a lesser extent. The connections between these factors stand out in the analysis, such as how students' positive attitudes are linked to a stronger sense of control, suggesting that the more students value agriculture, the more empowered they feel to follow that path. This section will walk the reader through a deeper understanding of these relationships, interpreting the numbers as a clear story about what drives students towards careers in agriculture.

4.5. Comparative of Agricultural Intentions Across Major.



Note: AI2: Plan to study or gain additional knowledge about agriculture, AI3: Intend to apply knowledge in agriculture; AI4: pursue a career in agriculture-related fields.

Figure 4.2 Rating intention toward agriculture for each major

We examine the variations in agricultural intentions among students from different academic majors. The bar graph displays students' ratings for their plans to study agriculture (AI2), apply agricultural knowledge (AI3), and pursue a career in agriculture-related fields (AI4). The intention levels are consistent across majors, with students from the 'Smart Farm' and 'Aquatic' majors showing marginally higher intentions to pursue a career in agriculture, which might be expected given their direct connection to agriculture. Students in the Business and Economics and 'Aquatic' majors also demonstrate strong intentions to apply knowledge in practice, recognizing agriculture's relevance across sectors. This analysis reveals the overall positive inclination of students towards engaging with agriculture, irrespective of their major, suggesting a broad-based acknowledgment of the field's importance.

CHAPTER 5.

DISCUSSION

In the global need for youthful engagement in agriculture, this study at King Mongkut's Institute of Technology Ladkrabang (KMUTL) addresses a critical gap by exploring how agricultural students perceive and intend to pursue careers in agriculture with different points of view from those who inherit and do not come from a family farm. Utilizing an extended version of the Theory of Planned Behavior (TPB), this chapter discusses the career choice intentions among undergraduates using SEM. The sections under this chapter proceed as follows:

Error! Reference source not found. The Influence Factors on Agriculture Career Intentions

Error! Reference source not found. Changing Agricultural Career Trend

5.1. The Influences of Factors on Agriculture Career Intention

The results demonstrate how students' attitudes (AT) and perceived behavioral control (PBC) are crucial and associated in shaping their intentions (AI). Both findings align with earlier research on students' intentions to engage in the agricultural sector (Ridha et al., 2017; Tiraieyari & Krauss, 2018a; Zaremohzzabieh et al., 2022). Students' intention was significantly predicted by their attitude toward a career in agriculture. Undergraduates are more motivated to hunt for agriculture professions if they think doing so would benefit them and their societies (Jones et al., 2017). PBC is the strongest predictor of a student's intention. Students are more likely to choose a career path where they feel competent to carry out the necessary work duties and activities. Similar to the previous results (Abhayarathne, 2021; Njeru & Mwangi, 2016), PBC can forecast students' intentions to work in agriculture. With the quick changes in technology and government assistance,

sufficient resource allocation knowledge and organizational support help students be productive in the agricultural industry (Cai et al., 2017).

Given the collectivist structure of Thailand's culture, it is somewhat interesting that (SN) is the weakest to forecast intention in the present research. The impact of cultural norms probably varies from nation to nation, making it contextually different for the influence of SN on the decision to follow a certain profession (Zellweger et al., 2011). The research also raises the notion that modern adolescents, including those from collectivist countries, make professional selections based more on personal than communal reasons. Because they tend to be more autonomous and unaffected by others around them, older, more educated teens may also make decisions with less regard to social norms. The results also indicate that modern young individuals, even within collectivist societies, may prioritize individual preferences over communal influences when making career choices. Norms may now play a lesser role in the decisions of older, more educated young people. As such, young people tend to be more independent and less influenced by those around them. Also, The results demonstrate that PV is small and significant to AI. This result differed from the previous (Jeong et al., 2021). In this context, it may also be inferred that the ambition to pursue an agricultural profession was relatively low and that valuing will not affect intentions towards agriculture.

