



**A STUDY OF THE INFLUENCING FACTORS OF USERS'  
WILLINGNESS TO PAY FOR ONLINE EDUCATION  
PLATFORMS**

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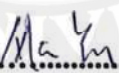
**AN INDEPENDENT STUDY SUBMITTED IN PARTIAL  
FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF  
MASTER OF BUSINESS ADMINISTRATION  
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This Independent Study Has Been Approved as a Partial Fulfillment of the  
Requirements for the Degree of Master of Business Administration

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**Title:** A STUDY OF THE INFLUENCING FACTORS OF USERS' WILLINGNESS TO PAY FOR ONLINE EDUCATION PLATFORMS

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### ABSTRACT

In the era of mobile learning, freemium language education platforms, such as Duolingo, have attracted millions of users worldwide, yet their commercial sustainability depends heavily on users' willingness to pay for premium services. Understanding what drives users to convert from free to paid subscriptions has become a pressing issue for educational technology providers, especially in emerging markets like China. Although prior studies have explored user behavior in online platforms, few have systematically examined how perceived value mediates the impact of cognitive and promotional factors on payment intention.

The purpose of this study was to investigate the influencing factors of Chinese users' willingness to pay for Duolingo, drawing upon Perceived Value Theory, Unified Theory of Acceptance and Use of Technology (UTAUT), and Promotion Theory. The research model incorporated five core constructs: perceived usefulness, perceived ease of use, social influence, discount promotion, and perceived value as a mediating variable.

A quantitative method was adopted using a structured questionnaire to collect empirical data. The survey questionnaire was distributed among active Duolingo users across different provinces in China. A total of 202 valid responses were collected and analyzed using SPSS, employing reliability testing, correlation analysis, regression analysis, and mediation testing via the PROCESS macro.

The results reveal that all four independent variables—perceived usefulness, ease of use, social influence, and discount promotion—have significant positive effects on users' willingness to pay, both directly and indirectly through perceived value. Among them, perceived usefulness and perceived value are the strongest predictors of payment

intention. These findings provide empirical support for a comprehensive framework explaining user payment behavior in freemium learning apps and offer practical implications for improving user conversion strategies in online education platforms.

**Keywords:** Duolingo, willingness to pay, perceived value, promotion, online education, freemium model



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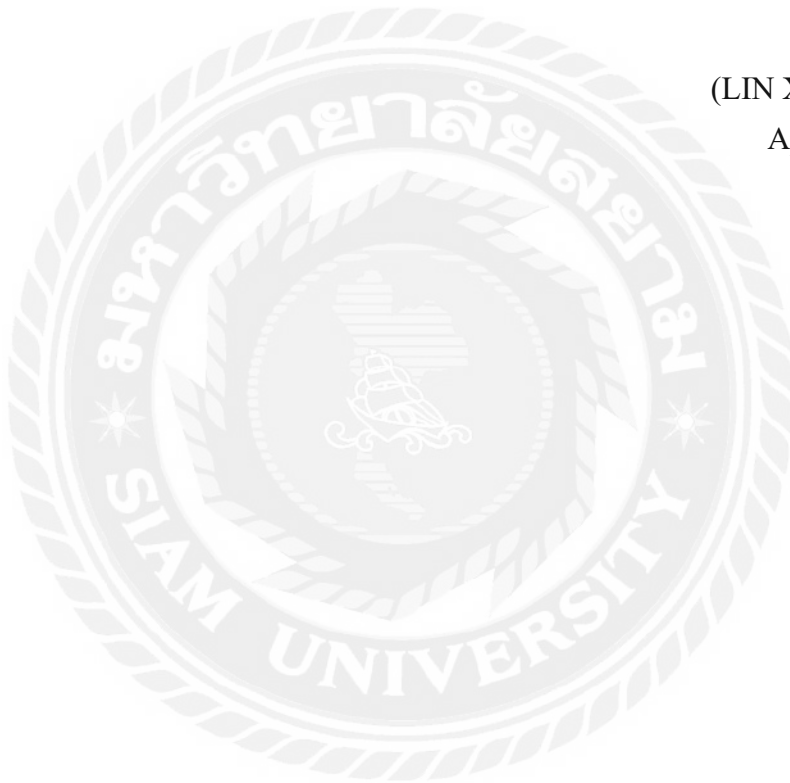
LIN XIAODING

## DECLARATION

I, LIN XIAODING, hereby declare that this Independent Study entitled “A STUDY OF THE INFLUENCING FACTORS OF USERS' WILLINGNESS TO PAY FOR ONLINE EDUCATION PLATFORMS” is an original work and has never been submitted to any academic institution for a degree.

(LIN XIAODING)

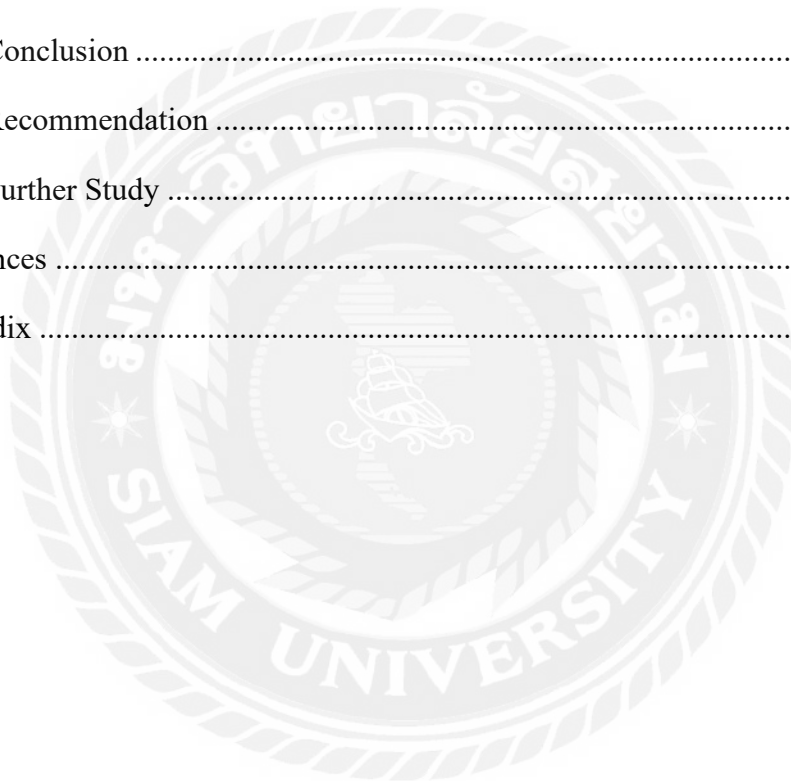
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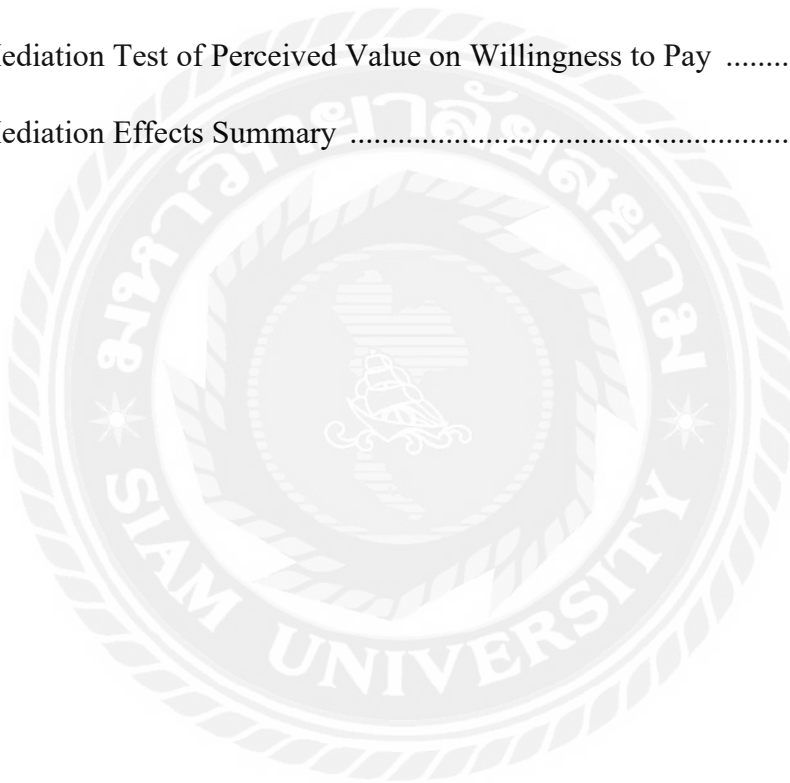
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# Chapter 1 Introduction

