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ABSTRACT

E-entrepreneurship plays a key role in China's economic development because it encourages new business ventures and innovation. Hence, understanding what motivates young Chinese people to engage in e-entrepreneurship is an important issue for regional and global development. This study proposed entrepreneurship policy and entrepreneurship education as key antecedents of people's attitude towards e-entrepreneurship, subjective norms, and perceived behaviour control, which in turn influenced their intention to start an e-business. The proposed model was tested using the responses from 220 young Chinese adults. The results of structural equation modelling confirmed that entrepreneurship policy and e-entrepreneurship education were antecedents of people's attitude towards e-entrepreneurship, subjective norms, and perceived behaviour control, while subjective norms and perceived behaviour control significantly influenced their e-entrepreneurial intention. Nevertheless, people's attitude towards e-entrepreneurship did not have a significant influence on their e-entrepreneurial intention. The study findings were discussed with respect to the critical e-business trend in China that shapes young entrepreneurs and their creative goals.

KEYWORDS

e-entrepreneurship; theory of planned behaviour; e-entrepreneurship education; policy; Chinese

1. Introduction

E-commerce is a business model in which transactions take place in electronic networks (Turban et al., 2018). It enables entrepreneurs to discover and exploit opportunities and to reduce capital investment and operating costs, thus building their enterprises in a very effective way (Pickernell et al., 2013). In China, two e-commerce giants – Tencent and Alibaba – were founded by Huateng Ma in Shenzhen in 1998 and Jack Ma in Hangzhou in 1999, respectively, with very limited resources in the beginning. However, both companies have grown remarkably over the past two decades due to the co-evolution between economic development, education development, urbanization, and the Chinese government's information strategies (Yao & Watanabe, 2008). By the end of 2017, Tencent and Alibaba had become the most valuable companies in Asia in terms of market capitalization at USD 493 billion and 441 billion, respectively (Cho, 2018), and the world's largest e-commerce companies (Turban et al., 2018). As suggested by Turban et al. (2018), e-commerce is more than buying and selling through electronic networks; it

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covers learning, innovating, communicating, collaborating, problem-solving, social networking, etc.

According to the 43rd China Statistical Report on Internet Development (CNNIC, 2019), the total revenue of e-commerce platforms in China increased to RMB 366.7 billion in 2018, a 13.1 percent increase on a year-over-year basis. More specifically, the total amount of e-commerce transactions was RMB 31,630 billion in 2018, an 8.5 percent increase on a year-over-year basis. The total amount of online shopping transactions was approximately RMB 7,020 billion, accounting for 18.4 percent of all China's retail sales of consumer goods in 2017 (CNNIC, 2019). The central government of China has realized that e-commerce plays a significant role in sustaining China's economic growth. JD.com, an e-commerce platform partly owned by Tencent, has approximately 170,000 merchants. Alibaba's B2C platform, Tmail.com, has over 150,000 brands, and its C2C platform, Taobao.com, has more than 10 million vendors. Alibaba reported that many of Taobao's buyers are China's post-80s and post-90s generations, while approximately 30 percent of Taobao's vendors are from the post 90s generations (Long, 2017). Thus, many Chinese entrepreneurs confidently offer complementary services in C2C e-commerce platforms, such as Taobao, JD, etc.

However, entrepreneurship in China is sparsely mentioned in the academic literature (Ahlstrom & Ding, 2014; Huang, Liu, & Li, 2019; Taormina & Lao, 2007). Ahlstrom and Ding (2014) reviewed research about entrepreneurship in China and found that most studies focused on characterizing China's entrepreneurs and exploring their strategic choices, growth strategies, and patterns. The number of China's enterprises has increased ever more rapidly since China opened up its economy in 1978 (Taormina & Lao, 2007). Specifically, most of China's new entrepreneurs are between age 25 and 35, and many of them are well educated (Ahlstrom & Ding, 2014; Wang & Liao, 2015). Many new entrepreneurs use e-commerce platforms to launch their businesses because China's online shopping is the fastest expanding market in the world (Kuah & Wang, 2017). Nevertheless, there is scant literature exploring what motivates young Chinese people to start e-commerce businesses.

The purposes of the study are (i) to apply the theory of planned behaviour (TPB) to predict Chinese young adults' e-entrepreneurial intention; (ii) to identify key antecedents that influence their attitude, subjective norms, and perceived behaviour control; and (iii) to evaluate the impact of education and policy on the e-entrepreneurial intentions of young Chinese adults. The rest of the paper is structured as follows. First, a literature review on e-entrepreneurship and TPB and the hypotheses are given. Next, the method is presented, followed by results and discussion. The paper concludes with academic and practical implications and the limitations of the study.

