

Graduates' intention to develop live commerce: The educational background perspective using multi-group analysis

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ABSTRACT

Objective: This study explores graduates' intention to develop live commerce based on the theory of planned behaviour (TPB) and it analyses influencing factors based on attitude, subject norm, and perceived control aspects. Moreover, it focuses on the impact of graduates' educational background and explores its moderating role using multi-group analysis.

Research Design & Methods: Through analysing 420 graduate samples based on the partial least squares path modelling and variance-based structural equation modelling (PLS-SEM), the study results proved that attitude, subject norm, and perceived control factors positively affect graduates' live commerce intention.

Findings: The research results show that – compared to the high school or junior college background – the subject norm factor exerts a more substantial influence on the live commerce intention of graduates with a bachelor's degree. Meanwhile, the subject norm factor exerts a more significant impact on the live commerce intention of graduates with master's or doctoral degrees than those with Bachelor's degrees.

Implications & Recommendations: Considering the impact of educational background, this article explores the moderating role of educational background and promotes the multi-group analysis based on it.

Contribution & Value Added: The study proved that graduates with a higher degree will pay more attention to the subject norm factor while making live commerce decisions thus contributing to educational management.

Article type: research article

Keywords: graduates' entrepreneurship; live commerce intention; TPB model; educational background; multi-group analysis

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INTRODUCTION

As live-streaming technology becomes increasingly popular, many online entrepreneurs on social media platforms have adopted live streaming as a tool to enhance their sales performance and attract online consumers' shopping intentions (Sun, Shao, Li, Guo, & Nie, 2019). From an entrepreneur's perspective, taking advantage of live-streaming technology opens up a wealth of opportunities in advertising, marketing, and interacting with online consumers, which lead to winning online consumers' trust (Xu, Wu, & Li, 2020). The advantages of live commerce can explain why many retailers such as Amazon and Taobao have begun to design their live commerce platforms and cooperate with live streamers. Meanwhile, unlike traditional social commerce, where customers should leave the product page to contact the seller, live commerce provides a comfortable platform for online consumers to communicate with entrepreneurs through various convenient functions, such as real-time interaction, bullet screen, and online store (Sun *et al.*, 2019). The application of live commerce to advertise products and promote brands is booming in many countries. For example, the Taobao Live platform in China has already attracted more than 10 000 online entrepreneurs to promote live commerce and advertise various prod-

ucts, such as makeup, clothing and food (Cai & Wohn, 2019). According to the 2019 Taobao Live Streaming Ecological Development Report, live commerce on the Taobao Live platform has assisted online entrepreneurs in achieving over 100 billion Yuan in sales in 2018 (Sun *et al.*, 2019).

Attracted by the comfortable online business environment and convenient interactive functions, more and more graduates are willing to develop live commerce on live streaming platforms to implement innovative ideas, which is significant for researchers to focus on (Li & Kang, 2021a; Li, Kang, & Sohaib, 2021). Different from the traditional entrepreneurship model, live commerce established on live streaming platforms has no strict requirements for capital, sites and human resources, and it is suitable for graduates to practice their entrepreneurial plans (Ismail *et al.*, 2019). Due to the lack of financial reserves and entrepreneurial experiences for college students, starting live commerce on live streaming platforms is more suitable for them than a traditional offline business. Meanwhile, unlike other entrepreneurial groups, many graduates have accepted entrepreneurial education at universities and controlled advanced online business skills that can be applied in their future entrepreneurial activities. Hence, whether in developing countries or developed countries, both of their educational departments focus on graduates' entrepreneurial capabilities and design suitable policies to enhance their entrepreneurial intention (Yu, 2018). Although existing scholars pay much attention to graduates' entrepreneurial advantages and analyse their entrepreneurial intention (Al-Jubari, 2019; Fatoki, 2014), almost none of them analyse the features of live commerce and discuss graduates' intention to develop live commerce on live streaming platforms. Based on the differences between live-streaming commerce modes and traditional commerce modes, graduates could have a different entrepreneurial intention and be affected by specific factors. Thus, it is necessary to analyse the influencing factors of graduates' live commerce intention based on a theoretical model.

This article draws on the theory of planned behaviour (TPB), which is the widely accepted theory in entrepreneurial research (Al-Jubari, 2019). Ajzen (1991) proposes the TPB to explain and predict human intention patterns based on attitude, subjective norms, and perceived control aspects, and these factors have a positive relationship with personal intention (Ajzen, 1991). Hence, given its theoretical basis, it is suitable to apply the TPB to analyse graduates' live commerce intention based on three different aspects. However, graduates' educational background would potentially affect their intention to develop live commerce on live streaming platforms, which is ignored by existing studies (Zhang, Duysters, & Cloudt, 2014). The entrepreneurial motivation of graduates at lower levels of education and doctoral graduates may be different because of their unique knowledge backgrounds. Although prior studies have investigated the role of graduates' gender, age, and cultural background, few of them pay much attention to the impact of educational backgrounds and discuss its moderating role (Ferrerias-Garcia, Hernández-Lara, & Serradell-López, 2021; Israr & Saleem, 2018; Li & Kang, 2021b). Specifically, with their educational level increasing, graduates could have more opportunities to control entrepreneurial knowledge and practice their innovative idea. Grounded by human capital theory and entrepreneurial self-efficacy theory, graduates' educational background can directly influence their entrepreneurial intention (Bae, Qian, Miao, & Fiet, 2014; Gurel, Madanoglu, & Altinay, 2021). Hence, it has a significant impact on the relationship between influencing factors and graduates' live commerce intention. For example, graduates holding a higher education degree probably accept improved entrepreneurial education and have greater confidence to accept the live commerce mode (Gibson, Harris, Mick, & Burkhalter, 2011; Pulka, Aminu, & Rikwentishe, 2015). Conversely, others graduating from junior colleges could be unfamiliar with a new business model, and their entrepreneurial intention could be potentially influenced by the perceived control factor. In detail, due to the lack of entrepreneurial capabilities, graduates with lower educational degrees, such as high school and junior college degrees, would think it is difficult for them to develop live commerce (Pulka *et al.*, 2015). Hence, it is important to explore graduates' educational backgrounds as a moderating role and promote the multi-group analysis. Hence, the research question of the study question is:

How does graduates' educational background moderate the relationships between influencing factors and live commerce intention?