## 1.1 Background of the Study

In the digital age, mobile technology and internet accessibility have fundamentally reshaped how people acquire knowledge and skills. The global growth of online education, particularly in the field of language learning, has been fueled by platforms offering flexible, interactive, and self-paced learning experiences. Among them, Duolingo stands out as one of the most widely used freemium-based language learning applications, with over 500 million users globally. Its success is largely attributed to its gamified learning interface, community features, and tiered service model, which combines free basic access with paid premium subscriptions. However, like many other ed-tech companies, Duolingo faces the common challenge of converting a vast user base of free users into paying customers (Hamari et al., 2017).

The rise of freemium models in education has prompted scholars and practitioners to question what truly drives users to pay in contexts where high-quality services are initially available at no cost. While some users readily subscribe to unlock premium features, the majority remain passive consumers of free content. This phenomenon highlights the importance of understanding willingness to pay (WTP), which refers to a user's conscious intent to exchange money for enhanced functionality or service value.

Previous research has offered various theoretical perspectives to explain such behavior. Perceived Value Theory posits that consumers evaluate whether the benefits of a product or service outweigh its costs before making a purchase decision (Zeithaml, 1988). In the context of Duolingo, users may perceive value in terms of language proficiency gain, time saved, motivational features, or convenience. The more positively users perceive these benefits, the higher their likelihood of payment.

At the same time, the Unified Theory of Acceptance and Use of Technology (UTAUT) offers a broader framework for analyzing user adoption behavior. It suggests that factors such as perceived usefulness, perceived ease of use, and social influence significantly affect behavioral intention toward a technology (Venkatesh et al., 2003). These factors are highly relevant in Duolingo's design, which emphasizes intuitive usability, task efficiency, and social features such as leaderboards and discussion forums. Yet, their connection to payment behavior—rather than mere usage—has received relatively limited attention in academic studies.

Moreover, the promotion theory suggests that external marketing stimuli, such as limited-time offers, subscription bundles, or referral incentives, can effectively trigger conversion behaviors, particularly among users who are price-sensitive or hesitant

(Chandon et al., 2000). On freemium platforms, where competition for attention and loyalty is intense, well-designed promotions may serve as tipping points that shift user behavior from passive engagement to active subscription.

While these theories provide valuable insights, there remains a significant research gap in synthesizing them into an integrated model that explains payment behavior in the context of online language learning platforms, particularly in non-Western markets such as China. Chinese users often demonstrate unique patterns of technology adoption, value perception, and responsiveness to discounts due to cultural and economic factors. However, few empirical studies have specifically examined how these factors interact to influence payment intention in China's online learning ecosystem.

In light of this, this study seeks to develop and empirically test a research model that integrates perceived usefulness, ease of use, social influence, and discount promotion as predictors of users' perceived value and willingness to pay, with Duolingo as the focal platform. By focusing on Chinese users, this study aims to generate both theoretical contributions to the literature on technology adoption and freemium economics, and practical insights for platform operators seeking to enhance user monetization.

## **1.2 Questions of the Study**

As highlighted in the background, online language learning platforms such as Duolingo operate within a freemium business model where user conversion from free to paid services is critical to sustainability. However, the psychological and contextual factors that influence this conversion remain complex and multifaceted. This study develops a research model grounded in Perceived Value Theory, the UTAUT model, and Promotion Theory, aiming to explore both the direct effects and the mediating role of perceived value. Specifically, the study seeks to answer the following research questions:

1. Do perceived usefulness, perceived ease of use, social influence, and discount promotion influence perceived value?
2. Do perceived usefulness, perceived ease of use, social influence, discount promotion, and perceived value influence willingness to pay?
3. Does perceived value mediate the effect of perceived usefulness, perceived ease of use, social influence, and discount promotion on willingness to pay?

### **1.3 Objectives of the Study**

Based on the conceptual framework developed from Perceived Value Theory, the UTAUT model, and Promotion Theory, this study aims to examine how users' cognitive evaluations and external incentives influence their willingness to pay for services provided by online education platforms, with Duolingo serving as a representative case.

1. To explore the impact of perceived usefulness on perceived value.
2. To explore the impact of perceived ease of use on perceived value.
3. To explore the impact of social influence on perceived value.
4. To explore the impact of discount promotion on perceived value.
5. To explore the impact of perceived usefulness on willingness to pay.
6. To explore the impact of perceived ease of use on willingness to pay.
7. To explore the impact of social influence on willingness to pay.
8. To explore the impact of discount promotion on willingness to pay.
9. To examine the effect of perceived value on willingness to pay.
10. To investigate the mediating role of perceived value in the relationship between perceived usefulness and willingness to pay.
11. To investigate the mediating role of perceived value in the relationship between perceived ease of use and willingness to pay.
12. To investigate the mediating role of perceived value in the relationship between social influence and willingness to pay.
13. To investigate the mediating role of perceived value in the relationship between discount promotion and willingness to pay.

### **1.4 Scope of the Study**

This study focuses specifically on the behavioral intentions of Chinese users of Duolingo, an online language learning platform that offers both free and paid services. The research examines how users' perceptions of usefulness, ease of use, social influence, and discount promotion influence their perceived value of the platform, and ultimately, their willingness to pay for premium content. The data were collected through an online questionnaire targeting users across multiple provinces in China.

This study focuses on investigating the key factors that influence users' willingness to pay for online language learning services, using Duolingo as the research context. The scope of the study is defined by five main constructs derived from established theoretical models, namely: Perceived Usefulness, Perceived Ease of Use, Social influence, Discount Promotion, Perceived Value. The dependent variable is

Willingness to Pay, representing users' intention to subscribe to Duolingo's premium services.