2. Literature review and hypothesis development

Entrepreneurship is an important human endeavour because it not only brings new ideas, products, and services to the market but also creates job opportunities and sustains a country's economic growth under a proper entrepreneurial framework (Abdullah & Muhammad, 2008; Acs, 2006; Beynon, Jones, & Pickernell, 2018). According to Kent, Sexton, and Vesper (1982), entrepreneurship can be defined as the creation of a new business enterprise by an individual or a small group of people who drive changes in the market and/

or the technologies used. Eventually, entrepreneurship may lead to a cultural shift in society. Carland, Hoy, Boulton, and Carland (2007) suggest that an entrepreneur is an individual who aims to establish a profitable business and drives growth. The entrepreneur often engages in innovative behaviour and makes strategic management decisions. Thus, entrepreneurship has been studied in the context of sociology (Kent et al., 1982; Thornton, 1999), economics (Acs, 2006; Huggins & Thompson, 2015; Parker, 2018), innovation (Abdullah & Muhammad, 2008), e-commerce (Martinez & Williams, 2010; Sell, Walden, Jeansson, Lundqvist, & Marcusson, 2019), and management and entrepreneurship (Alvarez & Busenitz, 2001; Engle et al., 2010; Gieure, Benavides-Espinosa, & Roig-Dobón, 2019; Huang et al., 2019; Kautonen, van Gelderen, & Fink, 2015; Krueger & Carsrud, 1993). Specifically, e-entrepreneurship is a subcategory of entrepreneurship that covers new business models and processes existing in electronic networks (Matlay & Westhead, 2005). E-entrepreneurship has been explored sporadically in developing countries (Kollmann, 2006; Matlay & Westhead, 2005; Quinones, Nicholson, & Heeks, 2015). Quinones et al. (2015) provide a literature review on e-entrepreneurship in the context of emerging economies.

2.1. Role of e-entrepreneurship education and entrepreneurship policy

Although entrepreneurship is a dynamic process involving vision, innovation, collaboration, and change, some facets of entrepreneurship have been systematically researched, studied, and taught in higher education institutions across the globe (Heinonen & Poikkijoki, 2006; Kuratko, 2005; Matlay & Carey, 2007). Kuratko (2005) reviewed the state of entrepreneurship education in the U.S. and reported that there were over 1,600 schools offering more than 2,220 entrepreneurship courses in U.S. universities in 2005. Matlay and Carey (2007) conducted a longitudinal case study on entrepreneurship education in U.K. universities. They reported that the number of universities offering entrepreneurship courses increased over time, and most of the surveyed universities provided entrepreneurship courses at both undergraduate and postgraduate levels in 2004. Unlike its Western counterparts, entrepreneurship education in China was almost nonexistent in the early 1990s (Anderson & Zhang, 2015; Li, Zhang, & Matlay, 2003). As continued economic growth and the emergence of the Internet in China opened up vast opportunities to small businesses and e-entrepreneurs (Huang, 2003; Huang et al., 2019), universities in China started offering entrepreneurship education at the undergraduate level and then the postgraduate level in the 2000s (Anderson & Zhang, 2015; Li et al., 2003).

Gorman, Hanlon, and King (1997) reviewed the literature from 1985–1994 on entrepreneurship education. They found that entrepreneurship education positively influences entrepreneurial attributes and builds awareness of entrepreneurship as an individual's career option. Souitaris, Zerbinati, and Al-Laham (2007) explored the effect of entrepreneurship education on entrepreneurial attitude among science and engineering students. Their results supported that entrepreneurship education positively influences the entrepreneurial attitude, inspiration, and intention of university students. Wu and Wu (2008) studied the view of entrepreneurial education among China's university students using the TPB. They found that there was no significant relationship between entrepreneurial education and entrepreneurial attitude, but entrepreneurial education had a positive effect on entrepreneurial intention. The positive effect of entrepreneurial education on

the entrepreneurial intention of China's university students was supported by Zhang, Duysters, and Cloodt (2014). Fayolle and Gailly (2015) studied the impact of entrepreneurship education on entrepreneurial attitude and intention. Unlike Wu and Wu (2008) and Zhang et al. (2014), Fayolle and Gailly (2015) reported that entrepreneurship education affects European university students' perceived behaviour control and attitude towards entrepreneurial behaviour but not their entrepreneurial intention. Recently, Gieure et al. (2019) showed entrepreneurial skills – an indirect outcome of entrepreneurship education influences entrepreneurial intention directly and indirectly through attitude among university students. On the other hand, Dou, Zhu, Zhang, and Wang (2019) indicated that Chinese students' entrepreneurial attitude and activities are shaped not only by entrepreneurship education but also by entrepreneurship policy and the availability of social environment resources. However, the role of education in e-entrepreneurship has yet to be studied. Hence, we hypothesize the following:

H1a: E-entrepreneurship education influences attitude towards e-entrepreneurship.

H1b: E-entrepreneurship education influences subjective norms.

H1c: E-entrepreneurship education influences perceived behavior control.

Entrepreneurship cannot flourish unless governments and societies help create the right conditions to stimulate people's vision and passion to innovate and find new enterprises (Dou et al., 2019). The conditions may include low start-up costs, access to capital and/or funding agencies, access to technical and market information, counselling and legal advice, and networking opportunities (Dou et al., 2019; Lundström & Stevenson, 2001). Zhang, Peng, and Li (2008) explored the relationship between entrepreneurship policy and technological entrepreneurship using official secondary data from 30 provinces in China and found that regional entrepreneurship policy significantly influences technological entrepreneurship activities. Likewise, Li and Zhang's (2012) investigation revealed that entrepreneurial policy influenced university students' entrepreneurial attitude. Yao, Wu, and Long (2016) studied the effect of social environment, economic environment, and entrepreneurship policy on university students' entrepreneurial intention in China. They found that students' perceived social environment had the most significant effect on entrepreneurial intention, followed by the economic environment. Nevertheless, entrepreneurship policy did not have a direct, significant effect on entrepreneurial intention. In this study, we posit the following:

H2a: Entrepreneurship policy influences attitude towards e-entrepreneurship.