Moreover, some study results revealed that technological competency significantly predicts agricultural career intention (S. K. Roy, 2023; Zarefard & Cho, 2017). So, it can be argued that technological competency increases students' intention to pursue an agricultural career. For example, students proficient in cultivation methods, the creation of organic pesticides, the creation of compost, and the management of pests and illnesses tend to have superior field knowledge. They are more motivated to seek a profession in agriculture.

5.2. Changing Agriculture Career Trend

The results of our study from SEM and focus group interviews reveal how factual factors deal with and affect undergraduate ideas of agriculture at present, which are shaped significantly by students' attitudes, perceived behavioral control, subjective norms, and perceived values. Notably, there is an increased interest among students in integrating sustainable practices and technological applications within agriculture, suggesting a shift towards more innovative and environmentally conscious farming approaches. These trends are critically influenced by the students' positive perceptions of agriculture as a viable career, their belief in their ability to succeed in such careers (perceived behavioral control), the influence of significant others' opinions (subjective norms), and the value they attach to agricultural careers in terms of personal satisfaction and societal contribution (Chylova et al., 2019; Shenaifi, 2013). This collective orientation could potentially lead to a transformative impact on the future landscape of agriculture, steering it towards more sustainable and technologically driven paradigms.

Findings show high perceived behavioral control (PBC) and low subjective norms (SN). This finding contradicts related studies reporting subjective norms as the strong predictor of youth participation in agriculture (Lediana et al., 2023; Thephavanh et al., 2023; Tiraieyari & Krauss, 2018). The impact of family or peer influence on young people's career aspirations in farming appears to have evolved. This suggests that modern youth may now base their career choices more on personal capability and less on parental expectations compared to previous generations. The agricultural sector's perception has undergone a significant transformation; within this evolving context, agricultural students' career intentions reflect a broader trend: a commitment to transform the agricultural sector into a hub of economic growth, sustainability, and technological progress.

CHAPTER 6.

CONCLUSION, IMPLICATION, AND RECOMMENDATION

This final chapter lays out the main takeaways, the broader effects these findings have on agricultural education, and the steps we can take next. Here, we will wrap up our study by looking at what it all means and how we can use this new understanding to make a difference in how young people view a future in farming and agriculture. This is where we translate our findings into practical advice for educators and policymakers, aiming to spark more interest in agricultural careers among the youth. Therefore, this study provides the concluding remarks, implications, and recommendations. The sections under this chapter proceed as follows:

6.1 Conclusion

6.2 Implications and recommendations

Error! Reference source not found. Agricultural Education Curriculum

Implication

Error! Reference source not found. Recommendation and Future Study

6.1. Conclusion

Students' intentions to join agriculture also differed according to the major of study (Bednaříková et al., 2016). SEM showed the paths of factors and relationships among themselves. The results demonstrate how attitude and perceived behavioral control were linked as the strongest predictors for students from both urban and rural backgrounds. Students might see greater potential in agriculture-related industries by acquiring specialized knowledge. They are also less influenced by social pressure, regardless of whether they come from a family background or not from a family with an agricultural background. The significance of these findings lies in their implications for

agricultural education programs. By highlighting the crucial role of individual attitudes and perceived control over professional capabilities, it becomes evident that agricultural education should not only impart technical skills but also focus on enhancing students' self-efficacy and reshaping perceptions about the viability and prestige of careers in agriculture. This approach could help mitigate the traditional stigma associated with agricultural jobs and illuminate the sector's diverse and technologically advanced opportunities. Programs designed to increase the visibility and attractiveness of agricultural careers can include career counseling, mentorships, and exposure to successful agricultural professionals and enterprises.

This study underscores the importance of addressing perceptual and skill-based components in agricultural education and serves as a call to action for educators, policymakers, and industry stakeholders to collaborate on developing more integrated and appealing agricultural education programs. By aligning curriculum enhancements with industry needs and student perceptions, agricultural education can become a catalyst for attracting more students to this vital sector. The strategic application of findings from this research could significantly influence the future of agriculture, making it a more accessible and desirable field for the next generation of professionals.