## **1.5 Significance of the Study**

This study is significant for both theoretical and practical reasons. Theoretically, it contributes to the literature by integrating Perceived Value Theory, UTAUT, and Promotion Theory into a unified model that explains payment behavior in freemium-based educational apps. While previous studies have often focused on technology adoption or user satisfaction, few have explicitly addressed the transition from free usage to paid subscription, especially in the context of language learning platforms and the Chinese user base.

Practically, the study offers actionable insights for educational technology companies, product managers, and marketers seeking to enhance user monetization strategies. By identifying the key psychological and contextual factors that drive willingness to pay, the findings can inform platform design, promotional campaigns, and value communication. For Duolingo and similar apps, understanding how perceived usefulness, ease of use, community engagement, and promotions shape user value perception is essential for improving conversion rates and sustaining long-term growth in highly competitive digital markets.

## **1.6 Definition of Key Terms**

Perceived usefulness refers to the degree to which a user believes that using an online education platform will enhance their learning efficiency or academic performance. This concept originates from the Technology Acceptance Model (TAM), where it plays a key role in influencing users' behavioral intentions.

Perceived ease of use is defined as the degree to which a user believes that using an online education app is free of effort. The easier a system is to use, the more likely users are to adopt it and engage with its functions.

Social influence refers to the emotional tone and social climate perceived by users within the online education platform, including interaction, user participation, social support, and a sense of belonging. A positive atmosphere can enhance user engagement and satisfaction.

Discount promotion refers to the pricing strategy where users are offered reduced prices, limited-time discounts, or coupon-based incentives when purchasing educational services or content. It is one of the most commonly used tactics to stimulate users' willingness to pay.

Perceived value is defined as the overall assessment made by users based on what they receive (e.g., content quality, platform service) versus what they give up (e.g., money, time, effort). In this study, perceived value functions as a mediating variable linking external stimuli (e.g., promotion, usability) to payment intention.

Willingness to pay refers to a user's psychological inclination or intention to spend money in exchange for paid educational content or services. It reflects both the user's internal value judgment and external behavioral motivation.



## **Chapter 2 Literature Review**

### **2.1 Online Education App**

#### **2.1.1 The Concept of Online Education**

With the development of technology, online education has become an emerging form of learning. It is not simply a kind of distance education, but rather a strategic, innovative model that meets learners' personalized needs. Virtual education refers to providing learners with structured but non-compulsory and flexible educational experiences through the internet over a specific time period.

Online education can be conducted on any device and supports interactive, multi-directional teaching and learning. The flexibility of online education allows learners to study anytime and anywhere. Atiaja et al. (2016) explored the development of MOOCs and pointed out that the promotion of online courses significantly increased learners' enthusiasm, and the dropout rate declined with the advancement of mobile technology. Misrah et al. (2018) suggested that MOOCs could be evaluated from three dimensions: course content, teaching method, and learning outcomes. The use of different methods can result in varied educational effectiveness. Therefore, designing appropriate online course systems tailored to specific situations can enhance learning interest and interactivity.

#### **2.1.2 Online Education Apps**

Online education apps refer to software developed by third-party providers using internet and mobile communication technologies to facilitate online learning. These apps typically aggregate various educational resources and support learning activities through mobile platforms. In China, major platforms include Tencent Classroom, Netease Open Courses, Baidu Cloud Disk, and Huawei Cloud. Internationally, Google Talk and Kingdom Talk are commonly used.

Rothkrantz (2017) found that integrating MOOCs with social media facilitated the creation of online learning groups, which improved students' engagement and performance. Online education apps enable learners to interact anytime, anywhere, without needing to attend physical classes. They also support features such as Q&A, simulated exams, and repetition of specialized knowledge.

This study defines online education apps as applications installed on smartphones or mobile devices that integrate teaching resources, track learning data and performance, and support full learning process management. These apps serve as secondary systems to improve teaching effectiveness.



### **2.1.3 Research on Willingness to Pay for Online Education**

With the rapid expansion of the online education market and technological advancement, platforms are shifting away from free content models. Users are increasingly willing to pay for knowledge services, attracting attention from academic circles. Recent studies have focused on industry development, product homogenization, and business models. Among these, users' willingness to pay for online education has become a key research area.

Wang (2013) pointed out that "free" has become a standard for internet users in China. Business models must now transition to paid services through user conversion strategies. Many platforms use free or low-cost services to attract users, but maintaining revenue requires user monetization strategies. However, literature directly addressing willingness to pay remains scarce. Existing research is fragmented and mainly discusses continued usage intention, knowledge payment, and technology acceptance models (Wang, 2018; Guo & Zhou, 2022).

This study attempts to fill that gap by defining online education apps as mobile platforms that provide value-added learning experiences. It focuses on factors influencing users' willingness to pay and constructs a research model informed by prior studies.

## **2.2 Willingness to Pay**

### **2.2.1 Concept of Willingness to Pay for Knowledge**

According to the behavioral intention theory, cognition, attitude, intention, and behavior are distinct variables. When users perceive the value of a product or service, they develop purchase intentions—this is the essence of willingness to pay. Initially, internet platforms offered free information. Over time, users became more aware of the value of high-quality content.

As information has become a scarce and valuable commodity in the era of knowledge sharing, platforms have launched paid services to meet users' demand for convenience and value. Willingness to pay for knowledge reflects users' subjective readiness to pay for services like courses, resources, and tools. This is closely tied to their perception of value and platform experience.

### **2.2.2 Influencing Factors of Knowledge Payment Intention**

Although theoretical research on willingness to pay is still limited, existing models have extended from perceived value and technology acceptance theory. For instance, Wang (2018) identified seven influencing factors, including performance expectancy, social influence, payment scenarios, personalized needs, information satisfaction, and

perceived usefulness. Guo and Zhou (2022) emphasized perceived value dimensions, such as product, service, and system value.

### **2.2.3 Research on User Payment Intention**

Liu (2016) used the VAM model to explore factors influencing willingness to pay in online education. The model includes variables like emotional value, perceived utility, and cost. Liu et al. (2020) introduced the value-expectancy theory and self-determination theory into their study, finding that course quality, trial experience, and perceived price significantly affected payment intention.

Han and Wu (2022) found that course content, platform experience, and pricing impact user willingness to pay. Morwitz and Armstrong (2000) noted that users' purchase intentions can predict behavior. Bruce and Zeithaml (1988) added that internal emotions and external environments jointly determine purchasing behavior.

Ajzen (1991) defined willingness to pay as a planned behavior process. Hu and Yun (2009) emphasized that trust and satisfaction affect user payment decisions. Zhang et al. (2018) regarded payment as a conscious intention formed through emotional connection and identity in virtual communities.

Therefore, this study explores willingness to pay using perceived value as the theoretical foundation and identifies influencing factors applicable to online education apps.