H2b: Entrepreneurship policy influences subjective norms.

H2c: Entrepreneurship policy influences perceived behavior control.

2.2. Components of the TPB

Fishbein and Ajzen (1977) developed the theory of reasoned action – a cognitive model in which an individual's intention and behaviour depend on his/her attitude towards the behaviour and subjective norms. According to Fishbein and Ajzen (1977), attitude towards a behaviour is defined as an individual's favourable feeling towards performing

the behaviour; while subjective norms refer to an individual's perception of social pressure to perform the behaviour. The TPB was the extension of the theory of reasoned action (Ajzen, 1991). It includes perceived behaviour control as an influencing factor of intention and behaviour. Perceived behaviour control refers to the perceived ease (or difficulty) of performing the behaviour. The TPB is one of the most popular socio-psychological theories that explain human intention and behaviour (Ajzen, 1991; Jun & Arendt, 2016).

The TPB has been applied to explain Chinese students' intention to pursue further studies (Gao, 2016; To, Lai, Lung, & Lai, 2014). It has been extended to explain the intention to use mobile technologies and social media technologies among young Chinese consumers (Cheung & To, 2016, 2017; Liang, Ling, Yeh, & Lin, 2013) and online group buying (Yen & Chang, 2015). The TPB was found applicable for explaining university students' entrepreneurial intention in Ukraine (Solesvik, 2013), Germany (Walter & Dohse, 2012), Turkey and the U.S. (Ozaralli & Rivenburgh, 2016), and an international university setting (Gieure et al., 2019). It was also used to explain entrepreneurial intention among working-age adults in Finland (Kautonen et al., 2015; Kautonen, Luoto, & Tornikoski, 2010), Austria (Kautonen et al., 2015) and Spain (Jaén & Liñán, 2013; Miralles, Giones, & Riverola, 2016). Souitaris et al. (2007) studied entrepreneurial intention among university science and engineering students in the U.K. and France. They found that students' attitude towards entrepreneurship, subjective norms, and perceived behaviour control affect entrepreneurial intention. Wu and Wu (2008) investigated the applicability of the TPB to university students in China and found that attitude towards entrepreneurship and perceived behaviour control significantly affected students' entrepreneurial intention. Although the TPB has been applied to predict entrepreneurial intention in developing countries (Engle et al., 2010; Kautonen et al., 2015; Krueger & Carsrud, 1993), its application to young Chinese e-entrepreneurs has yet to be thoroughly studied. Hence, we posit that:

H3: Attitude towards e-entrepreneurship influences e-entrepreneurial intention.

H4: Subjective norms influence e-entrepreneurial intention.

H5: Perceived behavior control influences e-entrepreneurial intention.

Figure 1 shows the theoretical model of this study. Hypotheses 1–5 are shown in this figure.

3. Method

3.1. Context and sample

Macao is the city with the highest gross domestic product per capita in China. It has a land area of 30.8 km^2 and a population of 0.65 million. However, Macao welcomes over 32 million visitors per year because it is one of the most popular destinations in Asia with legalized gaming and cultural heritage (Lai & To, 2015). The city's gross domestic product increased from US$ 6.2 billion in 1999, the year it was reunited with mainland China, to US$ 55 billion in 2018. Its direct taxes from gaming amounted to approximately US$ 13.2 billion, accounting for almost 80 percent of Macao's total government revenue in 2018. However, the government of Macao recognizes that small- and medium-sized

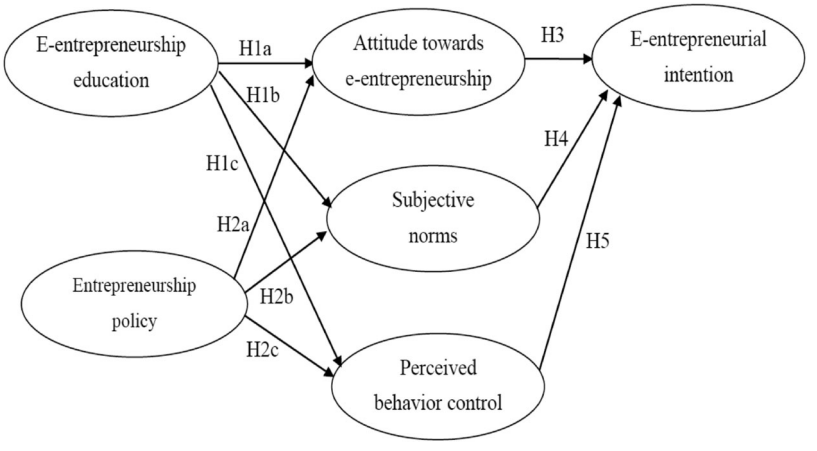


Figure 1. Theoretical model of the study

enterprises (SMEs) also play important roles in supporting the gaming industry, sustaining the local economy, providing job opportunities, and enhancing skill diversity. The government of Macao launched the SME Aid Scheme and urged gaming operators to support SME development (Macau News Agency, 2018). In addition, the government of Macao supports local higher education institutions to offer entrepreneurship programmes and courses and to organize seminars and competitions to stimulate students' entrepreneurial intention. To help Macao diversify its economy, the central government of China also uses the Greater Bay Area Development Plan to drive innovation and encourage Macao's young adults to establish business firms in Hengqin, Zhuhai's special economic zone. Recently, Premier Keqiang Li pledged to grant greater market access for investment from Macao and to promote entrepreneurship that links China to Portuguese-speaking countries under various national policies (The State Council of China, 2018, 2019).