This article contributes both to the theoretical and practical implications. Regarding the theoretical implication, it focuses on graduates' live commerce intention based on the TPB model. Its effectiveness has been demonstrated by the existing literature. Meanwhile, graduates with different educational backgrounds could have different opinions on live commerce, and hence this article designs their educational background as a moderating factor to promote multi-group analysis, which existing studies ignore. Moreover, considering the rapid development of live-streaming technology, more and more graduates are attracted by live-streaming commerce and are willing to implement innovative ideas through this new entrepreneurial model. Hence, according to the final research results, the suggestions related to educational management can be presented in the practical implications part, benefiting educational departments to design specific policies.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Live Commerce

Live commerce is an innovation to the traditional business model. It consists of both live-streaming commerce and e-commerce models. Unlike the traditional social media shopping mode, live commerce, as a new online shopping mode, provides a real-time interactive experience between entrepreneurs and consumers (Wongkitrungrueng, Dehouche, & Assarut, 2020). A growing number of scholars have proved that online entrepreneurs are attracted by live commerce because of its advanced functions, such as real-time interaction, virtual gift-sending systems, and group chat functions (Li & Kang, 2022). Based on various interactive functions, online entrepreneurs can conveniently communicate with online consumers and understand their shopping experiences in real time. In China, the number of live-streaming users has reached 617 million and the number of live commerce users reached 388 million in 2020 (Lee & Chen, 2021). Meanwhile, considering that developing live commerce has no strict requirements for capital and sites, more and more graduates are more willing to establish online business activities on live streaming platforms rather than develop offline modes (Li *et al.*, 2021). This business model can alleviate the entrepreneurial pressure on graduates. Furthermore, to provide graduates with a comfortable entrepreneurial environment, many educational departments cooperate with related network industries, such as Tencent and Alibaba, to establish entrepreneurial training centres and help graduates understand live commerce strategies (Huang, Liu, & Li, 2020; Yu, 2018). Thus, compared with other entrepreneur groups, graduates have more opportunities to control online start-up capabilities and receive policy support from related departments. With the improvement of live commerce, more and more graduates could have a solid intention to develop live commerce, which scholars need to explore.

Theory of Planned Behaviour

The TPB is an extension of the theory of reasoned action, and it has been widely applied to explain individuals' entrepreneurial intentions and behaviours by previous studies (Maes, Leroy, & Sels, 2014; Robledo, Arán, Sanchez, & Molina, 2015). The TBP provides a theoretical framework to explore the effect of attitude, subjective norms, and perceived behavioural control on entrepreneurial intention. Although prior research applied the TPB to discover graduates' entrepreneurial intentions and identified the significant impact of three factors (Liñán & Rodríguez - Cohard, 2015; Rueda, Moriano, & Liñán, 2015; Sharahiley, 2020), few of them pay much attention to graduates' intention to develop live commerce on live streaming platforms. As a new entrepreneurial model, live commerce is different from the traditional entrepreneurship model. Its unique features, such as real-time interaction, product presentation, and sales logic significantly impact graduates' entrepreneurial activities. To systematically analyse graduates' live commerce intentions, it is significant for this study to use the TPB. Specifically, based on the TPB approach, it could be argued that graduates take their decision to develop live commerce based mainly on those three motivational factors, including attitude towards developing live commerce, subject norm towards developing live commerce, and perceived control towards developing live commerce (Ajzen, 1991). According to the TPB, attitude towards live commerce refers

to the degree to which a graduate has a favourable or unfavourable evaluation of the behaviour, subjective norm means a graduate with the perceived social pressure to perform or not to perform live commerce, and perceived control is defined as graduates' perception of the ease or difficulty of promoting live commerce (Ajzen, 1991; Taha, Ramlan, & Noor, 2017). Based on the empirical results provided by entrepreneurial research, these three influencing factors would have a significant impact on graduates' live commerce intention.

Graduates' Educational Background

To understand graduates' entrepreneurial intention comprehensively, existing studies have designed graduates' gender, age, income level, and family background as moderating factors to present specific research results (Moreno-Gómez, Gómez-Araujo, & Castillo-De Andreis, 2020; Nguyen, 2018). However, few of them consider the moderating role of the educational background while analysing graduates' live commerce intention. According to the entrepreneurial intention research designed by Nguyen (2018), entrepreneurs' educational level has a positive relationship with their entrepreneurial intention, because their educational background plays an essential role in controlling entrepreneurial knowledge and skills. Graduates holding higher education degrees could have more opportunities to study related entrepreneurial knowledge, such as real-time interaction skills, online marketing strategies, and human resource management (Gibson *et al.*, 2011; Pulka *et al.*, 2015). This means that graduates with a higher educational level could have greater confidence in developing live commerce. Meanwhile, due to the lack of entrepreneurial knowledge and experience, graduates with a lower educational level could face much pressure from their family members and focus more on the subject norm effect (Li & Kang, 2021a). In light of this, this study needs to design graduates' educational background as a moderating role and promote the multi-group analysis.