6.2. Implications and recommendations

6.2.1. Agricultural Education Curriculum Implication

The results shed on the considerations agricultural students weigh when deciding on a career in agriculture. To attract and retain university students in this field, policymakers must address the motivational drivers influencing students' choices as part of their recruitment strategies. Facilitating students' entry into agricultural careers can positively shape their career intentions (Huff et al., 2016). Universities must adapt their curricula to overcome potential obstacles and meet student concerns, particularly by offering comprehensive fieldwork experiences, hands-on

training, and other developmental activities that bolster students' career aspirations and vision, enhance their understanding of agriculture, clarify the roles within the industry, and highlight the viability of agricultural careers. Additionally, the study underscores the critical role of integrating sustainable agricultural practices to bolster students' commitment to pursuing careers in this area. Therefore, introducing more robust, sustainability-focused practical training initiatives could be instrumental in attracting and retaining students interested in agricultural degrees.

The agricultural industry needs important resources. Institutions should support learners' continued skills and knowledge development through their institutional channels since they could be less conscious of the industry's wide range of options (Zaremohzzabieh et al., 2022). Following the requirements and concerns of both groups, universities should start and keep up an active recruitment program to help provide career prospects for agriculture students. Students may be more inspired to engage in the agricultural sector when such possibilities are accessible, and resources are simple to acquire since they know educational and governmental support exists. The results of the SEM study indicate that PBC is the most important predictor of career intensity. Students perceived behavior and self-confidence as needing support from related organizations to develop agricultural careers.

6.2.2. Future studies

Besides the contributions highlighted earlier, this study acknowledges significant limitations. Self-administered surveys may not have fully captured the breadth of the topic under investigation. A more holistic understanding might have been developed through a mixed-methods approach, integrating quantitative and qualitative analyses to explore the dynamics influencing behavioral intentions (BI). This research primarily considered independent variables to predict agricultural career intentions (AI); however, future research could explore potential mediating variables such

as communication skills. It is recommended that subsequent studies utilize longitudinal methods to assess how effectively the Theory of Planned Behavior (TPB) predicts undergraduates' career intentions by tracking alumni working in the agricultural sector.

Furthermore, considering the readiness of the youth to embrace new concepts, technologies, and innovations, additional research is needed to understand how young individuals adapt to contemporary agricultural practices. Research on human capital development in agriculture must also go beyond traditional labor, particularly among young people with high educational qualifications, to explore the possibilities for new careers. This could provide valuable insights into harnessing their potential as key drivers of advancement in the agriculture sector.