We invited 75 final year business students from a Macao higher education institution to participate voluntarily in the study and asked them to forward an online questionnaire to their young adult friends and relatives in the region. Following the standard ethical research practices, all respondents were assured that their responses would be kept confidential and anonymous. They could withdraw from the survey at any time. In total, 600 questionnaires were distributed from January to March 2018. We targeted final year business students and their young adult friends because they are (or were) facing important career decisions and should have clear visions of their futures (Krueger, Reilly, & Carsrud, 2000).

3.2. Measures

The questionnaire had two sections. The first section included 25 items to measure six constructs, namely, e-entrepreneurship education [EE], entrepreneurship policy [EP], attitude towards e-entrepreneurship [ATT], subjective norms [SN], perceived behaviour control [PBC] and e-entrepreneurial intention [INT]. The six constructs and 25 items are shown in Table 1. The second section of the questionnaire included five questions for demographic information, such as gender, age, education, occupational status, and working experience.

Table 1. Constructs and items [standardized factor loadings (FL), composite reliability (CR), average variance extracted (AVE), and mean ratings (Mean) are shown in this table].

Construct and items	FL	CR	AVE	Mean
E-entrepreneurship education [EE]		0.92	0.68	
Macao organizations have created enough e-entrepreneurship courses and programmes. [EE1]	0.84			2.95
Macao organizations often invite entrepreneurs to talk about e-entrepreneurship. [EE2]	0.85			3.23
Macao organizations regularly organize young people to participate in e-entrepreneurship training. [EE3]	0.85			3.13
Macao organizations frequently organize e-entrepreneurship competitions. [EE4]	0.78			3.33
Macao has comprehensive facilities and centres for e-entrepreneurship training. [EE5]	0.82			2.95
Entrepreneurship policy [EP]		0.94	0.76	
Macao's interest-free young entrepreneurship start-up loan can support people like me to start an e-business. [EP1]	0.87			3.65
Macao's interest-free financial assistance to an entrepreneur can support people like me to run an e-business. [EP2]	0.87			3.61
Macao's tax subsidy can support people like me to run an e-business. [EP3]	0.91			3.70
Macao Young Entrepreneur Incubation Centre provides low and affordable rent that can support people like me to run an e-business. [EP4]	0.84			3.75
Macao has funds and subsidy schemes that can support people like me to run an e-business. [EP5]	0.86			3.85
Attitude towards e-entrepreneurship [ATT]		0.82	0.53	
E-entrepreneurship is attractive to me because it provides opportunities to validate my own ideas. [ATT1]	0.77			3.68
E-entrepreneurship is attractive to me because it provides opportunities to challenge myself. [ATT2]	0.80			3.79
E-entrepreneurship is attractive to me because it provides opportunities for personal achievement. [ATT3]	0.70			3.91
E-entrepreneurship is attractive to me because it provides opportunities for personal independence. [ATT4]	0.62			3.83
Subjective norms [SN]		0.86	0.67	
If I were to start my own e-business, my parents would be supportive. [SN1]	0.86			3.30
If I were to start my own e-business, my relatives would be supportive. [SN2]	0.90			3.25
If I were to start my own e-business, my close friends would be supportive. [SN3]	0.69			3.72
Perceived behaviour control [PBC]		0.78	0.54	
There would be plenty of e-entrepreneurial opportunities if I wanted to start my own e-business. [PBC1]	0.66			3.60
As an entrepreneur, I would have sufficient control over my e-business. [PBC2]	0.71			3.50
There are very few circumstances outside my control that may prevent me from becoming an e-entrepreneur. [PBC3]	0.82			3.00
Intention to start an e-business [INT]		0.91	0.68	
I plan to start an e-business in the future. [INT1]	0.90			3.15
I am determined to create my own e-business even though I will encounter difficulties. [INT2]	0.89			3.15
I intend to start an e-business in the next five years. [INT3]	0.90			2.96
I have very seriously thought about starting an e-business. [INT4]	0.60			3.50
I am ready to do anything to be an e-entrepreneur. [INT5]	0.77			3.02

E-entrepreneurship education refers to programmes, courses, and activities aimed at developing an individual's understanding and knowledge about e-entrepreneurship and e-enterprises (c.f. Heinonen & Poikkijoki, 2006). Five items were developed to measure the extent of the e-entrepreneurship education offered by Macao organizations. Entrepreneurship policy includes government measures and practices to motivate an individual and to create opportunities for an individual to innovate and create his/her enterprise (c.f. Lundström & Stevenson, 2001; Zhang et al., 2008). Five items were developed based on the ideas of Lundström and Stevenson (2001). Attitude towards e-entrepreneurship refers to an individual's positive evaluation of becoming an e-entrepreneur. Four items were developed based on the suggestions from Miralles et al. (2016). Subjective

norms refer to an individual's perception of social pressure to become an e-entrepreneur; to measure it, three items were adapted from Miralles et al. (2016) and Shook and Bratianu (2010). Perceived behaviour control refers to the perceived ease (or difficulty) of starting an e-enterprise; three measurement items were adapted from Solesvik (2013). E-entrepreneurial intention refers to an individual's desire to create an e-enterprise; five measurement items were adapted from Solesvik (2013).