## **2.3 Perceived Value**

Perceived value refers to the evaluation and feelings a consumer has during the process of using a product or enjoying a service. It involves comparisons between what is gained and what is given up. This type of evaluation is not only about product features but also reflects the customer's overall judgment of the value generated. Especially in consumer purchase behavior, perceived value serves as an important predictive indicator: the higher the value customers feel they receive from a product or service, the more likely they are to make a purchase (Zeithaml, 1988).

Currently, research on perceived value is not limited to traditional marketing, but also extends to consumer behavior in social media interaction, app usage, and tourism. In addition, users' interactions with products, services, and technology, as well as their subjective experience, are important in evaluating perceived value (Woodruff, 1997).

In the domain of perceived value, Dong et al. (2019) incorporated "perceived benefit" and "perceived sacrifice" into the perceived value framework and confirmed that perceived sacrifice negatively impacts perceived value. Singh et al. (2021) studied sustained user behavior in live-streaming platforms, finding that perceived innovation,

risk, and enjoyment directly influenced user engagement. Ultimately, it was concluded that among the factors influencing continued use behavior, utilitarian value (e.g., convenience, effectiveness) was the most important, followed by hedonic value (e.g., enjoyment). Therefore, streaming platforms should differentiate perceived value types and promote personalized app designs to improve user retention.

In studies linking perceived value to purchase intention, Markun et al. (2019) used perceived value and the TAM model to investigate users in Indonesia, Malaysia, and Singapore, revealing cultural and platform-based differences in online shopping behavior. Users in Singapore were more sensitive to service quality and usability, which affected their intention to buy.

Chen and Yang (2003) constructed a behavior model based on perceived customer value, identifying both positive and negative influences on consumers' willingness to pay. Fang (2018) explored the relationship between value cognition and willingness to pay in knowledge communities and verified that user trust and recognition of value positively impacted their behavior.

An (2020) extended perceived value theory to video platforms, showing that users' perception of VIP memberships and ad-free experiences significantly affected their purchase behavior. Furthermore, those with higher perceived value had stronger willingness to pay (Liu & Zhang, 2020).

## **2.4 UTAUT Model**

Many scholars, when applying the UTAUT model, do not limit themselves to the original four constructs (performance expectancy, effort expectancy, social influence, and facilitating conditions). Instead, they often adapt the model by incorporating variables relevant to their specific research contexts.

For example, Ye (2014) applied the UTAUT model to analyze college students' online learning behavior and found that performance expectancy significantly influences students' online learning engagement. Gu (2015) focused on college students using the "Haixuan App" and discovered that beyond traditional constructs, variables like perceived interest, perceived risk, and perceived cost also influenced user behavior.

Li (2016) conducted a study among students in Jiangxi Province, examining how they make product decisions on mobile platforms. The findings showed that perceived risk, price sensitivity, and perceived value significantly influenced purchasing intentions.

Alba Garcia-Milon et al. (2021) used the UTAUT model to examine changes in tourist shopping behavior due to COVID-19. Their study showed that tourists'

willingness to use smartphones for shopping was influenced by social influence, performance expectancy, and emotional arousal, with significant variance between pre- and post-pandemic user groups.

Ren (2019) applied UTAUT to analyze college students' willingness to pay for online education. The results indicated that convenience of course content and perceived social influence were key drivers for their willingness to pay. The study emphasized that quality of service and ease of interaction were essential in improving students' satisfaction and motivation.

From the above literature, it is evident that most research on users' willingness to pay for online education is based on the extended models of UTAUT and TAM. Researchers typically introduce new moderating or mediating variables to build customized models for their contexts. Commonly adapted constructs include social influence (e.g., peer pressure or community recognition), facilitating conditions (e.g., availability of resources and infrastructure), and personal factors (e.g., perceived value and interest).

This study, based on existing literature and grounded in the UTAUT model, integrates variables including perceived interest, perceived risk, and perceived value (from TAM and perceived value theory), social influence (from UTAUT), and facilitating conditions to construct a research model to explore users' willingness to pay for online education services.

## **2.5 Promotion Theory**

### **(1) Definition of Promotion**

Promotion is one of the most widely used marketing strategies in modern enterprises. Chandon et al. (2000) believed that promotions reduce consumers' actual payment or perceived cost when enjoying a product or service, thereby increasing purchase behavior. A successful promotion allows customers to feel they are gaining additional benefits, which may trigger repeated purchases or prevent them from abandoning a buying decision.

Advertising promotions are known for three characteristics: (1) short-term effect; (2) customer-centric goals; (3) quick feedback through user incentives. In this study, promotion is defined as a method used by businesses to stimulate consumer willingness to pay, through direct or indirect financial or non-financial incentives.

### **(2) Types and Applications of Promotion**

With the evolution of commerce, various promotional strategies have emerged. According to Zhang & Guo (2013), promotional strategies such as cash discounts, free

gifts, coupons, loyalty points, and group deals are used to attract customers and stimulate purchase behavior.

#### ① Gift Promotion

Gift promotion refers to giving customers added products or services beyond their purchase. This enhances product value and perceived fairness of the transaction. However, excessive use of gifts may weaken the sense of payment necessity and reduce purchase motivation. If the gifts lack attractiveness, the promotion may even be counterproductive.

Businesses need to carefully plan gift strategies, select appropriate items, and consider promotion costs and inventory balance. Otherwise, over-reliance on gifts can cause inventory pressure and profit loss.

#### ② Discount Promotion

Discount promotion refers to offering price reductions or favorable pricing to reduce the buyer's financial burden. This is highly effective among price-sensitive customers (Alvares, 2005). Price-based promotions can attract new customers and encourage brand switching (Bram, 2018), and are also useful in retaining existing customers.

Compared with gift promotion, discount promotion directly reduces payment and is more practical. However, in online shopping, consumers may face information asymmetry, leading to trust issues in valuing the product. Palazon & Delgado (2009) found that discounts are more effective for high-involvement products, while gifts may be better for low-involvement ones.

Hence, choosing the most suitable promotional method based on product attributes and user perceived value is key to ensuring positive promotional outcomes.

#### (3) Perceived Promotional Benefit

Regardless of whether the product is knowledge-based or general, a user's willingness to pay is based on perceived value. According to Monroe (1973), only when consumers perceive value and perceived promotional benefit will they be inclined to make a purchase.

Many scholars have emphasized this dimension of added benefit—such as information gained, time saved, or emotional satisfaction. Zeithaml (1988) described perceived value as an overall assessment of the usefulness of a product, based on what is received and what is given. Kevin (1993) further divided perceived value into hedonic and utilitarian value.

Chandon et al. (2000) concluded that perceived promotional benefit includes: Economic gain (e.g., discount or free product), Product quality impression, Convenience, Enjoyment, Exploration experience.

This study defines perceived promotional benefit as the sum of perceived emotional and rational value obtained by users during promotional activities. This serves as a foundation for analyzing user responses in promotional contexts.

## 2.6 Conceptual Framework

This study, based on Perceived Value Theory, UTAUT, and Promotion Theory, proposes four core influencing factors and one mediating variable to examine their impact on users' willingness to pay. The model is structured around four dimensions and includes eight influencing variables that affect users' willingness to pay. These variables include perceived usefulness, perceived ease of use, social influence, and discount promotion, with perceived value serving as a mediating variable.

