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Entrepreneurial education, government policies and programmes, and entrepreneurial behaviour: A serial moderated mediation model

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ABSTRACT

Objective: The research aims to adopt a serial moderation mediation model to investigate the serial indirect effects of entrepreneurial education and the moderation impacts of entrepreneurial government policies and programmes on entrepreneurial attitude-intention-behaviour links and tighten the attitude-intention-behaviour gap in the entrepreneurial area.

Research Design & Methods: A sample of 802 master students from nine universities/institutions in Vietnam and structural equation modelling (SEM) were employed to test developed hypotheses.

Findings: The research demonstrates that attitude towards entrepreneurship played a more important role than entrepreneurial intention in sculpting start-up behaviour. Entrepreneurial education not only has direct effects on entrepreneurial attitudes and behaviours, but it also has serial mediation effects on entrepreneurial behaviour via two mediators, including entrepreneurial attitudes and intention. Moreover, entrepreneurial government policies and programmes were found to significantly reinforce the entrepreneurial attitude-intention-behaviour linkages.

Implications & Recommendations: The findings of this research offer valuable insights for policymakers and practitioners who wish to encourage individuals' entrepreneurial activities.

Contribution & Value Added: The research is expected to significantly contribute to entrepreneurship literature by indicating the serial mediation effects of entrepreneurial education on entrepreneurial behaviour, the moderation impacts of entrepreneurial government policies and programmes, and closing the entrepreneurial attitude-intention-behaviour gap.

Article type:	research article
Keywords:	entrepreneurial behaviour; entrepreneurial intention; entrepreneurial education; government policies and programmes; start-up;
JEL codes:	L26, M13

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INTRODUCTION

Nowadays, new business venture creation has received widespread interest among scholars, educators, practitioners, and policymakers, because it has been determined as the crucial factor that contributes to the social and economic development of a nation (Bach *et al.*, 2022; Laouiti *et al.*, 2022; Skalická *et al*., 2023). Thus, entrepreneurial education and entrepreneurial government policies and programmes have been advanced as important strategies to inspire individuals' entrepreneurial activities (Cong *et al.*, 2022; Duong, 2021; Elnadi & Gheith, 2021;). While entrepreneurial education inculcates start-up knowledge and practical start-up skills in students' minds, thereby

inspiring them to engage in entrepreneurial preferences (Maheshwari & Kha, 2021; Court & Arikekpar, 2022; Uansa-ard & Wannamakok, 2022), entrepreneurial government policies and programmes can help foster the conversion of entrepreneurial attitude into start-up intentions and then turn into actual entrepreneurial behaviours (Salisu, 2020).

The decision to create a new business venture, which is identified as the heart of the entrepreneurial process, is affected by a body of different factors (Duong, 2022; Maheshwari & Kha, 2021; Civelek *et al*., 2021a). Indeed, while some studies argue that entrepreneurial behaviour is affected by personal perception, such as entrepreneurial fear of failure (Duong, 2022), and big-five personality traits (Laouiti *et al.*, 2022), others claim that it is influenced by environmental and contextual factors, such as university entrepreneurial environment (Calza *et al.*, 2020), and organizational and environmental factors (Meoli *et al.*, 2021) and cultural values (Calza *et al.*, 2020). However, almost all current studies state that entrepreneurial attitude and intentions are considered the most important predictors of entrepreneurial behaviour (*e.g*., Calza *et al.*, 2020; Cui & Bell, 2022; Duong, 2022).

Even though the direct effect of entrepreneurship education on start-up attitudes and intentions has been considered in recent studies (*e.g*., Duong, 2021; Maheshwari, 2022; Maheshwari & Kha, 2021), we have little knowledge about how it had a serial indirect effect on entrepreneurial behaviour via two mediators, such as entrepreneurial attitudes and intentions. Moreover, entrepreneurial government policies and programmes relate to the provision of essential resources based on the governments' capacity to offer the necessary support for fostering entrepreneurial activities, such as establishing and developing favourable entrepreneurial ecosystems, financial funding programmes, removing and decreasing the barriers for nascent entrepreneurs (Elnadi & Gheith, 2021). Yet, the critical role of entrepreneurial government policies and programmes on the start-up process, which started from a favourable attitude towards engagement in entrepreneurial activities to developing entrepreneurial intention, and then becoming actual start-up behaviour, seems to be neglected by previous studies (Androniceanu *et al.,* 2022; Nguyen, 2021; Salisu, 2020).