Items were rated using a five-point Likert scale with 1 representing 'strongly disagree' and 5 representing 'strongly agree'. The Cronbach's alpha values were 0.92, 0.94, 0.82, 0.86, 0.77, and 0.91 for e-entrepreneurship education, entrepreneurship policy, attitude towards e-entrepreneurship, subjective norms, perceived behaviour control, and e-entrepreneurial intention, respectively.

3.3. Data analysis procedure

The collected data were input to an IBM SPSS 24.0 data file. Descriptive statistics were used to characterize the demographic profile of the respondents. A number of *t*-tests and analysis of variance tests were conducted to explore whether key demographic variables, such as gender, age, and education, would have effects on the respondents' perceptions and intention. Confirmatory factor analysis was conducted using IBM SPSS AMOS 24.0 with maximum likelihood estimation. The fit of the measurement model was evaluated by examining standardized factor loadings from latent variables to indicator variables and fit indices. The criterion for standardized factor loadings was greater than 0.5 (Nunnally & Bernstein, 1978). The criteria for fit indices included $\chi^2/df \leq 3$, *TLI* and *CFI* ≥ 0.90, and *RMSEA* ≤ 0.08 (Hair, Black, Babin, & Anderson, 2010). This set of criteria was also used to evaluate the fit of the structural model to the collected data.

4. Results

Out of the 600 questionnaires distributed, 220 copies were completed and returned, representing a 36.7 percent response rate. Slightly over half of the respondents (112) were female. Most respondents (165) were between 20 and 25 years old. The majority of respondents (143) had a bachelor's degree or above. Most respondents (137) had a full-time job. Approximately half of the respondents (108) had a work experience of 1–4 years. Table 2 shows the demographic profile of the respondents.

To explore whether demographic variables, such as gender, age, and education, would have effects on the analyses related to our study's objectives, we performed a series of *t*-tests for gender and analysis of variance tests for age and education. The results of analysis of variance tests showed that there were no significant differences in most item scores for different age groups ($p > 0.05$), except for three items, as shown in Table 3. Similarly, there were no significant differences in most item scores for different education backgrounds ($p > 0.05$), except for three items, as shown in Table 4.

The results of *t*-tests showed that there were no significant differences in item scores ($p > 0.05$), except for [INT5], the last item for e-entrepreneurial intention, in which the mean ratings from male and female respondents were 3.19 (SD = 1.17) and 2.86 (SD = 1.19), respectively. This finding is different from previous findings (Zhang et al., 2014; Zhao, Seibert, & Hills, 2005) that women tended to have a lower entrepreneurial intention

Table 2. Demographic profile of respondents ($N = 220$).

Variable	Class	Frequency	Percent
Gender	Male	108	49.1
	Female	112	50.9
Age	<20	29	13.2
	20–25	165	75.0
	26–30	16	7.3
	31 or above	10	4.5
Education	Undergraduate students	77	35.0
	Bachelor's degree	136	61.8
	Masters' degree or above	7	3.2
Occupational status	Student	77	35.0
	Employed	137	62.3
	Unemployed	6	2.7
Work experience (in years)	< 1	77	35.0
	1 to < 2	53	24.1
	2 to < 4	55	25.0
	4 to < 8	20	9.1
	8 or above	15	6.8

Table 3. Mean ratings for items with significant differences among different age groups.

	Age group[a]			
Item	<20	20–25	26–30	31 or above
Macao organizations regularly organize young people to participate in e-entrepreneurship training. [EE3]	3.24 (1.15)	3.18 (1.04)	2.88 (1.15)	2.30 (0.48)
If I were to start my own e-business, my parents would be supportive. [SN1]	2.90 (1.26)	3.45 (1.15)	2.81 (1.33)	2.80 (1.23)
If I were to start my own e-business, my relatives would be supportive. [SN2]	2.97 (1.05)	3.38 (1.08)	2.63 (0.96)	2.90 (1.20)

Note: [a]Values in brackets are standard deviations.

than men some years ago. However, previous studies, such as Zhang et al. (2014), focused on university students in technological programmes, while our survey involved young Chinese adults who were in their final years and some had already graduated from universities and had been working for some years. In fact, female entrepreneurship has increased sharply in China over the past few years (Tse & Tai, 2018).

After inspecting the mean ratings of all items (Table 1) closely, we found that respondents had a relatively positive attitude towards e-entrepreneurship, with a mean value ranging from 3.68 for [ATT1] to 3.91 for [AAT3]. The respondents also agreed that the governments had implemented policies to support e-entrepreneurship because the

Table 4. Mean ratings for items with significant differences among groups of different education backgrounds.