REFERENCES

- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179–211. [https://doi.org/10.1016/0749-5978\(91\)90020-T](https://doi.org/10.1016/0749-5978(91)90020-T)
- Ajzen, I. (2011). The theory of planned behaviour: Reactions and reflections. *Psychology & Health*, 26(9), 1113–1127. <https://doi.org/10.1080/08870446.2011.613995>
- Ali, M., Man, N., Muharam, F., & Omar, S. (2020). Factors Influencing Behavioral Intention of Farmers to Use ICTs for Agricultural Risk Management in Malaysia. *Pakistan Journal of Agricultural Research*, 33. <https://doi.org/10.17582/journal.pjar/2020/33.2.295.302>
- Arunrat, N., Wang, C., Pumijumngong, N., Sereenonchai, S., & Cai, W. (2017). Farmers' intention and decision to adapt to climate change: A case study in the Yom and Nan basins, Phichit province of Thailand. *Journal of Cleaner Production*, 143, 672–685. <https://doi.org/10.1016/j.jclepro.2016.12.058>
- Bagheri, A., Bondori, A., Allahyari, M. S., & Damalas, C. A. (2019). Modeling farmers' intention to use pesticides: An expanded version of the theory of planned behavior. *Journal of Environmental Management*, 248, 109291. <https://doi.org/10.1016/j.jenvman.2019.109291>
- Bateman, I., & Balmford, A. (2023). Current conservation policies risk accelerating biodiversity loss. *Nature*, 618(7966), 671–674. <https://doi.org/10.1038/d41586-023-01979-x>
- Bednaříková, Z., Bavorová, M., & Ponkina, E. V. (2016). Migration motivation of agriculturally educated rural youth: The case of Russian Siberia. *Journal of Rural Studies*, 45, 99–111. <https://doi.org/10.1016/j.jrurstud.2016.03.006>
- Bentler, P. M. (1990). Comparative fit indexes in structural models. *Psychological Bulletin*, 107(2), 238–246. <https://doi.org/10.1037/0033-2909.107.2.238>
- Bond, M. (2022, March 29). Thailand's agricultural policies: A hand out, not a hand up. *Asialink*. <https://asialink.unimelb.edu.au/insights/thailands-agricultural-policies-a-hand-out,-not-a-hand-up>
- Boomsma, A. (1982). The robustness of LISREL against small sample sizes in factor analysis models. Part I, 1.
- Brayley, N., Obst, P. L., White, K. M., Lewis, I. M., Warburton, J., & Spencer, N. M. (2015). Examining the predictive value of combining the theory of planned behaviour and the

- volunteer functions inventory. *Australian Journal of Psychology*, 67(3), 149–156. <https://doi.org/10.1111/ajpy.12078>
- Cai, Y., Golub, A. A., & Hertel, T. W. (2017). Agricultural research spending must increase in light of future uncertainties. *Food Policy*, 70, 71–83. <https://doi.org/10.1016/j.foodpol.2017.06.002>
- Chinsinga, B., & Chasukwa, M. (2012). Youth, Agriculture and Land Grabs in Malawi. *IDS Bulletin*, 43(6), 67–77. <https://doi.org/10.1111/j.1759-5436.2012.00380.x>
- Chomchalow, N. (1993). Agricultural development in Thailand. In F. P. de Vries, P. Teng, & K. Metselaar (Eds.), *Systems approaches for agricultural development: Proceedings of the International Symposium on Systems Approaches for Agricultural Development*, 2–6 December 1991, Bangkok, Thailand (pp. 427–443). Springer Netherlands. https://doi.org/10.1007/978-94-011-2842-1_26
- Chowdhury, S., & Roy, S. (2015). Evaluating the Impact of Insurance Companies in the Development of Insurance Practices in Bangladesh (SSRN Scholarly Paper 2765018). <https://papers.ssrn.com/abstract=2765018>
- Chylova, H., Michálek, P., Rymesova, P., & Natovová, L. (2019). Future Agriculturists: Czech and U.S. Agricultural Students' Attitudes Towards Agriculture. *Scientia Agriculturae Bohemica*, 50, 251–258. <https://doi.org/10.2478/sab-2019-0035>
- Daxini, A., O'Donoghue, C., Ryan, M., Buckley, C., Barnes, A. P., & Daly, K. (2018). Which factors influence farmers' intentions to adopt nutrient management planning? *Journal of Environmental Management*, 224, 350–360. <https://doi.org/10.1016/j.jenvman.2018.07.059>
- FAO (Ed.). (2017). *The future of food and agriculture: Trends and challenges*. Food and Agriculture Organization of the United Nations.
- FAO. (2022). *FAO Strategy on Climate Change 2022–2031*.
- Feldt, H. (2019). Preparing and accessing decent work amongst rural youth in Cambodia. FAO and Humboldt University of Berlin. <https://doi.org/10.4060/ca5630en>
- Fischer, J., Bennett, E., & Pe'er, G. (2023). Agriculture: Reform the global food system. *Nature*, 622(7983), 461–461. <https://doi.org/10.1038/d41586-023-03232-x>
- Gagne, P., & Hancock, G. R. (2006). Measurement Model Quality, Sample Size, and Solution Propriety in Confirmatory Factor Models. *Multivariate Behavioral Research*, 41(1), 65–83. https://doi.org/10.1207/s15327906mbr4101_5