Therefore, this research aims to adopt a serial moderated mediation model to make theoretical contributions to the present literature in the entrepreneurial area. Firstly, our research is among the first to estimate the serial indirect influence of entrepreneurial education on entrepreneurial behaviour via two mediators, including attitude towards involvement in entrepreneurial activities and intention to become entrepreneurs. Secondly, this research closes the entrepreneurial attitude-intention-behaviour gap in the entrepreneurship area. Finally, the research tests the moderating impacts of entrepreneurial government policies and programmes on the entrepreneurial attitude-intention-behaviour linkage.

LITERATURE REVIEW

New Venture Creation: The Attitude-intention-behaviour Gap

Although originating in social psychology, intention-based models have been widely adopted in entrepreneurship studies (Adelowo *et al.*, 2021). Based on these models, future behaviour can be predicted, which is essential, not only for managers and economic analysts but also for policymakers in charge of developing an adequate supporting system in favour of entrepreneurship. The concept of general behavioural intention has been applied to the analysis of entrepreneurial intentions, defined by Thompson (2009) as a self-perceived belief that one intends to create a new firm and consciously plans to complete this process in the future. Very similarly, Krueger (1993) defines start-up intention as the inclination and possession of the potential to create one's own business. In our research, the concept of entrepreneurial behaviour has been adapted from the research of Gieure *et al.* (2020), which means that start-up behaviour refers to the capacity or knowledge about an enterprise's constituent dimensions. It is regarded as an individual's know-how and essential understanding that will enable him/her to carry out entrepreneurial actions. Thus, it reflects the attained ability and knowledge that can drive a potential entrepreneur to the stage of developing a business and trying to create a new venture (Duong, 2022; Dankiewicz *et al*., 2020).

Using the theory of planned behaviour (TPB) developed by Ajzen (1987; 1991), which is a grounded psychological concept that dates back to the 1980s, enables us to comprehend mechanisms that drive

the entrepreneurial intentions of a person. Following Ajzen's (1987) concept, an individual's behaviour is predicted by their behavioural intention and their behavioural intentions originated from three antecedents: (i) what attitude individuals have towards performing a specific action, (ii) what perception individuals have regarding controlling of a particular action, and (iii) the social norms that mould the perception of the specific action. Two factors, namely the attitude we have towards the behaviour (or rather the outcomes associated with the behaviour) and our perception of social norms towards the behaviour, capture the desirability of the behaviour occurring. On the other hand, the third factor expresses personal perceptions of the ability to control the behaviour and is synonymous with self-efficacy. The TPB is reported to be one of the most popular theoretical conceptualizations of entrepreneurial intentions. Most prior studies only endeavoured to explain the determinants of entrepreneurial intentions (Duong, 2021; Maheshwari, 2022). That is a reason why the entrepreneurial attitude-intention-behaviour gap existed in the entrepreneurship field (Duong, 2022; Wach & Bilan, 2021) and why scholars called for further studies to close this research gap (Cui & Bell, 2022). However, meta-analysis and longitudinal studies, which relied on the TPB framework, illustrate that attitudes and behavioural intentions can explain around 30-40% of the variation of actual behaviour (Ajzen, 2020).