	Education background[a]		
Item	Students	Bachelor's graduate	Masters' or above
Macao organizations have created enough e-entrepreneurship courses and programmes. [EE1]	2.59 (0.88)	3.06 (1.13)	3.29 (1.70)
Macao organizations frequently organize e-entrepreneurship competitions. [EE4]	3.02 (0.92)	3.40 (1.04)	4.00 (1.00)
Macao has comprehensive facilities and centres for e-entrepreneurship training. [EE5]	2.69 (0.91)	3.01 (1.12)	3.86 (0.90)

Note: [a]Values in brackets are standard deviations.

mean ratings for the five [EP] items ranged from 3.61 for [EP2] to 3.85 for [EP5]. Nevertheless, the mean ratings of the four items [INT1], [INT2], [INT3], and [INT5] were found to have no significant differences from a median value of 3.0 (for a five-point Likert scale). Overall, respondents had a relatively positive perception of e-entrepreneurship policy and attitude towards e-entrepreneurship. However, these positive perceptions and attitudes did not easily translate into respondents' intention to start e-businesses.

4.1. Confirmatory factor analysis

Confirmatory factor analysis was conducted using IBM SPSS AMOS 24.0 with maximum likelihood estimation. A six-factor model consisting of e-entrepreneurship education, entrepreneurship policy, attitude towards e-entrepreneurship, subjective norms, perceived behaviour control, and e-entrepreneurial intention produced the following fit indices: $\chi^2/df = 2.14$ ($\chi^2 = 557.6$; $df = 260$; $p < 0.001$), $TLI = 0.91$, $CFI = 0.92$, and $RMSEA = 0.07$, indicating that the six-factor model fitted the data appropriately. We also created a single-factor model by loading all items onto a single latent variable and obtained the following fit indices: $\chi^2/df = 8.34$ ($\chi^2 = 2293.9$; $df = 275$; $p < 0.001$), $TLI = 0.44$, $CFI = 0.48$, and $RMSEA = 0.18$. The change in χ^2 between the six-factor model and the single-factor model was significant ($\Delta\chi^2 = 1736.3$; $\Delta df = 5$; $p < 0.001$), meaning that the six-factor model should be used.

Table 1 shows standardized factor loadings, composite reliabilities, and average variance extracted (AVE) values. All items had standardized factor loadings at or above 0.6, exceeding the threshold of 0.5 (Hair et al., 2010). All constructs had composite reliabilities above 0.78, supporting high internal consistency (Hair et al., 2010). The AVE values of all constructs ranged from 0.53–0.76, exceeding the threshold of 0.5 (Fornell & Larcker, 1981) and supporting convergent validity.

Table 5 shows the square root values of the AVEs and inter-construct correlations. It demonstrates that the square root of the AVE of each construct was greater than the inter-construct correlations between the construct and other constructs, implying discriminant validity (Fornell & Larcker, 1981). Taken together, the results of confirmatory factor analysis supported the fit of the six-factor model to the collected data. Additionally, the constructs we used in the study had high internal consistency, adequate convergent validity, and discriminant validity.

4.2. Structural equation modelling

Structural equation modelling was also conducted using IBM SPSS AMOS 24.0 with maximum likelihood estimation. The results of structural equation modelling indicated

Table 5. The means, standard deviations (SD), and inter-construct correlations.

Construct	Means	SD	EE	EP	ATT	SN	PBC	INT
EE	3.12	0.92	***0.83***					
EP	3.71	0.92	0.50***	***0.87***	***0.73***	***0.82***	***0.73***	***0.82***
ATT	3.80	0.78	0.42***	0.58***	0.33***	048***	0.71***	
SN	3.42	0.96	0.43***	0.39***	0.55***	0.53***		
PBC	3.37	0.87	0.55***	0.40***	0.42***			
INT	3.15	1.02	0.47***	0.39***				

Notes: **$p < 0.01$; ***$p < 0.001$; values on the diagonal in bold and italics are the square roots of AVE values.

that most of the paths shown in Figure 1 were significant ($p < 0.01$), except that attitude towards e-entrepreneurship did not have a significant effect on e-entrepreneurial intention ($\beta = 0.07$, *n.s.*). To obtain a parsimonious model, we removed the link between attitude towards e-entrepreneurship and e-entrepreneurial intention and obtained the final structural model. The final structural model produced the following fit indices: $\chi^2/df = 2.40$ ($\chi^2 = 640.2$; $df = 267$; $p < 0.001$), $TLI = 0.89$, $CFI = 0.90$, and $RMSEA = 0.08$, implying that the model marginally fitted the data. The structural model indicated that e-entrepreneurship education and entrepreneurship policy positively and significantly influenced people's attitude towards e-entrepreneurship, subjective norms, and perceived behaviour control, as shown in Figure 2. E-entrepreneurial intention was affected by perceived behaviour control ($\beta = 0.59$, $p < 0.001$) and subjective norms ($\beta = 0.29$, $p < 0.001$) but not by people's attitude towards e-entrepreneurship. Hence, Hypotheses 1, 2, 4 and 5 were supported, and hypothesis 3 was not supported. The final model could explain 51 percent of the observed variance for e-entrepreneurial intention. Table 6 summarizes the direct, indirect, and total effects between different factors.

The results of structural equation modelling showed that e-entrepreneurship intention, i.e. the intention to start e-businesses, was heavily shaped by perceived behaviour control, followed by e-entrepreneurship education and subjective norms, as indicated by the total effect shown in Table 6. E-entrepreneurship policy, on the other hand, played a less important role in shaping respondents' e-entrepreneurial intention, while attitude towards e-entrepreneurship was found to have no significant effect on entrepreneurial intention. The two policy-level factors, namely, e-entrepreneurship education and e-entrepreneurship policy, moderately affected perceived behaviour control and subjective norms and thus influenced e-entrepreneurship intention. These findings were similar to those reported by Ridha, Burhanuddin, and Wahyu (2017), who suggested that attitude had no significant effect on youth entrepreneurial intention in Indonesia, and Wu and Wu (2008), who found entrepreneurial education to have a positive effect on entrepreneurial intention among China's university students.