- Geza, W., Ngidi, M., Ojo, T., Adetoro, A. A., Slotow, R., & Mabhaudhi, T. (n.d.). Youth Participation in Agriculture: A Scoping Review. *Sustainability*, 13(16), 9120. <https://doi.org/10.3390/su13169120>
- Girdziute, L., Besuspariene, E., Nausediene, A., Novikova, A., Leppala, J., & Jakob, M. (2022). Youth's (Un)willingness to work in agriculture sector. *Frontiers in Public Health*, 10, 937657. <https://doi.org/10.3389/fpubh.2022.937657>
- Hair, J. F., Hult, G. T. M., Ringle, C. M., Sarstedt, M., Danks, N. P., & Ray, S. (2021). An Introduction to Structural Equation Modeling. In J. F. Hair Jr., G. T. M. Hult, C. M. Ringle, M. Sarstedt, N. P. Danks, & S. Ray (Eds.), *Partial Least Squares Structural Equation Modeling (PLS-SEM) Using R: A Workbook* (pp. 1–29). Springer International Publishing. https://doi.org/10.1007/978-3-030-80519-7_1
- Hillary, & TechBullion, A. S.-B. (2023, July 5). The Changing Face of Farming: Why Today's Youth Avoid Agricultural Careers. TechBullion. <https://techbullion.com/the-changing-face-of-farming-why-todays-youth-avoid-agricultural-careers/>
- Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, 6(1), 1–55. <https://doi.org/10.1080/10705519909540118>
- Hueston, W., & McLeod, A. (2012). OVERVIEW OF THE GLOBAL FOOD SYSTEM: CHANGES OVER TIME/SPACE AND LESSONS FOR FUTURE FOOD SAFETY. In *Improving Food Safety Through a One Health Approach: Workshop Summary*. National Academies Press (US). <https://www.ncbi.nlm.nih.gov/books/NBK114491/>
- Huff, S. M., Stripling, C. T., Boyer, C., & Stephens, C. A. (2016). Investigating Factors that Influence Achievement Goal Orientation and Educational Practices in Undergraduate Agricultural Sciences and Natural Resource Students. *NACTA Journal*, 60(4), 423–431.
- Inegbedion, G., & Islam, Md. M. (2020). Youth motivations to study agriculture in tertiary institutions. *The Journal of Agricultural Education and Extension*, 26(5), 497–512. <https://doi.org/10.1080/1389224X.2020.1773285>
- Jeong, J., Hong, S., & Choi, H. (2021). Moderated mediating effects of 4-H experience on adolescents' agricultural career variables. *The Journal of Agricultural Education and Extension*, 27(2), 193–210. <https://doi.org/10.1080/1389224X.2020.1844770>
- Jones, K., Williams, R. J., & Gill, T. B. (2017). “If you study, the last thing you want to be is working under the sun:” an analysis of perceptions of agricultural education and occupations in four countries. *Agriculture and Human Values*, 34(1), 15–25. <https://doi.org/10.1007/s10460-016-9685-4>