Previous empirical studies in various areas, including entrepreneurship, produced evidence that supported the prediction of intention about behaviour. Kautonen *et al.*, (2015) demonstrated the relevance of TPB in predicting business start-up intentions and subsequent behaviour based on longitudinal survey data. Some recent studies also showed that intention is an important predictor of entrepreneurial behaviour (Cui & Bell, 2022; Duong, 2022). Additionally, although the TPB suggests that entrepreneurial intention depends on these three mentioned variables (entrepreneurial attitude, subjective norms, and perceived behavioural control), most empirical studies found that entrepreneurial attitude was the strongest predictor of entrepreneurial intention (Duong, 2022). When individuals have a favourable attitude towards entrepreneurship, they increase their intention to start a business (Meyer & Krüger2021).

The relationship between attitude and entrepreneurial intention has been confirmed in many previous studies (*i.e.*, Duong, 2022, Nowiński *et al.*, 2020, Wach & Głodowska, 2019). However, the nexus between attitude and entrepreneurial behaviour has not received much attention. There is little knowledge about how a positive entrepreneurial attitude translates into entrepreneurial behaviour (Duong, 2022). According to the TPB (Ajzen, 1991), attitude towards behaviour is assumed as a function of behaviour belief. It means that when an individual believes that the expected outcome of a specific behaviour is valuable, they have a favourable attitude towards that behaviour, and therefore the likelihood of engaging in that behaviour is higher. Similarly, when individuals perceive that entrepreneurship may bring them the potential for higher outcomes, their attitude toward engaging in entrepreneurial activities becomes more favourable, leading to an increase in entrepreneurial behaviours (Duong, 2022; Valinurova *et al*., 2022). Based on this argument, we hypothesize that entrepreneurial behaviour is significantly related to entrepreneurial attitude and intention. Moreover, the entrepreneurial intention is significantly correlated with attitude towards entrepreneurship.

H1: Entrepreneurial intention has a significant impact on entrepreneurial behaviour.

H2: Attitude towards entrepreneurship has a significant impact on entrepreneurial intention.

H3: Attitude towards entrepreneurship has a significant impact on entrepreneurial behaviour.

The Role of Entrepreneurial Education

Education in general and entrepreneurship education in particular play a crucial role in fostering entrepreneurial attitudes, entrepreneurial skills, entrepreneurial competencies, and entrepreneurship culture. Thus, many countries have made entrepreneurial efforts in recent years to promote entrepreneurship as a specific course taught at all educational levels, from the primary level (pupils up to the age of 14) to the university level (undergraduate and postgraduate students), with a particular focus on research and doctoral studies in entrepreneurship (third level) (Wach & Głodowska, 2019). In this respect, both Europe and Asia are lagging behind North America (the USA in particular), where entrepreneurship education has been implemented into secondary education curricula and the majority of American uni-

versities offer compulsory or optional entrepreneurship courses (Guzmán & Liñán, 2005; Andronicean*u et al.,* 2021). However, entrepreneurship education is facing contemporary civilization challenges, including economic challenges and facing new trends in green entrepreneurship and climate protection (Alvarez-Risco *et al.* 2021). To some extent, the challenging issues in entrepreneurial activity are covered within entrepreneurial systems of managerial training (Mishchuk *et al*., 2022), particularly, due to the reason of lack of entrepreneurial knowledge, sometimes even for the business owners (Civelek *et al.*, 2021b; Devkota *et al*., 2022). However, these activities are not a substitute for university entrepreneurship education. The educational systems of many countries require the intensification of economic education and this issue is raised by a growing number of experts and researchers.