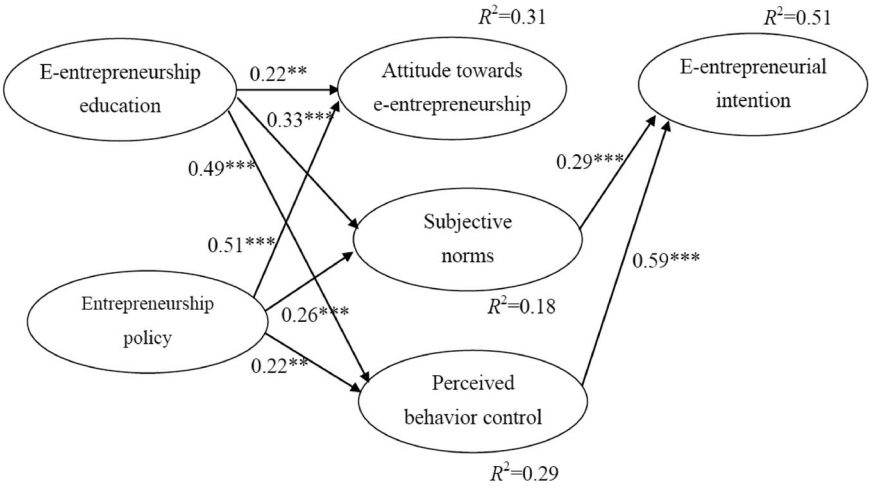


Figure 2. The final structural model. Note: ** $p < 0.01$; *** $p < 0.001$

Table 6. Direct, indirect, and total effects between different factors.

Path	Direct effect	Indirect effect	Total effect
EE → ATT	0.22	0	0.21
EP → ATT	0.51	0	0.51
EE → SN	0.33	0	0.33
EP → SN	0.26	0	0.26
EE → PBC	0.49	0	0.49
EP → PBC	0.22	0	0.22
EE → INT	0	0.39	0.39
EP → INT	0	0.21	0.21
PBC → INT	0.59	0	0.59
SN → INT	0.29	0	0.29

5. Discussion and implications

The advents of technology and globalization have contributed to a paradigm shift in commerce. In China, for example, there has been an eruption of e-businesses, which has stimulated the development of e-entrepreneurship education and policy development (Millman, Li, Matlay, & Wong, 2010). Figure 2 and Table 6 attempt to explicate this phenomenon. From the theoretical perspective of the TPB, the following sections discuss the influences of different factors on the e-entrepreneurial intentions of Chinese young adults and the related implications.

5.1. Perceived behaviour control and e-entrepreneurial intention

The study suggested that perceived behaviour control has the greatest impact on e-entrepreneurial intentions of young Chinese adults. Starting an e-business is perceived as high-risk, high-reward. However, perceived behaviour control varies notably according to the situation. For example, over the past years, the advent of technology, especially the growth of the Internet, has provided efficient and effective ways to establish a business in the Internet economy (Kollmann, 2006). According to Kollmann (2006), new business concepts founded on information and communication technology (ICT) have made it easier to start new e-ventures.

5.2. Subjective norms and e-entrepreneurial intention

The e-entrepreneurial intentions of Chinese young adults, as indicated by the study, are also influenced by subjective norms or social pressure. Subjective norms are driven by what others are doing. As one observes others creating, developing, and finding success in the online space, the observer realizes this is possible, given a like-minded approach, similar intelligence level, and so forth (Spencer, Harding, & Sheahan, 2014). Currently, the Internet suggests that one can establish a business online and hold a probable presence, regardless of past limitations. Thus, expectations are stronger as the Internet has created this common ground for potential entrepreneurs to work either together or alone, but all create and contribute to the online environment.

There is social pressure to perform among Chinese. Peers are increasingly pushing others to join them in the creation and pursuit of goals in the e-commerce space. Within the education sector, young Chinese, who represent the largest percentage of

ICT adopters, believe that entrepreneurship is a norm in society. In the Chinese education system, entrepreneurship has a high degree of popularity. Most students enrolled in e-entrepreneurship courses because their families and peers pushed them to take up the course (Millman, Wong, Li, & Matlay, 2009).

5.3. Attitude and e-entrepreneurial intention

The study suggested that attitude (towards e-entrepreneurship) has no significant impact on the intent of the individual. This is an interesting finding that deserves more explanation and enhanced exploration.

Attitude aligns with intent for a purposeful activity, whether for getting out of bed in the morning or for saving up to purchase a home. However, the causal relationship between attitude and intention may not be applied to e-business startups, especially under pragmatic Chinese culture. Attitude (or personal feeling) will not stand in the way of starting a business. One can have poor feelings or negative emotions and still have strong intention towards starting up a business (Beranek, 2015). An entrepreneur will push his/her feelings aside and focus on the elements of success within the work environment, where the favourable outcomes are the end goal, not the short-term feelings or emotions. Understanding and managing emotions are crucial for business judgment. Here, the entrepreneur finds success in achieving goals and is able to step away from feelings and focus on building the brand (Beranek, 2015). This management of attitudes divides young entrepreneurs. Those who are business-minded and – driven can remove their personal attitude (should it be positive or negative) from the equation. Alternatively, those who become overwhelmed by feelings will find it more difficult to achieve success and will struggle to start an e-business or even become involved in the business environment. In alignment with Chien, Hu, Reimers, and Lin (2007) and Huang (2008), the study demonstrated that subjective norms outweighed the effect of attitude on entrepreneurial intention and that feeling will have an insignificant impact on starting an e-business.