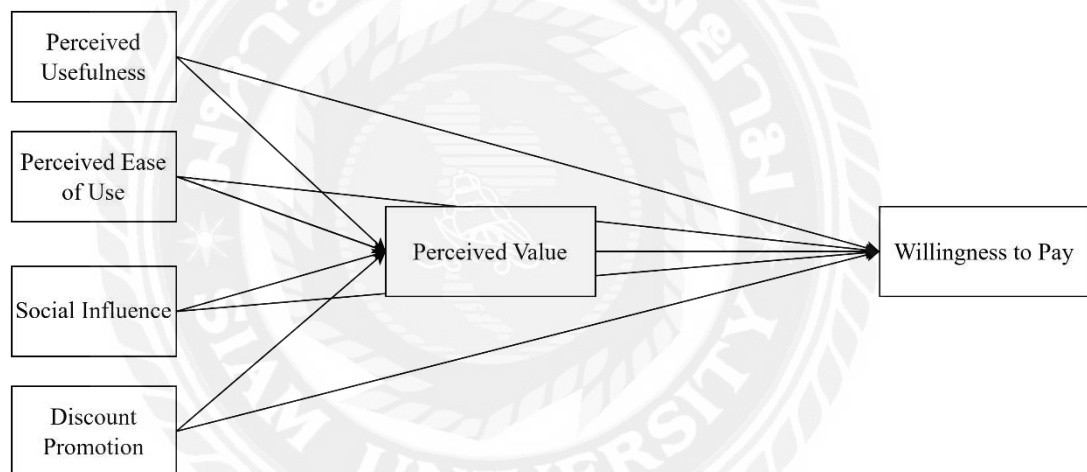


Figure 2.1 Conceptual Framework

## Chapter 3 Research Methodology

### 3.1 Research Design

This study adopted a quantitative research to explore the factors influencing users' willingness to pay (WTP) for online educational services, using Duolingo as a case study. The research framework is based on the integration of Perceived Value Theory, Unified Theory of Acceptance and Use of Technology (UTAUT), and Promotion Theory, focusing on the relationship between users' cognitive perceptions, external influences, and their actual payment intention. The conceptual model includes six main constructs: perceived usefulness, perceived ease of use, social influence, discount promotion, perceived value (mediating variable), and willingness to pay (dependent variable). This model assumes that users' functional and social perceptions directly or indirectly influence their willingness to pay through the formation of perceived value. All variables in the model are measured using multiple-item Likert scales adapted from validated instruments in previous literature. Each construct is represented by three to six items, measured on a 5-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree).

### 3.2 Questionnaire Design

Table 3.1 Variable Scales

Variable	Indicator	Question Item	Source
Perceived Value (PV)	PV1	Compared to the money spent, I think the information I gain from CoolMed is valuable.	Markun (2019), Venkatesh (2003)
	PV2	Compared to the time spent, I think the information I gain from CoolMed is valuable.	
	PV3	Paying for CoolMed saves me time.	
	PV4	Overall, I think it is worth paying for CoolMed.	
Perceived Usefulness (PU)	PU1	I think CoolMed improves my learning efficiency.	Dong et al. (2019), Guo et al. (2022)
	PU2	I think CoolMed enhances my learning outcomes.	
	PU3	I think CoolMed meets my learning needs.	
	PU4	Overall, compared to free content, CoolMed helps my learning more.	
	PEOU1	I find CoolMed easy to use.	Dong et al. (2019), Wang et
	PEOU2	I find CoolMed runs smoothly.	

Perceived Ease of Use (PEOU)	PEOU3	Overall, I find CoolMed easy to operate.	al. (2018), Venkatesh (2003)
Social Influence (SI)	SI1	I noticed many people in the community discussing CoolMed.	Wu (2021), Zhao (2018), Li (2017)
	SI2	I noticed many people in the community purchasing CoolMed.	
	SI3	I've been part of this community for a long time (over 6 months).	
	SI4	I frequently interact with other members in the community.	
	SI5	I enjoy helping others in the community.	
Discount Promotion (DP)	DP1	When there's a discount, I'm more likely to consider buying the product.	Wang (2018), Zhang & Guo (2013)
	DP2	When there's a big price cut, I feel it's a good deal.	
	DP3	Compared to others, I'm more influenced by promotions.	
	DP4	When discounts are offered (e.g., coupons, flash sales), I'm more likely to buy.	
Willingness to Pay (WTP)	WTP1	I'm willing to pay for CoolMed.	Gu (2015), Wang & Zhang (2019)
	WTP2	I'm willing to recommend CoolMed's paid content to others.	
	WTP3	I will pay when I find the app meets my personal learning needs.	

### 3.3 Hypothesis

H1: Perceived usefulness has a positive effect on perceived value.

H2: Perceived ease of use has a positive effect on perceived value.

H3: Social influence has a positive effect on perceived value.

H4: Discount promotion has a positive effect on perceived value.

H5: Perceived usefulness has a positive effect on willingness to pay.

H6: Perceived ease of use has a positive effect on willingness to pay.

H7: Social influence has a positive effect on willingness to pay.

H8: Discount promotion has a positive effect on willingness to pay.



H9: Perceived value positively influences users' willingness to pay.

H10: Perceived value mediates the relationship between perceived usefulness and willingness to pay.

H11: Perceived value mediates the relationship between perceived ease of use and willingness to pay.

H12: Perceived value mediates the relationship between social influence and willingness to pay.

H13: Perceived value mediates the relationship between discount promotion and willingness to pay.

### **3.4 Sample and Data Collection**

The target population of this study consisted of users of Duolingo, an online language learning platform that provides both free and paid services. Since the research focused on understanding users' willingness to pay, the sample was limited to individuals who have used Duolingo's mobile or web-based application within the past six months. This ensured that all respondents had relevant and recent user experience.

The questionnaire was distributed over a one-month period through various digital channels including language learning communities, educational social media groups (e.g., WeChat, Telegram, Reddit), and university forums. A total of 242 responses were collected, of which 202 were deemed valid after data cleaning, yielding an effective response rate of 83.5%. Invalid responses were removed based on criteria such as incomplete answers, inconsistent logic, and unreasonably short response time (e.g., less than 60 seconds). The final sample includes a diverse user base in terms of gender, age, education level, and user purpose, with a majority consisting of university students and early-career professionals.

### **3.5 Data Analysis**

To analyze the collected data, this study employed the Statistical Package for the Social Sciences (SPSS) software. The analytical process included several steps to ensure the reliability and validity of the research model.

First, descriptive statistics were used to profile the demographic characteristics of the respondents, including gender, age, education, and occupation and region. Following that, reliability analysis was conducted using Cronbach's alpha to assess the internal consistency of the measurement items for each construct.

Next, validity analysis was performed, including both content validity (based on established scales and expert revision) and construct validity (via KMO and Bartlett's

test). The results confirmed that the scale was suitable for factor analysis. Correlation analysis was then conducted to test the linear relationships among variables.

Subsequently, regression analysis was used to identify the strength and direction of influence of each predictor on willingness to pay. Group regression analysis further examined differences in influencing factors among different user groups. Finally, the mediation effect of perceived value was tested using the PROCESS macro (Model 4).