The experiences of the recent global financial crisis, the debt crisis in Europe, and finally the Covid-19 pandemic only confirm the too-low economic awareness of the society. Entrepreneurial education is dominated by economics, but this should be viewed positively rather than negatively. The economic content of education should in no way be eliminated or reduced. The ongoing crisis and media coverage of numerous cases of the gullibility of the public towards dishonest entrepreneurs and investors unambiguously confirm the urgent need to educate the public precisely in the field of economic knowledge. Of course, non-economic entrepreneurial education (such as various soft skills, creativity, initiatives, or emotional competencies) should be expanded but not at the expense of economic education. Very recently, the global Covid-19 pandemic has changed the landscape and shape of remote education and e-learning, especially in favour of entrepreneurship (Głodowska *et al.*, 2022). The next step, important to ensure the implementation of the set priorities, is to define the content of entrepreneurship education. It should be stressed that entrepreneurship cannot be understood only as the ability to start and run one's own business or as synonymous with the small and medium-sized enterprises (SMEs), which is very often the case. Noteworthy, entrepreneurship education should ensure the acquisition of knowledge and practical skills in starting and running a business and shaping entrepreneurial attitudes, creativity, and innovation (Wach & Bilan, 2022). On the one hand, specialized academic courses should therefore provide interdisciplinary knowledge about starting and running a business (economics, management, finance, marketing, law). On the other hand, they should support students' ideas related to business activity, *e.g.* promote the 'entrepreneurship spirit' in contemporary society (Basuki *et al.* 2021; Wach & Głodowska, 2019).

Guzmán and Liñán (2005) distinguish four categories of education for entrepreneurship, namely education to promote self-employment as an alternative career, start-up education, further education for mature entrepreneurs and education for entrepreneurial dynamism which shapes entrepreneurial attitudes such as own initiative, creativity, inventiveness or innovativeness in the workplace and in one's own business. Therefore, entrepreneurship education plays an important role in the development of entrepreneurs and is one of the most basic tools to improve attitudes towards entrepreneurship (Cui & Bell, 2022). Activities in the entrepreneurship education programme help arouse emotions and trigger events that change students' minds leading to a positive attitude towards entrepreneurship (Duong, 2021). Therefore, they enhance the intention and behaviour to start a business. Additionally, Cui and Bell (2022) argue that entrepreneurial educational activities not only have direct impacts on entrepreneurial intention and actual start-up behaviour, but they also have an indirect effect on entrepreneurial behaviour via a behavioural entrepreneurial mindset. Moreover, entrepreneurial intention can act as a mediator in the relationship between entrepreneurial education activities and start-up behaviour. Indeed, entrepreneurial education can foster the conversation of a positive attitude towards corporate emergence and the intention to become an entrepreneur into an actual start-up action (Duong, 2022; Maheshwari & Kha, 2021). Experiencing the process of equipping students with knowledge and ability regarding organizational emergence, students often tend to behave based on their target in their mind to apply equipped knowledge and skills (Maheshwari, 2022). Thus, in this study, entrepreneurial education can be significantly associated with entrepreneurial behaviour. It is hypothetical whether entrepreneurial education can have an indirect influence on entrepreneurial intention and behaviour via attitude towards entrepreneurship and whether it has serial mediation effects on entrepreneurial behaviour via two mediators (attitude towards entrepreneurship and intention to engage in entrepreneurial action) in the context of Vietnam.

H4: Entrepreneurial education has a significant impact on (a) attitude towards entrepreneurship, (b) entrepreneurial intention, and (c) entrepreneurial behaviour.

H5: Entrepreneurial education has an indirect impact on entrepreneurial intention via attitude towards entrepreneurship.

H6: Entrepreneurial education has an indirect impact on entrepreneurial behaviour via attitude towards entrepreneurship.

H7: Entrepreneurial education has an indirect impact on entrepreneurial behaviour via entrepreneurial intention.

H8: Entrepreneurial education has an indirect impact on entrepreneurial behaviour via attitude towards entrepreneurship and entrepreneurial intention.