5.4. Education and e-entrepreneurial intention

The current education system exacerbates the drive and the desire of young Chinese to start an e-enterprise. In entrepreneurship education, students are encouraged to adopt innovation-oriented solutions to job creation, improved employment structures, progress in technology, and even creating new industries (Li & Li, 2014). According to Li and Li (2014), Chinese higher education institutions have begun to promote entrepreneurship education as the most important tool for comprehensively improving the lives of people. In that regard, universities, such as the Beijing University of Aeronautics and Astronautics, and Tsinghua University, have continuously offered entrepreneurship education since 2002.

In China, many entrepreneurs have limited knowledge of modern business management; nevertheless, these people still boldly take the risk of starting their own businesses without postsecondary education (Tse, 2016). Therefore, China's Ministry of Science and Technology has supported '… 115 university science parks and over 1,600 technology business incubators […] providing mentorship, legal advice, and office space to dreamers and aspiring entrepreneurs' (Tse, 2016). Entrepreneurship education has aided the desire

to broaden and adopt knowledge on cross-border best business practices. Together, government and nongovernmental organizations utilize education and training to equip, guide, and support Chinese college students with entrepreneurial knowledge and skill to realize their business dreams (Mok & Kan, 2013). With such overwhelming support from the education system, young Chinese are motivated to establish virtual businesses.

5.5. Government policy and e-entrepreneurial intention

In addition to higher education, Chinese national policies, such as Internet Plus (Wang, Chen, Guo, Yu, & Zhou, 2016) and Cross-Border E-Commerce Policy (Wong, 2019), further motivate young people to develop e-entrepreneurial intentions. For the past decade, mass entrepreneurship and innovation (Tse, 2016) have been the leading agenda of China's national economic strategy.

In 2015, China's Premier Keqiang Li announced the action plan of Internet Plus, which would integrate mobile Internet, big data, cloud computing, and advanced manufacturing technologies with the aim of encouraging the development of e-commerce, e-health, e-government, and the Internet of things. He also suggested that 'mass entrepreneurship and innovation' are key components for achieving a 'better-quality, more efficient, upgraded economy' (Ma, Wang, & Cheung, 2018). 'Since then, many young entrepreneurs have created their own e-commerce services to capitalize on emerging opportunities under favourable policy conditions. Specifically, the concept of Internet Plus has revolutionized starting a business in various sectors. To successfully operate in the Internet economy, an entrepreneur leverages information technology, information societies, and information economy for value, production, and profit (Kollmann, 2006).

In early 2019, the State Council of China established new policies to stimulate cross-border e-commerce (Wong, 2019). According to Wong (2019), the Ministry of Finance included an additional 63 product categories in the list of duty-free cross-border e-commerce products. The tax-free quota, along with government assistance, is intended to incentivize e-entrepreneurs to invest in cross-border e-commerce and grow their income. According to KPMG (2018), the cross-border e-commerce policy has demonstrated the ability to develop healthy and regulated trade to promote fairness among all entrepreneurs. Young Chinese with low capital and income find such policy a motivational factor to establish individual e-enterprises.

6. Conclusion

E-entrepreneurship education and policy have an impact on young Chinese starting up e-businesses. These factors have the capacity to influence individual attitude, subjective norms, and perceived behaviour control in light of e-businesses. However, the study's findings showed that only subjective norms and perceived behaviour control have influence on e-entrepreneurial intention. Yet with motivation, augmented by social acceptance and the ease of establishing e-business in China, it is likely that e-entrepreneurship will become a common phenomenon among young adults.

E-business is the wave of the present. Perhaps no country is adopting this principle more than China. E-entrepreneurship or building a brand in the online environment has become typical of youth. The idea is to create and develop, rather than follow and

assimilate to an already-established organizational culture. The Internet trade is vast, diverse, and infinite in terms of demand, given a suitable approach. The blue oceans for young Chinese entrepreneurs are found online, where e-business is both the present and the future, particularly for youth who have moved beyond the idea of working for someone else.

6.1. Limitations of the study

Nevertheless, the study has two major limitations. First, this was a cross-sectional study, and only young Chinese adults were invited to participate in the survey. Hence, the study's findings should be generalized with great caution. As time passes and governments in this region continually provide more incentive schemes and support for entrepreneurship, young Chinese adults are more likely to establish their own business ventures, including e-business ventures, to seize opportunities. Second, the data were collected from self-administered paper and online questionnaires, and common method bias could cause concerns. Nevertheless, we performed Harman's one-factor test, in which all measurement items were included in a factor analysis. The results of the unrotated solution showed that six factors could be extracted to explain 75.6 percent of the total variance. Additionally, the first factor explained 38.8 percent of the total variance, implying that common method bias was not a problem.

Disclosure statement

No potential conflict of interest was reported by the authors.

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