Research Model and Hypotheses

As mentioned in section 2.2, the study established the research model based on the TPB and designed the attitude, subject norm, and perceived control as influencing factors to discover graduates' live commerce intention. Meanwhile, considering the effect of educational background, this study discussed it as a moderating factor and made some comparisons based on graduates' educational background, as Figure 1 shows.

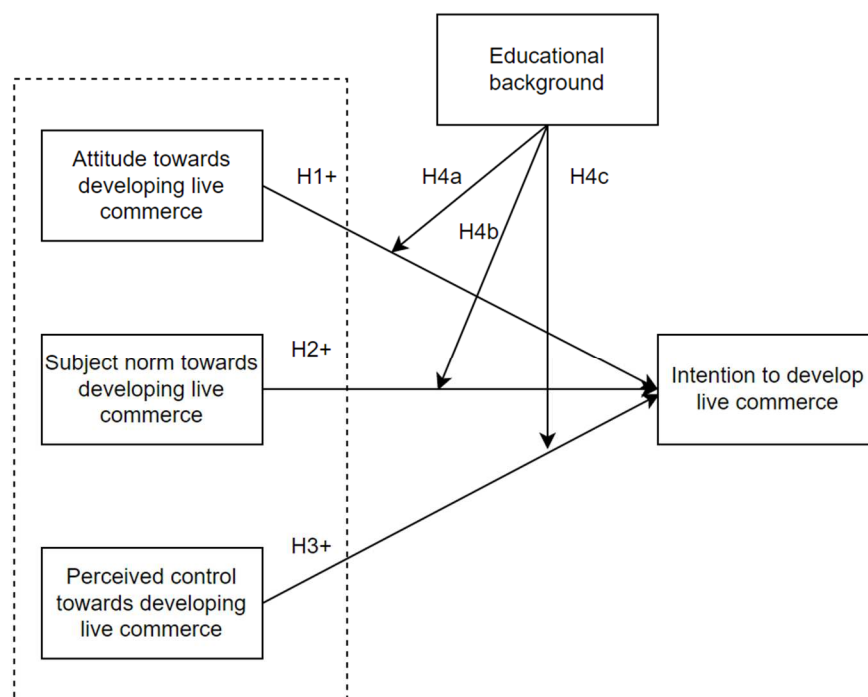


Figure 1. The research model

Source: adapted from Ajzen (1991); Taha, Ramlan, and Noor (2017).

Intention to Develop Live Commerce

Graduates' live commerce intention reflects their level of interest in starting an online business on live streaming platforms. To analyse graduates' live commerce intention, the study applied the TPB approach that is widely adopted to test individuals' entrepreneurial behaviours (Alam, Kousar, & Rehman, 2019). According to the TPB, graduates' attitudes towards developing live commerce, coupled with subjective norms and perceived control factors, all serve to affect graduates' intention to promote live commerce (Ajzen, 1991). As mentioned in section 2.2, graduates' attitude towards live commerce refers to the degree to which a graduate has a favourable or unfavourable evaluation of the behaviour, subjective norm means a graduate with the perceived social pressure to perform or not to perform live commerce, and perceived control is defined as graduates' perception of the ease or difficulty of promoting live commerce (Ajzen, 1991; Taha *et al.*, 2017). Meanwhile, whether in Eastern or Western countries, the theoretical foundation of TPB has been supported by existing entrepreneurial research. Prior scholars have successfully utilised the TPB to predict the impact of entrepreneurial attitudes, subject norms and perceived control on students' entrepreneurial intention (Farrukh, Alzubi, Shahzad, Waheed, & Kanwal, 2018; Karimi *et al.*, 2013). Specifically, as the results proposed by Karimi (2013) claim, all of these influencing factors, including attitudes, subjective norms and perceived control positively impact graduates' entrepreneurial intention. Based on the similarities between live commerce mode and traditional entrepreneurial mode, the research results could be applied to explain graduates' live commerce intention. Thus, we hypothesize:

- H1:** Graduates' attitude towards developing live commerce positively affects their intention to develop live commerce.
- H2:** Graduates' subject norm towards developing live commerce positively affects their intention to develop live commerce.
- H3:** Graduates' perceived control towards developing live commerce positively affects their intention to develop live commerce.

The Moderating Role of Educational Background

Graduates' educational background could significantly moderate the relationship between influencing factors and personal entrepreneurial intention, which the study needs to identify. Graduates with different educational backgrounds could accept different entrepreneurial education and have a specific understanding of live commerce mode (Li & Kang, 2022). For instance, entrepreneurial education received by graduates can promote the intention of entrepreneurial creation because entrepreneurial knowledge and skills stimulate graduates' motivation to create new entrepreneurship. Graduates with a higher educational level could have greater confidence in developing live commerce than those with a lower educational level because of their abundant entrepreneurial knowledge, which might lead them to a perception of the ease of promoting live commerce (Pulka *et al.*, 2015). Compared with master's degree graduates, others graduating from junior colleges could be unfamiliar with entrepreneurial skills, such as marketing skills, advertising strategies, and human resource management. Entrepreneurial pressure and diffident psychology could make lower-degree graduates concerned more about the subject norm and perceived control factors. Hence, graduates having different educational backgrounds could have different opinions to live commerce, which the study needs to compare. Hence, we hypothesize:

- H4a:** Graduates' educational background could moderate the effect of attitude towards developing live commerce.
- H4b:** Graduates' educational background could moderate the effect of subject norm towards developing live commerce.
- H4c:** Graduates' educational background could moderate the effect of perceived control towards developing live commerce.