Role of Entrepreneurial Government Policies and Programmes

(The importance of the interaction between people's characteristics and their surrounding environment has been increasingly interested in recent studies because this interaction extensively influences various perspectives of entrepreneurial activities (Elnadi & Gheith, 2021). Many scholars have emphasized the importance of investigating entrepreneurial activities from wider settings, including government policies and programmes for entrepreneurship in different countries or regions (Duong, 2021; Nowiński *et al.*, 2020; Wach & Bilan, 2021; Zygmunt, 2020; Bag & Omrane, 2021). Indeed, a study in Vietnam proved that the regulatory dimension of the environment negatively influenced entrepreneurial intention while the normative dimension of the environment positively fostered the entrepreneurial intentions of graduate students (Duong, 2021). Nowiński *et al.* (2020) also emphasize that entrepreneurial intentions are shaped by various institutional factors, including governmental policies and programmes. However, almost all these studies only examine the direct relationship between entrepreneurial governmental policies and programmes or entrepreneurial ecosystems and entrepreneurial intentions, few studies have considered whether these policies and programmes can increase or weaken the transition from entrepreneurial attitudes into entrepreneurial intention and behaviour or not (Meoli *et al.*, 2020).

Entrepreneurial government policies and programmes refer to the support and provision of necessary resources for new business venture creations within the capacity of the government to enforce entrepreneurial activities (Ahmad & Xavier, 2012; Łasak, 2022). Salisu (2020) argues that policies and programmes for entrepreneurship offered by the government can promote and encourage entrepreneurial activities However, we still do not know how entrepreneurial government policies and programmes can moderate the entrepreneurial attitude-intention-behaviour links. Previous studies showed that the start-up attitude-intention-behaviour links can be increased or decreased by different factors, such as Covid-19-related psychological distress (Duong, 2022), entrepreneurial fear of failure (Duong, 2022), and cultural values (Calza *et al.*, 2020). In the context of the emerging economy in Vietnam, it is hypothetical that entrepreneurial government policies and programmes can positively moderate the entrepreneurial attitude-intention-behaviour links among master students. When government policies and programmes are more favourable for entrepreneurship, individuals with positive entrepreneurial attitudes are more likely to intend to start a business and display entrepreneurial behaviour. Likewise, when government policies and programmes for entrepreneurship are better, individuals are more likely to implement their entrepreneurial intention, therefore the relationship between entrepreneurial intention and behaviour is stronger.

H9: Government policies and programmes moderate the relationships between (a) attitudes towards entrepreneurship and entrepreneurial intention; (b) attitudes towards entrepreneurship and entrepreneurial behaviour; and (c) entrepreneurial intention and entrepreneurial behaviour, to such an extent that when government policies and programmes for entrepreneurship are better, the linkages between attitudes towards entrepreneurship, entrepreneurial intention and entrepreneurial behaviour become stronger.

Therefore, based on the abovementioned arguments and the research gap, the theoretical model has been developed and illustrated in Figure 1.