- Jongwanich, J. (2010). Determinants of Export Performance in East and Southeast Asia. *The World Economy*, 33(1), 20–41. <https://doi.org/10.1111/j.1467-9701.2009.01184.x>
- Jöreskog, K. G., & Sörbom, D. (1982). Recent Developments in Structural Equation Modeling. *Journal of Marketing Research*, 19(4), 404–416. <https://doi.org/10.1177/002224378201900402>
- Kaiser, H. F. (1970). A second generation little jiffy. *Psychometrika*, 35(4), 401–415. <https://doi.org/10.1007/BF02291817>
- Lalani, B., Dorward, P., Holloway, G., & Wauters, E. (2016). Smallholder farmers' motivations for using Conservation Agriculture and the roles of yield, labour and soil fertility in decision making. *Agricultural Systems*, 146, 80–90. <https://doi.org/10.1016/j.agsy.2016.04.002>
- Leavy, J., & Hossain, N. (2014). Who Wants to Farm? Youth Aspirations, Opportunities and Rising Food Prices. *IDS Working Papers*, 2014(439), 1–44. <https://doi.org/10.1111/j.2040-0209.2014.00439.x>
- Lediana, E., Perdana, T., Deliana, Y., & Sendjaja, T. P. (2023). Sustainable Entrepreneurial Intention of Youth for Agriculture Start-Up: An Integrated Model. *Sustainability*, 15(3), Article 3. <https://doi.org/10.3390/su15032326>
- Magagula, B., & Tsvakirai, C. Z. (2020). Youth perceptions of agriculture: Influence of cognitive processes on participation in agripreneurship. *Development in Practice*, 30(2), 234–243. <https://doi.org/10.1080/09614524.2019.1670138>
- Marta Ruiz Salvago. (2018). Enhanced Entry of Young Generation into Agriculture: A Case Study in Prachinburi, Thailand [Asian Institute of Technology School of Environment, Resources and Development Thailand]. <https://deltasoutheastasia-doubt.com/wp-content/uploads/UploadedDocuments/ThesisYoungRuralPeopleMarta-Ruiz.pdf>
- Miller, Z. D. (2017). The Enduring Use of the Theory of Planned Behavior. *Human Dimensions of Wildlife*, 22(6), 583–590. <https://doi.org/10.1080/10871209.2017.1347967>
- Miller, Z. D. (2019). A Theory of Planned Behavior approach to developing belief-based communication: Day hikers and bear spray in Yellowstone National Park. *Human Dimensions of Wildlife*, 24(6), 515–529. <https://doi.org/10.1080/10871209.2019.1655682>
- Mukembo, S., Uscanga, J., Edwards, M., & Brown, N. (2017). Increasing Female Enrollment for Agricultural Programs of Study in Sub-Saharan Africa: What Motivates Women to Pursue Careers in Agriculture? *Journal of International Agricultural and Extension Education*, 24, 17–33. <https://doi.org/10.5191/jiaee.2017.24104>

- Mustak, M. (2019). Customer participation in knowledge intensive business services: Perceived value outcomes from a dyadic perspective. *Industrial Marketing Management*, 78, 76–87. <https://doi.org/10.1016/j.indmarman.2017.09.017>
- nantichas. (n.d.). Philosophy of Sufficiency Economy. Retrieved November 10, 2023, from <https://www.chaipat.or.th/eng/concepts-theories/sufficiency-economy-new-theory.html>
- Njeru, L. K., & Mwangi, J. G. (2016). INFLUENCE OF YOUTH ACCESS TO FARM PRODUCTS MARKETS ON THEIR PARTICIPATION IN AGRICULTURE IN KAJIADO NORTH SUB-COUNTY.
- Oriade, A., & Schofield, P. (2019). An examination of the role of service quality and perceived value in visitor attraction experience. *Journal of Destination Marketing & Management*, 11, 1–9. <https://doi.org/10.1016/j.jdmm.2018.10.002>
- Pongsrihadulchai, A. (2019). Thailand Agricultural Policies and Development Strategies. FFTC Agricultural Policy Platform (FFTC-AP). <https://ap.fftc.org.tw/article/1393>
- Queiroz, G. D., Fay, C., Hvitfeldt, E., Keyes, O., Misra, K., Mastny, T., Erickson, J., Robinson, D., Silge [aut, J., & cre. (2023). tidytext: Text Mining using “dplyr”, “ggplot2”, and Other Tidy Tools (0.4.1) [Computer software]. <https://cran.r-project.org/web/packages/tidytext/index.html>
- Ridha, R. N., Burhanuddin, & Wahyu, B. P. (2017). Entrepreneurship intention in agricultural sector of young generation in Indonesia. *Asia Pacific Journal of Innovation and Entrepreneurship*, 11(1), 76–89. <https://doi.org/10.1108/APJIE-04-2017-022>
- Rigg, J., Salamanca, A., Phongsir, M., & Sripun, M. (2018). More farmers, less farming? Understanding the truncated agrarian transition in Thailand. *World Development*, 107, 327–337. <https://doi.org/10.1016/j.worlddev.2018.03.008>
- Romstad, E., Vatn, A., Roerstad, P. K., & Soeyland, V. D. of E. and S. S. (2000). Multifunctional agriculture. Implications for policy design. 21. <https://agris.fao.org/search/en/providers/122576/records/6472342853aa8c89630220db>
- Rosseel, Y., Jorgensen, T. D., Rockwood, N., Oberski, D., Byrnes, J., Vanbrabant, L., Savalei, V., Merkle, E., Hallquist, M., Rhemtulla, M., Katsikatsou, M., Barendse, M., Scharf, F., & Du, H. (2023). lavaan: Latent Variable Analysis (0.6-16) [Computer software]. <https://cran.r-project.org/web/packages/lavaan/index.html>
- Roy, S. K. (2023). Influencing factors for pursuing agriculture as a career for agriculture undergraduates: A two-stage approach. *Entrepreneurship Education*, 6(2), 169–203. <https://doi.org/10.1007/s41959-023-00096-0>