RESEARCH METHODOLOGY

Research Setting and Measurement

As identified by prior scholars (Li, Kang, Zhao, & Feng, 2022), to test the hypotheses proposed in section three and implement a quantitative approach, an online questionnaire-based survey was appropriate. Considering the influence of the COVID-19 pandemic, the remote access and flexible filling time provided by the online questionnaire method were of particular importance for the current study. Meanwhile, because of the rapid development of The Fourth Wave of entrepreneurship in China, numerous graduates have accepted the live commerce mode and promoted online business activities on live streaming platforms, such as Taobao Live, Jingdong Live, and TikTok platforms (Li *et al.*, 2021). Hence, it is reasonable for this article to select the Chinese live commerce environment as the research context and explore Chinese graduates' live commerce intentions. The online questionnaire is distributed among Chinese graduates in Mainland China.

All constructs measured in this research are based on existing scholars, as Table 1 presents (do Paço, Ferreira, Raposo, Rodrigues, & Dinis, 2011; Usman, 2019). In addition to testing graduates' live commerce intention, some basic information statistics have been included in this study, such as their gender, age, and educational background (including high school or Junior college degree, bachelor's degree and master's or doctoral degree). The article utilised the Likert 7-point scale with a range from the lowest score=1 to the highest score=7 to measure participants' answers.

Table 1. The list of questionnaire contents

Variable	Item	Measurement
Attitude towards developing live commerce (do Paço <i>et al.</i> , 2011; Usman, 2019)	AT1	Developing live commerce implies more advantages than disadvantages to me.
	AT2	The live commerce career is attractive to me
	AT3	Being a live commerce entrepreneur would entail great satisfaction for me
Subject norm towards developing live commerce (do Paço <i>et al.</i> , 2011; Usman, 2019)	SN1	I will develop live commerce if people of importance to me encourage me to do that.
	SN2	Recommendations from close friends will make me want to try live commerce.
	SN3	The opinions of those who are important to me will affect my decision to develop live commerce.
Perceived control towards developing live commerce (do Paço <i>et al.</i> , 2011; Usman, 2019)	PC1	To start live commerce and keep it working would be easy for me.
	PC2	I know the necessary practical details to start live commerce.
	PC3	I can control the creation process of new live commerce.
Intention to develop live commerce (do Paço <i>et al.</i> , 2011; Usman, 2019)	IN1	I am ready to do anything to be a live commerce entrepreneur.
	IN2	I will make every effort to start and run live commerce.
	IN3	I have the firm intention to start live commerce someday.

Source: adapted from do Paço *et al.*, 2011; Usman, 2019.

Data Collection

In view of the participant's background, this study applied wxj.cn, an online Chinese questionnaire platform, as the data collection platform. It has academic functions and multi-language options, which makes it suitable for Chinese graduates to fill in. To concentrate on the target respondents, many filtering question items are designed before the formal questions, such as participants' age, gender, educational background, and online entrepreneurship interest. Before participants fill in online questionnaires, the invitation letter is presented in advance to help them know the research topic, thus improving the accuracy of questionnaire data. From January 2022 to February 2022, online questionnaires were mainly distributed in Chinese universities and colleges through social media platforms. Four hundred fifty-six responses were received from different provinces, and most of the participants were men between 19 and 30 years old. Among these 456 questionnaires, inap-

propriate responses were deleted, including incomplete answers, the same responses, and the same IP address. Finally, 420 questionnaires were found valid for this study.

Data Analysis

Descriptive Statistics

Among 420 respondents (Table 2), 48.10% were women, and 51.90% – men. 68.10% of them were between 19 and 30 years old, 15.95% – between 31 and 35 years old, and few of them – under 19 or over 35 years old. Regarding participants’ educational backgrounds, 35.24% had high school or junior college degrees, 35.48% had bachelor’s degree backgrounds, and 29.29% of their educational backgrounds were master’s or doctoral degrees.

Table 2. The basic information of respondents (n=420)

Demographic Variables	Category	Frequency	Percentage (%)
Gender	Female	202	48.10%
	Male	218	51.90%
Age	Under 19	54	12.86%
	19-30	286	68.10%
	31-35	67	15.95%
	Over 35	13	3.10%
Educational background	high school or junior college degree	148	35.24%
	bachelor’s degree	149	35.48%
	master’s or doctoral degree	123	29.29%

Source: own study based on Smart-PLS output, 2022.

To evaluate the research model and test hypotheses, the variance-based structural equation modelling (SEM) and partial least squares (PLS) path modelling were applied in this study. According to Hair *et al.’s* research (2017), PLS-SEM is a causal-predictive approach to SEM, and it can be applied to test a theoretical framework from a prediction perspective. Meanwhile, PLS-SEM has the added advantage of estimating the measurement model and is beneficial for conducting multi-group analysis (Hair, Hollingsworth, Randolph, & Chong, 2017).

Measurement Model

Regarding the reliability test, the study should assess the criteria, including average variance extracted (AVE), composite reliability (CR), and Cronbach Alpha (Henseler, Ringle, & Sarstedt, 2015). Based on requirements proposed by existing scholars, AVE should be higher than 0.50, CR needs to be higher than 0.70, and Cronbach’s Alpha should be greater than 0.70. Hence, as Table 3 presents, all data results met the requirements, indicating reasonable reliability. Meanwhile, convergent validity and discriminant validity can be tested through confirmatory factor analysis. As the factor loadings and cross-loadings show in Table 3, each construct’s markers’ loadings are highly correlated, and the range of factor loadings is from 0.952 to 0.974, which is dramatically greater than 0.707, thus meeting the convergent validity requirement.

The discriminant validity can be evaluated by checking the Fornell-Larcker criterion, which has been widely identified (Afthanorhan, Ghazali, & Rashid, 2021). The AVEs’ square root on the diagonals can assess whether the discriminant validity is acceptable (Chin, 1998; Fornell & Larcker, 1981). Specifically, the AVEs’ square root on the diagonals in Table 4 is significantly higher than other correlations, supporting the discriminant validity.