Through this comprehensive data analysis process, the study verified the robustness of the proposed theoretical model and provided empirical support for the research hypotheses.

### 3.6 Reliability and Validity Analysis of the Scale

#### 3.6.1 Reliability Analysis

Reliability analysis is primarily used to test and confirm the internal consistency of a scale. It evaluates the measurement indicators and calculation methods used to determine the reliability and stability of the questionnaire. It is a form of quantitative analysis.

Table 3.2 Reliability Analysis

Variable	Number of Items	Cronbach's Alpha
Perceived Value (PV)	4	0.922
Perceived Usefulness (PU)	4	0.954
Perceived Ease of Use (PEOU)	3	0.906
Social Influence (SI)	6	0.904
Discount Promotion (DP)	4	0.932
Willingness to Pay (WTP)	3	0.898

This study analyzed the reliability of each construct, including perceived value, perceived usefulness, perceived ease of use, social influence, discount promotion, and willingness to pay. The results show that all dimensions have Cronbach's  $\alpha$  coefficients above 0.8, indicating a high level of internal consistency and reliability. Therefore, the subsequent analytical results based on these measurements are considered credible.

#### 3.6.2 Validity Analysis

Validity analysis examines the extent to which the scale measures what it is intended to measure. It reflects the effectiveness of a questionnaire in capturing the target concept. Validity can be assessed from two main aspects: content validity and construct validity.

This study adopted measurement items from established domestic and international scales and made appropriate adjustments based on the research context. As such, the content validity of the scale is considered high.

Table 3.3 Validity Analysis

KMO Value	0.944
Bartlett's Test of Sphericity	8293.713

The KMO value of 0.944 and the significant result of Bartlett's test ( $\chi^2 = 8293.713$ ) suggest that the data is highly suitable for factor analysis, and the scale demonstrates strong construct validity.



## Chapter 4 Findings and Discussion

### 4.1 Findings

Table 4.1 Descriptive Statistics of Users' Basic Information

Variable	Category	Frequency	Percentage (%)
Gender	Male	93	46.0%
	Female	109	54.0%
Age	Under 18	2	1.0%
	18–22	150	74.3%
	23–25	28	13.9%
	26–30	17	8.4%
	Over 30	5	2.5%
Education	Secondary/Vocational	17	8.4%
	Undergraduate (Year 1–2)	51	25.2%
	Undergraduate (Year 3–4)	70	34.7%
	Undergraduate (Year 5)	21	10.4%
	Master's Degree	21	10.4%
	Ph.D.	1	0.5%
	Employed	21	10.4%
Occupation	Language/Translation Student	38	18.8%
	Other University Students	130	64.4%
	Teachers	5	2.5%
	Corporate Employees	11	5.4%
	Freelancers	7	3.5%
	Others	11	5.4%
Region	Guangdong Province	21	10.4%
	Shandong Province	17	8.4%
	Sichuan Province	16	7.9%
	Jiangsu Province	14	6.9%
	Henan Province	13	6.4%

	Guangxi Province	11	5.4%
	Beijing / Shanghai	9	4.5%
	Zhejiang Province	9	4.5%
	Hunan Province	7	3.5%
	Other provinces (combined)	85	42.1%

A total of 202 valid responses were obtained for the final analysis. In terms of gender distribution, 54.0% of respondents were female and 46.0% male, indicating a relatively balanced sample. Regarding age, the majority (74.3%) fell within the 18–22 age group, reflecting a high proportion of university students among Duolingo users. Another 13.9% were aged 23–25, while 8.4% were between 26–30.

Educational background data show that 70.3% of respondents were undergraduates (Years 1–5), while 10.4% held a master’s degree, and a further 10.4% were working professionals. The occupation profile confirmed that over 64% were university students, and nearly 19% specifically identified as language or translation majors, matching Duolingo’s primary user base.

In terms of regional distribution, respondents were widely spread across more than 15 provinces in China, with relatively large representation from Guangdong, Shandong, Sichuan, and Jiangsu provinces. Users from first-tier cities such as Beijing and Shanghai also participated, alongside smaller but notable samples from Guangxi, Henan, and Zhejiang. This indicates that the sample has sufficient geographical diversity and reflects the broad user base of Duolingo in China.

## 4.2. Correlation Analysis

Correlation analysis is a method used to determine the direction and strength of the relationship between research variables. The direction and magnitude of the correlation are primarily determined by correlation coefficients and significance levels. If the correlation coefficient is positive and statistically significant, the variables are positively correlated. If the coefficient is negative and statistically significant, the variables are negatively correlated. However, correlation does not imply causation.

In this study, SPSS software was used to calculate the mean values of perceived value, perceived usefulness, perceived ease of use, social influence, promotion, and willingness to pay, followed by correlation analysis. The results are shown in Table 4.2.

Table 4.2 Correlation Analysis

Variable	PV	PU	PEOU	SI	DP	WTP
PV	1	0.845	0.784	0.562	0.563	0.762

PU		1	0.763	0.591	0.581	0.768
PEOU			1	0.518	0.603	0.716
SI				1	0.466	0.663
DP					1	0.621
WTP						1
Note: All correlations are significant at $p < 0.001$ .						

From Table 4.2, we observe that perceived value, perceived usefulness, perceived ease of use, social influence, discount promotion, and willingness to pay are all significantly correlated. The correlation coefficients are below the multicollinearity threshold of 0.90, suggesting no multicollinearity risk. Therefore, the selected variables are scientifically and theoretically sound, supporting subsequent empirical analysis.

### 4.3 Path Analysis of the Model

This study adopted regression methods to process and test the data. The regression results for willingness to pay are shown in Table 4.3.

Table 4.3 Regression Analysis of Willingness to Pay

Variable	Model 1	Model 2
Perceived Usefulness	0.224**	0.350***
Perceived Ease of Use	0.138*	0.209**
Perceived Value	0.229***	
Social Influence	0.115*	0.125*
Discount Promotion	0.177***	0.183***
R <sup>2</sup>	0.709	0.697
Adjusted R <sup>2</sup>	0.700	0.689

The regression results show that the R<sup>2</sup> of Model 1 is 0.709 and the adjusted R<sup>2</sup> is 0.700; the R<sup>2</sup> of Model 2 is 0.697 and the adjusted R<sup>2</sup> is 0.689. This indicates that the models explain the variance in willingness to pay quite well.

The regression coefficients show that perceived usefulness, perceived ease of use, perceived value, social influence, and discount promotion all have significant positive impacts on willingness to pay ( $p < 0.05$ ). Among them, perceived usefulness and perceived value have particularly strong effects, indicating these five variables are critical predictors.

Using the PROCESS macro in SPSS, perceived value was set as the mediator, and willingness to pay as the dependent variable. The analysis tested the mediating effects of perceived value between perceived usefulness, ease of use, social influence, and promotion on willingness to pay.