- Roy, S., Khan, M., & Hossain, s. M. (2016). Determinants of Users' Satisfaction Regarding Mobile Operators in Bangladesh: An Exploratory Factor Analysis Approach on University Students. *European Journal of Business and Management*, 8.
- Sánchez-Fernández, R., & Iniesta-Bonillo, M. Á. (2007). The concept of perceived value: A systematic review of the research. *Marketing Theory*, 7(4), 427–451. <https://doi.org/10.1177/1470593107083165>
- Shenaifi, M. S. (2013). Attitudes of students at College of Food and Agricultural Sciences toward agriculture. *Journal of the Saudi Society of Agricultural Sciences*, 12(2), 117–120. <https://doi.org/10.1016/j.jssas.2012.09.001>
- Sitienei, I., & Morrish, D. (2014). College Students' Knowledge of Sustainable Agriculture and its Implications on the Agricultural Education Curriculum. *NACTA*, 58.
- Suprehatin, & Shidiq, M. R. (2020). Determinants of Agripreneurial Career Intentions: Evidence From Agriculture Students. *Jurnal Manajemen & Agribisnis*, 17(2), Article 2. <https://doi.org/10.17358/jma.17.2.128>
- Sweeney, J. C., & Soutar, G. N. (2001). Consumer perceived value: The development of a multiple item scale. *Journal of Retailing*, 77(2), 203–220. [https://doi.org/10.1016/S0022-4359\(01\)00041-0](https://doi.org/10.1016/S0022-4359(01)00041-0)
- Thephavanh, M., Philp, J. N. M., Nuberg, I., & Denton, M. D. (2023). Exploring demographic influences on perceptions of agricultural entrepreneurship as a career choice among Lao youth. *Development in Practice*, 33(7), 811–824. <https://doi.org/10.1080/09614524.2023.2183831>
- Tiraeyari, N., & Krauss, S. E. (2018a). Predicting youth participation in urban agriculture in Malaysia: Insights from the theory of planned behavior and the functional approach to volunteer motivation. *Agriculture and Human Values*, 35(3), 637–650.
- Tiraeyari, N., & Krauss, S. E. (2018b). Predicting youth participation in urban agriculture in Malaysia: Insights from the theory of planned behavior and the functional approach to volunteer motivation. *Agriculture and Human Values*, 35(3), 637–650.
- Tucker, L. R., & Lewis, C. (1973). A reliability coefficient for maximum likelihood factor analysis. *Psychometrika*, 38(1), 1–10. <https://doi.org/10.1007/BF02291170>
- Velicer, W. F., & Fava, J. L. (1998). Affects of variable and subject sampling on factor pattern recovery. *Psychological Methods*, 3(2), 231–251. <https://doi.org/10.1037/1082-989X.3.2.231>