Table 3. Assessment of measurement model on loading, CR, AVE, and Cronbach's Alpha

Construct	Item	Loading	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
AT	AT1	0.974	0.966	0.978	0.937
	AT2	0.962			
	AT3	0.968			
IN	IN1	0.960	0.959	0.973	0.924
	IN2	0.957			
	IN3	0.967			
PC	PC1	0.961	0.955	0.971	0.918
	PC2	0.952			
	PC3	0.962			
SN	SN1	0.953	0.955	0.971	0.918
	SN2	0.962			
	SN3	0.959			

Note. AT= Attitude towards developing live commerce, SN= Subject norm towards developing live commerce, PC= Perceived control towards developing live commerce, IN= Intention to develop live commerce.

Source: own elaboration based on Smart-PLS output, 2022.

Table 4. Discriminant validity for the measurement model according to the Fornell-Larcker criterion

Construct	AT	IN	PC	SN
AT	0.968			
IN	0.957	0.961		
PC	0.952	0.949	0.958	
SN	0.947	0.946	0.949	0.958

Source: own study based on Smart-PLS output, 2022.

Common Method Bias

Because some correlations of the constructs were relatively high, it might cause common method bias. According to Liang *et al.*'s study (2007), the single-factor test and the measured latent-factor test can evaluate the common method bias. Specifically, the average of trait factors explained 91.70% of the overall variance and the standard of method factors explained 1.50% of the overall variance, thus demonstrating common method bias was not serious, and the correlations of the constructs were reasonable in this study (Liang, Saraf, Hu, & Xue, 2007).

Structural Model

To assess each path's significances and the t-statistical test, this study utilised the bootstrapping function on SmartPLS 3.0. According to Table 5, all hypotheses could be supported, because t-statistics results were notably higher than 1.96 (Hair Jr, Hult, Ringle, & Sarstedt, 2016). This means that attitude ($\beta=0.441$, $t=7.918$, $p<0.001$), subject norm ($\beta=0.288$, $t=5.780$, $p<0.001$), and perceived control ($\beta=0.255$, $t=4.403$, $p<0.001$) had positive relationships with graduates' intention to develop live commerce on live streaming platforms, thus indicating that hypothesis 1, hypothesis 2, and hypothesis were supported.

Table 5. Hypotheses testing

Path	Original Sample (O)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values	Support?
AT -> IN	0.441	0.056	7.918	P<0.001	Yes
PC -> IN	0.288	0.050	5.780	P<0.001	Yes
SN -> IN	0.255	0.058	4.403	P<0.001	Yes

Source: own study based on Smart-PLS output, 2022.

Multi-group comparison

Table 6 shows the differences in path coefficient estimates in three pairs of comparison (high school or junior college degree vs bachelor degree, high school, or junior college degree vs master or doctoral degree, bachelor degree vs master or doctoral degree), and it presents the results of multi-group comparisons. The results suggest that graduates holding master's or doctoral degrees are significantly different from others. Notably, in terms of the relationship between subjective norm and intention, the high school or junior college degree sample was significantly different from the bachelor's degree sample (|diff|=-0.506; p-value=0.013) and the master's or doctoral degree sample (|diff|=-0.830; p-value=0.001), and graduates with bachelor degree sample was significantly different from the master or doctoral degree sample (|diff|=-0.324; p-value=0.035). Several conclusions can be stated while combining these results with the pairwise path coefficients in Table 6. Compared with the high school or junior college background, the subject norm factor exerted a more significant influence on the live commerce intention of graduates with a bachelor's degree. Meanwhile, the subject norm factor exerted a more significant impact on the live commerce intention of graduates with master's or doctoral degrees than others with bachelor's degrees. This means that graduates with a higher degree paid more attention to the subject norm factor.

Table 6. Multi-group comparison test results

Relationship	Comparison	diff	p-Value	Decision
AT -> IN	HJ vs BA	-0.221	0.124	Not supported
	HJ vs MD	-0.199	0.283	Not supported
	BA vs MD	0.021	0.918	Not supported
PC -> IN	HJ vs BA	-0.448	0.050	Not supported
	HJ vs MD	-0.303	0.262	Not supported
	BA vs MD	0.145	0.386	Not supported
SN -> IN	HJ vs BA	-0.506	0.013	Supported
	HJ vs MD	-0.830	0.001	Supported
	BA vs MD	-0.324	0.035	Supported

Note. HJ= High school or junior college degree, BA= bachelor's degree, MD= master's or doctoral degree.

Source: own elaboration based on Smart-PLS output, 2022.

RESULTS AND DISCUSSION

Key Findings

Firstly, consistent with previous entrepreneurship studies (Liñán & Rodríguez - Cohard, 2015; Rueda *et al.*, 2015; Sharahiley, 2020), the influencing factors based on the TPB model positively affected graduates' intention to develop live commerce. This means that – whether for live commerce mode or traditional online entrepreneurship – the influencing factors, including attitude, subject norm, and perceived control play significant roles in individuals' entrepreneurial intention. Meanwhile, unlike prior related research focusing on graduates' age, gender, and cultural background (Ferrerias-Garcia *et al.*, 2021; Israr & Saleem, 2018; Li & Kang, 2021b), this study analysed graduates' educational backgrounds and made comparisons based on them. Compared with the high school or junior college background, the subject norm factor exerted more influence on live commerce intention for graduates with a bachelor's degree. The subject norm factor exerted a more significant impact on the live commerce intention of graduates with master's or doctoral degrees than others with bachelor's degrees. Hence, graduates with a higher degree will pay more attention to the subject norm factor while making live commerce decisions. Graduates with a master's or doctoral degree paid more attention to the subject norm even if they had controlled more comprehensive and advanced entrepreneurial skills than others. According to entrepreneurial research proposed by Zamrudi and Yulianti (2020), graduates' entrepreneurial knowledge has no strict connection with their entrepreneurial intention, and some of them still lack the confidence to promote entrepreneurship (Zamrudi & Yulianti, 2020). Meanwhile, graduates with higher educational levels