Table 4.4 Mediation Test of Perceived Value on Willingness to Pay

Variable	t	p
Perceived Usefulness	5.3913	0.0000
Perceived Ease of Use	4.3353	0.0000
Social Influence	5.072	0.0000
Discount Promotion	5.9859	0.0000

Table 4.5 Mediation Effects Summary

Variable	Effect	BootSE	BootLLCI	BootULCI
Perceived Usefulness	0.329	0.0801	0.1727	0.4943
Perceived Ease of Use	0.4288	0.0787	0.2967	0.5902
Social Influence	0.3446	0.0542	0.2396	0.4465
Discount Promotion	0.2831	0.0499	0.1881	0.3849

All four variables (PU, PEOU, SI, DP) have significant direct effects on willingness to pay ( $p < 0.01$ ). Perceived value significantly mediates the relationship between each predictor and willingness to pay. The 95% confidence intervals for the mediating effects do not include zero, indicating that perceived value has a robust mediating role.

#### 4.4 Discussion

Based on the analysis of influencing factors of willingness to pay on the Duolingo education platform, perceived value, perceived usefulness, perceived ease of use, promotion, and social influence all have significant positive effects on users' willingness to pay. The conclusions are as follows: Users' perceived usefulness, ease of use, and perceived value positively influence willingness to pay. Social marketing and discount-based promotion have significant positive effects on willingness to pay. Perceived value plays a mediating role between perceived usefulness, ease of use, social influence, and promotion in influencing willingness to pay.

## **Chapter 5 Conclusion and Recommendation**

### **5.1 Conclusion**

This study took the popular online language learning platform Duolingo as a case example to investigate the factors influencing users' willingness to pay (WTP) for paid content. Drawing upon Perceived Value Theory, Unified Theory of Acceptance and Use of Technology (UTAUT), and Promotion Theory, this study constructed a research model with five core variables: perceived usefulness, perceived ease of use, social influence, discount promotion, and perceived value (as a mediating factor).

Through questionnaire-based data collection and empirical analysis using SPSS, the following conclusions were reached:

Perceived usefulness, perceived ease of use, and perceived value were all found to have a significant positive impact on Duolingo users' willingness to pay. Users are more inclined to pay for premium content when they perceive that Duolingo's paid features (e.g., advanced grammar exercises, personalized learning paths, offline access) are beneficial, easy to use, and provide clear added value compared to the free version.

Social influence and discount promotion also positively affect payment intention. When users observe their peers actively participating in Duolingo discussions, completing streaks, or purchasing Super Duolingo, they are more likely to follow suit. Meanwhile, time-limited discounts, seasonal offers, and gamified promotions (e.g., extra XP boosts for subscribers) increase users' likelihood of converting to paid plans.

Perceived value plays a critical mediating role, serving as a cognitive bridge between external or functional factors and the final payment decision. The results confirm that perceived value significantly mediates the effects of perceived usefulness, ease of use, social influence, and discount promotion on willingness to pay.

The proposed model demonstrates high explanatory power (adjusted  $R^2 = 0.700$ ), indicating that the five examined factors scientifically and systematically account for Duolingo users' willingness to pay. Among them, perceived usefulness and perceived value are the strongest direct predictors, while social influence and promotion enhance willingness to pay indirectly through value perception.

In summary, Duolingo users' willingness to pay is not determined by a single dimension but emerges from the combined effect of product quality, usability, community engagement, and promotional strategies. The perceived value of paid content is the key psychological mechanism that transforms functional or external triggers into actual purchasing intentions.



Therefore, to increase user conversion, Duolingo and similar platforms should focus on continuously enhancing learning efficiency, user experience, social interaction, and targeted promotions, thereby improving users' perceived value and ultimately driving sustained growth of paid subscriptions.

## **5.2 Recommendation**

Based on the findings of this study, several practical recommendations can be offered to Duolingo and similar online education platforms aiming to enhance users' willingness to pay. First, it is essential to strengthen the perceived functional value of paid features. This includes communicating the benefits of personalized learning paths, offline access, grammar tips, and progress tracking in a way that highlights their impact on learning efficiency and long-term retention. At the same time, platforms should continue refining the user interface and optimizing the learning flow to reduce operational complexity. A more intuitive and user-friendly experience will help users perceive the platform as easy to use, which directly contributes to their payment intention.

Furthermore, leveraging social influence can be a powerful strategy. Encouraging community interaction—through leaderboards, streak competitions, peer sharing, or public acknowledgment of user achievements—can create a sense of belonging and motivate users to align with group behavior, including payment. Promotional strategies such as limited-time discounts, gamified subscription rewards, or loyalty-based incentives should be carefully designed and regularly updated to maintain urgency and freshness. Importantly, marketing communication should focus not just on features but on the overall value proposition—framing paid plans as worthwhile investments in personal growth and language mastery. By aligning platform design, social strategies, and promotion with the psychological drivers of perceived value, Duolingo can more effectively convert free users into paying subscribers.

## **5.3 Further Study**

Although this study contributes to understanding the key factors influencing Duolingo users' willingness to pay, there are several areas that future research could explore to deepen and broaden these insights. One important direction is to expand the sample population across different countries and cultural backgrounds, as users' value perceptions, price sensitivity, and social conformity may vary significantly by region. Cross-cultural comparison would allow researchers to identify global versus local patterns in user behavior.

Additionally, future studies could adopt a longitudinal design to track user behavior over time. Observing how free users develop trust, satisfaction, or habitual use before eventually choosing to pay would provide more robust causal insights than the cross-sectional data used here. Researchers may also consider enriching the current model by integrating psychological constructs such as intrinsic motivation, learning anxiety, or gamification engagement, which are particularly relevant in educational technology contexts. Beyond Duolingo, comparative studies across different app categories—such as general education apps, MOOC platforms, or professional training services—would help test the generalizability of this model. Lastly, complementing quantitative analysis with qualitative methods like interviews or focus groups could offer more nuanced interpretations of user behavior and value formation, thus providing a richer foundation for future application and theory development.



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## Appendix

### Section 1: Basic Information

Please answer the following demographic questions:

1. **Gender**

☐ Male    ☐ Female    ☐ Prefer not to say

2. **Age**

☐ Under 18    ☐ 18–22    ☐ 23–25    ☐ 26–30    ☐ Over 30

3. **Highest Education Level**

☐ Secondary/Vocational

☐ Undergraduate (Year 1–2)

☐ Undergraduate (Year 3–5)

☐ Master's Degree

☐ Ph.D.