- Vos, R., & Bellù, L. G. (2019). Chapter 2—Global Trends and Challenges to Food and Agriculture into the 21st Century. In C. Campanhola & S. Pandey (Eds.), *Sustainable Food and Agriculture* (pp. 11–30). Academic Press. <https://doi.org/10.1016/B978-0-12-812134-4.00002-9>
- Wickham, H., Chang, W., Henry, L., Pedersen, T. L., Takahashi, K., Wilke, C., Woo, K., Yutani, H., Dunnington, D., Posit, & PBC. (2023). *ggplot2: Create Elegant Data Visualisations Using the Grammar of Graphics* (3.4.4) [Computer software]. <https://cran.r-project.org/web/packages/ggplot2/index.html>
- Wolf, E. J., Harrington, K. M., Clark, S. L., & Miller, M. W. (2013). Sample Size Requirements for Structural Equation Models: An Evaluation of Power, Bias, and Solution Propriety. *Educational and Psychological Measurement*, 76(6), 913–934. <https://doi.org/10.1177/0013164413495237>
- Www.reg.kmitl.ac.th. (n.d.). Retrieved March 31, 2024, from http://www.reg.kmitl.ac.th/public/statistic_std_faculty_gender_all_show.php
- Zampetakis, L. A., Anagnosti, A., & Rozakis, S. (2013). Understanding entrepreneurial intentions of students in agriculture and related sciences. *Working Papers*, Article 2013–4. <https://ideas.repec.org/p/aua/wpaper/2013-4.html>
- Zarefard, M., & Cho, S. (2017). RELATIONSHIP BETWEEN ENTREPRENEURS' MANAGERIAL COMPETENCIES AND INNOVATIVE START-UP INTENTIONS IN UNIVERSITY STUDENTS: AN IRANIAN CASE.
- Zaremohzzabieh, Z., Krauss, S. E., D'Silva, J. L., Tiraeyari, N., Ismail, I. A., & Dahalan, D. (2022). Towards agriculture as a career: Predicting students' participation in the agricultural sector using an extended model of the theory of planned behavior. *The Journal of Agricultural Education and Extension*, 28(1), 67–92. <https://doi.org/10.1080/1389224X.2021.1910523>
- Zellweger, T., Sieger, P., & Halter, F. (2011). Should I stay or should I go? Career choice intentions of students with family business background. *Journal of Business Venturing*, 26(5), 521–536. <https://doi.org/10.1016/j.jbusvent.2010.04.001>

APPENDICES

A. R codes in data analysis and visualization

The R codes used in the data analysis and visualization are available on the Notion site. The repository can be accessed using the permalink: <https://spotted-rib-91a.notion.site/Proposal-3ce7fdbe80464199a184ee377f86ddb0?pvs=4>

B. Survey questionnaire

The questionnaires were performed using Google Forms. Here is an example template for easier reading: <https://www.surveymonkey.com/mp/sample-survey-questionnaire-templates/>

BIOGRAPHICAL

Name	Thanakorn Charoensuk
Date of birth	12 24 2001
Adress	100/529 Chaiyapruet village 1 khum kiao road 7 Ladkrabang District Bangkok, Thailand
Educational background	<p>2019, graduate highschool from demonstration school of ramkhamhaeng university 2086, Ramkhamhaeng Road, Hua Mak Subdistrict, Bang Kapi District, Bangkok 10240</p> <p>2024, graduated with a bachelor's degree.</p> <p>Agricultural Development Department of Communication Innovation and agricultural development Faculty of Agricultural Technology King Mongkut's Institute of Technology Ladkrabang, KMITL</p>