have more opportunities to receive entrepreneurial knowledge and understand related entrepreneurial risks, which leads them to be cautious about uncertainty issues and undertake entrepreneurial pressures (Ferreira, Loiola, & Gondim, 2017). Hence, before they promote live commerce, graduates with higher educational levels could concern more about risks and need their family members' and peers' approval and encouragement. Conversely, graduates with lower educational levels would be unfamiliar with entrepreneurial risks and less influenced by the subject norm.

Theoretical Implications and Practical Implications

Regarding the theoretical implication, the study applied the TPB model to explore graduates' live commerce intentions. Although existing studies applied the TPB to analyse graduates' entrepreneurial motivation (Maes *et al.*, 2014; Robledo *et al.*, 2015), few of them identified the new trend of live commerce and explored graduates' attitudes to this new entrepreneurship mode. Unlike online traditional business mode, developing live commerce on live streaming platforms has unique advantages for graduates, such as technical support, flexible workspace, and tax exemption, which entrepreneurial research needs to focus on. Given that live commerce gets popular around the world, it is meaningful to know graduates' live commerce intentions and help them engage in this new trend successfully. Meanwhile, considering graduates with different educational backgrounds could have different opinions about living commerce activities (Zhang *et al.*, 2014), this article promotes the multi-group analysis based on a non-parametric approach and makes comparisons according to graduates' educational degree levels, which is ignored by the existing literature. The results prove that the educational background factor can significantly moderate the relationship between the subject norm and individuals' live commerce intention. Therefore, in addition to analysing individuals' age, gender, cultural background, and income level, future studies should also concern graduates' educational backgrounds while discovering their entrepreneurial intention.

Regarding the practical implication, the research results show that related departments, especially educational departments, should focus on graduates' live commerce intention from attitude, subject norm and perceived control aspects, which accords with the traditional entrepreneurship mode. All of these influencing factors positively influence graduates' intention to develop live commerce. Specifically, to increase graduates' online entrepreneurial interest, educational departments should guide graduates' opinions on live commerce, encourage peers' cooperation and enhance graduates' entrepreneurial capabilities. Meanwhile, graduates with a higher education degree will pay more attention to the impact of the subject norm and need to get their family members and peers' approval before developing live commerce. Due to mastering various entrepreneurial knowledge, graduates with master's or doctorate degrees have more chances to comprehensively understand entrepreneurship risks than others with lower educational degrees. This results in them lacking entrepreneurial confidence and relying on peers' emotional support. Hence, regarding graduates with master's or doctoral degrees, educational departments need to focus on cooperation with their family members and peers' group while encouraging them to develop live commerce on live streaming platforms.

Limitations and Future Study

Graduates with different social and cultural backgrounds could have different opinions on live commerce mode. For instance, Eastern entrepreneurs may be more pragmatic, and Westerners may be more entertaining. This means that the data analysis results based on Chinese graduate samples cannot be applied to Western graduates directly. The educational background could have different moderating roles. Hence, future studies should both cover Eastern and Western graduates and make some comparisons between them, aiming to provide specific suggestions for local departments. Meanwhile, although some graduates have the same educational degrees, the educational quality they accepted is different. For instance, graduates from China's eastern regions have more opportunities to receive high-quality education resources, and others from western regions have fewer opportunities to learn advanced entrepreneurial education. Thus, future studies should concern regional difference. Finally, the questionnaire was distributed through social media platforms and we must bear in mind that graduates from less-developed regions could be unfamiliar with online platforms and live commerce mode.

To understand their intention to develop live commerce, future studies should promote offline questionnaires and interview methods.

CONCLUSIONS

Based on the TPB model, attitude, subject norm and perceived control have positive correlations with graduates' intention to develop live commerce, which accords with existing entrepreneurship research results. Meanwhile, this article focuses on the moderating role of educational background and promotes the multi-group analysis based on it, which is ignored by existing studies. Compared with the high school or junior college background, the subject norm factor exerts a bigger influence on live commerce intention of graduates with a bachelor's degree. Meanwhile, the subject norm factor exerted a greater impact on live commerce intention of graduates with master's or doctoral degrees than others with bachelor's degrees. Hence, graduates with a higher degree paid more attention to the subject norm factor while making live commerce decisions. The research results require educational departments to pay much attention to the impact of the subject norm and design specific strategies to enhance graduates' live commerce intention.