☐ Other: \_\_\_\_\_

4. **Occupation**

☐ Language/Translation Student

☐ Other University Student

☐ Teacher

☐ Office Employee

☐ Freelancer

☐ Other: \_\_\_\_\_

5. **Province of Residence (in China)**

☐ Guangdong    ☐ Beijing    ☐ Shandong    ☐ Jiangsu    ☐ Henan

☐ Sichuan    ☐ Guangxi    ☐ Zhejiang    ☐ Hunan    ☐ Other: \_\_\_\_\_

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### Section 2: Main Questionnaire Items

Please rate the following statements on a scale of 1 to 5:

(1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree)

**A. Perceived Usefulness (PU)**

No.	Statement	Rating
PU1	Using Duolingo helps me learn languages more efficiently.	1 2 3 4 5
PU2	Duolingo improves my language learning performance.	1 2 3 4 5
PU3	Duolingo helps me meet my personal learning needs.	1 2 3 4 5

No.	Statement	Rating
PU4	Compared with free learning methods, Duolingo provides more value.	1 2 3 4 5

#### **B. Perceived Ease of Use (PEOU)**

No.	Statement	Rating
PEOU1	Duolingo is easy to operate.	1 2 3 4 5
PEOU2	I find it easy to navigate and use Duolingo's features.	1 2 3 4 5
PEOU3	Overall, I think Duolingo is user-friendly.	1 2 3 4 5

#### **C. Social Influence (SI)**

No.	Statement	Rating
SI1	I often see others around me using or discussing Duolingo.	1 2 3 4 5
SI2	People I know have recommended Duolingo to me.	1 2 3 4 5
SI3	I engage in language learning discussions in online communities.	1 2 3 4 5
SI4	I enjoy participating in language learning communities or groups.	1 2 3 4 5

#### **D. Promotion (DP)**

No.	Statement	Rating
DP1	I am more likely to pay when Duolingo offers a discount.	1 2 3 4 5
DP2	I think limited-time offers make Duolingo more attractive.	1 2 3 4 5
DP3	I often take advantage of language app promotions when available.	1 2 3 4 5
DP4	Promotions increase the likelihood that I would purchase a subscription.	1 2 3 4 5

#### **E. Perceived Value (PV)**

No.	Statement	Rating
PV1	The value I get from Duolingo is worth the money I would pay.	1 2 3 4 5
PV2	The content in Duolingo saves me time in learning languages.	1 2 3 4 5



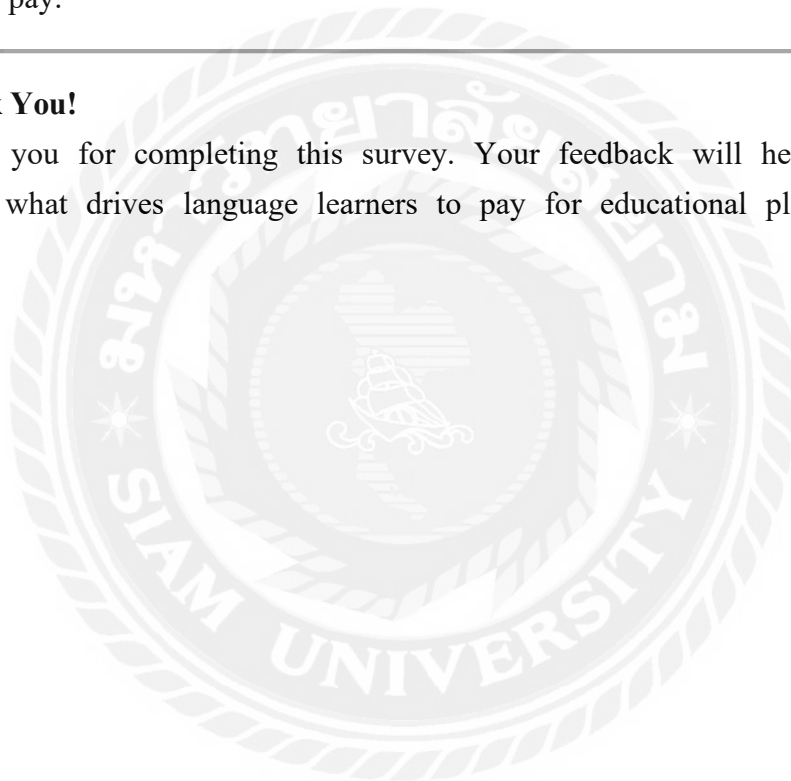
No.	Statement	Rating
PV3	Overall, Duolingo offers value that justifies a paid subscription.	1 2 3 4 5
PV4	I feel the benefits of Duolingo outweigh the costs.	1 2 3 4 5

#### **F. Willingness to Pay (WTP)**

No.	Statement	Rating
WTP1	I am willing to pay for premium features on Duolingo.	1 2 3 4 5
WTP2	I would recommend Duolingo's paid version to others.	1 2 3 4 5
WTP3	If Duolingo meets my learning needs, I am willing to pay.	1 2 3 4 5

#### **Thank You!**

Thank you for completing this survey. Your feedback will help us better understand what drives language learners to pay for educational platforms like Duolingo.





## บันทึกข้อความ

ส่วนงาน บัณฑิตวิทยาลัย สาขาบริหารธุรกิจ

โทร.ภายใน 5336

ที่ มส 0210.01 / 0261

วันที่ 14 กันยายน 2568

เรื่อง ขออนุมัติสำเร็จการศึกษาประจำปีการศึกษา 2567

เรียน ท่านอธิการบดี

เรื่องเดิม นักศึกษาหลักสูตรบริหารธุรกิจมหาบัณฑิต MISS. LIN XIAODING รหัสนักศึกษา 6417195825 ได้ศึกษารายวิชาครบถ้วนสมบูรณ์ และได้ปฏิบัติตามเกณฑ์สำเร็จการศึกษาตามที่มหาวิทยาลัยสยามกำหนดเรียบร้อยแล้ว ทั้งนี้พร้อมยื่นเรื่องขออนุมัติสำเร็จการศึกษา โดยมีรายละเอียด ดังต่อไปนี้

1. ผ่านการตรวจสอบความซ้ำซ้อนด้วยโปรแกรม Grammarly เมื่อวันที่ 16 สิงหาคม 2568
2. ผ่านการสอบประมวลความรู้ข้อเขียน เมื่อวันที่ 26 กรกฎาคม 2568
3. ผ่านการสอบปากเปล่าขั้นสุดท้ายวิชาการค้นคว้าอิสระ เมื่อวันที่ 18 กรกฎาคม 2568
4. ผ่านเกณฑ์มาตรฐานความรู้ภาษาอังกฤษ Oxford Placement Test score 61 CEFR B2 เมื่อวันที่ 14 กุมภาพันธ์ 2568
5. ผ่านการประชุมวิชาการระดับนานาชาติ at The 18<sup>th</sup> National and International Academic Conference on "Sustainable Horizon: Transforming Ideas into Impact" Subject : A Study of the Influencing Factors of Uses' Willingness to Pay on Online Education Platforms on 6-7 August 2025, United Nations Conference Centre Bangkok Thailand

เรื่องพิจารณา เพื่อพิจารณาเข้าประชุมสภามหาวิทยาลัย และอนุมัตินักศึกษาสำเร็จการศึกษา ประจำปีการศึกษา 2567 ดังรายละเอียดเอกสารประกอบการสำเร็จการศึกษาตามที่แนบมา

จึงเรียนมาเพื่อพิจารณาอนุมัติ และให้ดำเนินการต่อไป

(รศ.ดร.จอมพงศ์ มงคลวนิช)

คณบดีบัณฑิตวิทยาลัย สาขาบริหารธุรกิจ

ตรงต่อหน่วยงาน 15 เรื่อง

19.10.68

สำนักงานอธิการบดี
เอกสารฉบับนี้สามารถสืบค้นข้อมูลได้
ลงชื่อ.....
วันที่ 19/9/68