REFERENCES

- Afthanorhan, A., Ghazali, P.L., & Rashid, N. (2021). Discriminant Validity: A Comparison of CBSEM and Consistent PLS using Fornell & Larcker and HTMT Approaches. Paper presented at the Journal of Physics: Conference Series.
- 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)
- Al-Jubari, I. (2019). College students' entrepreneurial intention: Testing an integrated model of SDT and TPB. *Sage Open*, 9(2), 1-15. <https://doi.org/10.1177/2158244019853467>
- Alam, M.Z., Kousar, S., & Rehman, C. (2019). Role of entrepreneurial motivation on entrepreneurial intentions and behaviour: theory of planned behaviour extension on engineering students in Pakistan. *Journal of Global Entrepreneurship Research*, 9(1), 1-20. <https://doi.org/10.1186/s40497-019-0175-1>
- Bae, T.J., Qian, S., Miao, C., & Fiet, J.O. (2014). The relationship between entrepreneurship education and entrepreneurial intentions: A meta-analytic review. *Entrepreneurship Theory and Practice*, 38(2), 217-254. <https://doi.org/10.1111/etap.12095>
- Cai, J., & Wohn, D.Y. (2019). Live streaming commerce: Uses and gratifications approach to understanding consumers' motivations. Paper presented at the Proceedings of the 52nd Hawaii International Conference on System Sciences.
- Chin, W.W. (1998). Commentary: Issues and opinion on structural equation modeling. *JSTOR*, 22(11), vii-xvi. Retrieved from <https://www.jstor.org/stable/249674> on January 1, 2023.
- do Paço, A.M.F., Ferreira, J.M., Raposo, M., Rodrigues, R.G., & Dinis, A. (2011). Behaviours and entrepreneurial intention: Empirical findings about secondary students. *Journal of International Entrepreneurship*, 9(1), 20-38. <https://doi.org/10.1007/s10843-010-0071-9>
- Farrukh, M., Alzubi, Y., Shahzad, I.A., Waheed, A., & Kanwal, N. (2018). Entrepreneurial intentions: The role of personality traits in perspective of theory of planned behaviour. *Asia Pacific Journal of Innovation and Entrepreneurship*, 12(3), 399-414. <https://doi.org/10.1108/APJIE-01-2018-0004>
- Fatoki, O. (2014). The entrepreneurial intention of undergraduate students in South Africa: The influences of entrepreneurship education and previous work experience. *Mediterranean Journal of Social Sciences*, 5(7), 294. <https://doi.org/10.5901/mjss.2014.v5n7p294>
- Ferreira, A.D.S.M., Loiola, E., & Gondim, S.M.G. (2017). Motivations, business planning, and risk management: entrepreneurship among university students. *RAI Revista de Administracao e Inovacao*, 14(2), 140-150. <https://doi.org/10.1016/j.rai.2017.03.003>
- Ferreras-Garcia, R., Hernández-Lara, A.B., & Serradell-López, E. (2021). Gender and learning results: a study on their relationship in entrepreneurship education and business plans. *Studies in Higher Education*, 46(11), 2355-2370. <https://doi.org/10.1080/03075079.2020.1723525>

- Fornell, C., & Larcker, D.F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39-50. <https://doi.org/10.1177/002224378101800104>
- Gibson, D., Harris, M.L., Mick, T.D., & Burkhalter, T.M. (2011). Comparing the entrepreneurial attitudes of university and community college students. *Journal of Higher Education Theory and Practice*, 11(2), 11-19. Retrieved from <http://www.na-businesspress.com/jhhttp/GibsonWeb.pdf> on January 1, 2023.
- Gurel, E., Madanoglu, M., & Altinay, L. (2021). Gender, risk-taking and entrepreneurial intentions: assessing the impact of higher education longitudinally. *Education+ Training*, 63(5), 777-792. <https://doi.org/10.1108/ET-08-2019-0190>
- Hair, J., Hollingsworth, C.L., Randolph, A.B., & Chong, A.Y.L. (2017). An updated and expanded assessment of PLS-SEM in information systems research. *Industrial Management & Data Systems*, 117(3), 442-458. <https://doi.org/10.1108/IMDS-04-2016-0130>
- Hair Jr, J.F., Hult, G.T.M., Ringle, C., & Sarstedt, M. (2016). A primer on partial least squares structural equation modeling (PLS-SEM): Sage publications.
- Henseler, J., Ringle, C.M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, 43(1), 115-135. <https://doi.org/10.1007/s11747-014-0403-8>
- Huang, Q., Liu, X., & Li, J. (2020). Contextualization of Chinese entrepreneurship research: an overview and some future research directions. *Entrepreneurship & Regional Development*, 32(5-6), 353-369. <https://doi.org/10.1080/08985626.2019.1640437>
- Ismail, A., Adnan, W.N., Masek, A., Hassan, R., Hashim, S., & Ismail, M.E. (2019). Effectiveness of entrepreneurship programmes in developing entrepreneurship skills towards quality TVET graduates. *Journal of Technical Education and Training*, 11(1). Retrieved from <https://penerbit.uthm.edu.my/ojs/index.php/JTET/article/view/3222> on January 1, 2023.
- Israr, M., & Saleem, M. (2018). Entrepreneurial intentions among university students in Italy. *Journal of Global Entrepreneurship Research*, 8(1), 1-14. <https://doi.org/10.1186/s40497-018-0107-5>
- Karimi, S., Biemans, H.J., Lans, T., Chizari, M., Mulder, M., & Mahdei, K.N. (2013). Understanding role models and gender influences on entrepreneurial intentions among college students. *Procedia-social and Behavioral Sciences*, 93, 204-214. <https://doi.org/10.1016/j.sbspro.2013.09.179>
- Lee, C.-H., & Chen, C-W. (2021). Impulse buying behaviors in live streaming commerce based on the stimulus-organism-response framework. *Information*, 12(6), 241. <https://doi.org/10.3390/info12060241>
- Li, L., & Kang, K. (2021a). Effect of the Social and Cultural Control on Young Eastern Ethnic Minority Groups' Online-Startup Motivation. *Entrepreneurship Research Journal* (ahead-of-print). <https://doi.org/10.1515/erj-2021-0262>
- Li, L., & Kang, K. (2021b). Why ethnic minority groups' online-startups are booming in China's tight cultural ecosystem?. *Journal of Entrepreneurship in Emerging Economies* (ahead-of-print). <https://doi.org/10.1108/JEEE-08-2021-0322>
- Li, L., & Kang, K. (2022). Impact of opportunity and capability on e-entrepreneurial motivation: a comparison of urban and rural perspectives. *Journal of Entrepreneurship in Emerging Economies*(ahead-of-print). <https://doi.org/10.1108/JEEE-06-2022-0178>
- Li, L., Kang, K., & Sohaib, O. (2021). Investigating factors affecting Chinese tertiary students' online-startup motivation based on the COM-B behaviour changing theory. *Journal of Entrepreneurship in Emerging Economies* (ahead-of-print). <https://doi.org/10.1108/JEEE-08-2021-0299>
- Li, L., Kang, K., Zhao, A., & Feng, Y. (2022). The impact of social presence and facilitation factors on online consumers' impulse buying in live shopping-celebrity endorsement as a moderating factor. *Information Technology & People* (ahead-of-print). <https://doi.org/10.1108/ITP-03-2021-0203>
- Liang, H., Saraf, N., Hu, Q., & Xue, Y. (2007). Assimilation of enterprise systems: the effect of institutional pressures and the mediating role of top management. *MIS Quarterly*, 31(1), 59-87. <https://doi.org/10.2307/25148781>
- Liñán, F., & Rodríguez-Cohard, J.C. (2015). Assessing the stability of graduates' entrepreneurial intention and exploring its predictive capacity. *Academia Revista Latinoamericana de Administración*, 28(1), 77-98. <https://doi.org/10.1108/ARLA-06-2013-0071>

- Maes, J., Leroy, H., & Sels, L. (2014). Gender differences in entrepreneurial intentions: A TPB multi-group analysis at factor and indicator level. *European Management Journal*, 32(5), 784-794. <https://doi.org/10.1016/j.emj.2014.01.001>
- Moreno-Gómez, J., Gómez-Araujo, E., & Castillo-De Andreis, R. (2020). Parental role models and entrepreneurial intentions in Colombia: does gender play a moderating role?. *Journal of Entrepreneurship in Emerging Economies*, 12(3), 413-429. <https://doi.org/10.1108/JEEE-04-2019-0048>
- Nguyen, C. (2018). Demographic factors, family background and prior self-employment on entrepreneurial intention-Vietnamese business students are different: why?. *Journal of Global Entrepreneurship Research*, 8(1), 1-17. <https://doi.org/10.1186/s40497-018-0097-3>
- Pulka, B.M., Aminu, A.A., & Rikwentishe, R. (2015). the effects of entrepreneurship education on university students' attitude and entrepreneurial intention. *European Journal of Business and Management*, 7(20), 149-157. Retrieved from <https://www.researchgate.net/publication/301355044> on January 1, 2023.
- Robledo, J.L.R., Arán, M.V., Sanchez, V.M., & Molina, M.Á.R. (2015). The moderating role of gender on entrepreneurial intentions: A TPB perspective. *Intangible Capital*, 11(1), 92-117. <https://doi.org/10.3926/ic.557>
- Rueda, S., Moriano, J.A., & Liñán, F. (2015). Validating a theory of planned behavior questionnaire to measure entrepreneurial intentions. In *Developing, Shaping and Growing Entrepreneurship*: Edward Elgar Publishing.
- Sharahiley, S.M. (2020). Examining entrepreneurial intention of the Saudi Arabia's University students: Analyzing alternative integrated research model of TPB and EEM. *Global Journal of Flexible Systems Management*, 21(1), 67-84. <https://doi.org/10.1007/s40171-019-00231-8>
- Sun, Y., Shao, X., Li, X., Guo, Y., & Nie, K. (2019). How live streaming influences purchase intentions in social commerce: An IT affordance perspective. *Electronic Commerce Research and Applications*, 37, 100886. <https://doi.org/10.1016/j.elerap.2019.100886>
- Taha, K.A.S., Ramlan, S.N., & Noor, I.M. (2017). The factors affecting entrepreneurial intentions of university students in Malaysia. *International Journal of Business and Technopreneurship*, 7(2), 189-202. Retrieved from https://ijbt.unimap.edu.my/images/stories/VOL%207,%20No.%202,%20JUN%202017/IJBT_Vol_7_Jun_2017_6_189-202.pdf on January 1, 2023.
- Usman, B. (2019). Understanding the entrepreneurial intention among international students in Turkey. *Journal of Global Entrepreneurship Research*, 9(1), 1-21. <https://doi.org/10.1186/s40497-018-0136-0>
- Wongkitrungrueng, A., Dehouche, N., & Assarut, N. (2020). Live streaming commerce from the sellers' perspective: implications for online relationship marketing. *Journal of Marketing Management*, 36(5-6), 488-518. <https://doi.org/10.1080/0267257X.2020.1748895>
- Xu, X., Wu, J.-H., & Li, Q. (2020). What drives consumer shopping behavior in live streaming commerce?. *Journal of Electronic Commerce Research*, 21(3), 144-167. Retrieved from http://ojs.jecr.org/jecr/sites/default/files/2020vol21no3_Paper1.pdf on January 1, 2023.
- Yu, C.W. (2018). Understanding the ecosystems of Chinese and American entrepreneurship education. *Journal of Entrepreneurship Education*. Retrieved from https://vc.bridgew.edu/management_fac/42 on January 1, 2023.
- Zamrudi, Z., & Yulianti, F. (2020). Sculpting factors of entrepreneurship among university students in Indonesia. *Entrepreneurial Business and Economics Review*, 8(1), 33-49. <https://doi.org/10.15678/EBER.2020.080102>
- Zhang, Y., Duysters, G., & Clodt, M. (2014). The role of entrepreneurship education as a predictor of university students' entrepreneurial intention. *International Entrepreneurship and Management Journal*, 10(3), 623-641. <https://doi.org/10.1007/s11365-012-0246-z>


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Conflict of Interest

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