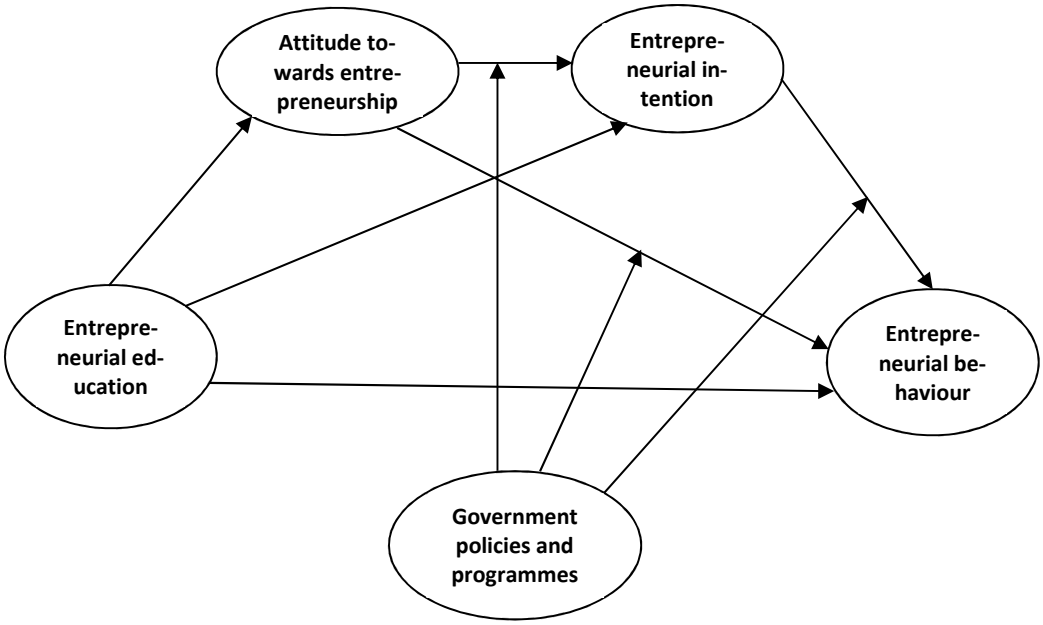


Figure 1. The theoretical model
Source: own elaboration.

RESEARCH METHODOLOGY

Data Collection and Sample

Almost all previous studies on entrepreneurship adopted the student sample rather than real entrepreneurs in their studies (Duong, 2022), because students are considered as the population which has a high inclination towards new business venture creations (Maheshwari & Kha, 2021). Moreover, to examine the impacts of entrepreneurship education on entrepreneurial attitude-intention-behaviour links, student samples are more appropriate rather than others (Maheshwari, 2021). However, most undergraduate students lack real business experiences, which can lead to bias in examining entrepreneurial behaviour. Consequently, master's students, who had work and business experiences, have been selected as a targeted sample in our study.

Table 1. Socio-demographic profile of participants

Variables	Criteria	Frequency	%
Gender	Male	521	65.0
	Female	281	35.0
Age	From 22 to 25 years old	21	2.6
	From 26 to 28 years old	390	48.6
	Over 28 years old	391	48.8
Fields of education	Economics and business management	502	62.6
	Engineering and others	300	37.4
Business experiences	Yes	339	42.3
	No	463	27.7
Family business background	Yes	329	41.0
	No	473	59.0

Note: N=802.
Source: own study.

Data has been collected during the second semester of the academic year 2021-2022. The data were collected in four stages of the stratified random sampling approach. Firstly, three historical and geographic major regions of Vietnam were selected to recruit the data. Secondly, the authors classified

universities into two groups: public and private universities. In each region, one private and two public universities were randomly selected. A total of nine universities and institutions were selected to collect the data. Thirdly, lecturers who hold PhD degrees at these universities/institutions were asked for support during the data collection. Finally, with the support of lecturers, we delivered the questionnaire survey to master students. They were clearly informed that their participation was completely voluntary and their responses were confidential. In total, 1500 questionnaires were delivered, however, only 861 students fulfilled the questionnaires while 59 questionnaires contained missing values. To avoid bias, we decided to delete them from the final sample, which included 802 responses. Table 1 illustrates the demographic information of master's students.

Measures and Questionnaire Development

All measures used in this research were developed and validated by prior studies. Especially, the seven-item construct measured for "EB: entrepreneurial behaviour" was adjusted from Gieure *et al.* (2020) (*i.e.*, "I have experience in starting new projects or business," and "I already save money to invest in a business"). The six items measured for "EI: entrepreneurial intention" was adopted from Liñán and Chen (2009) (*i.e.*, "my professional goal is to become an entrepreneur." The five-item construct, which reflects "EE: entrepreneurial education," was adapted from Walter and Block (2016) (*i.e.*, "my school education has equipped me with the necessary abilities and expertise to start my own business"). Finally, the eleven-item scale of "GPP: entrepreneurial government policies and programmes" was taken from the study of Ahmad and Xavier (2012) (*i.e.*, "In my country, the support for new and growing firms is a high priority for policy at the national government level." All items were marked in a seven-point Likert format, which began from 1 (strongly disagree) to 7 (strongly agree). Detailed items were presented in Table 2. To avoid common method bias, a two-way translation from the original scale in English into the Vietnamese language was carried out by two language experts. Additionally, all items were mixed in the questionnaires to avoid bias during the response process.

Analysis Strategies

Structural equation modelling (SEM) was performed in our study to test the direct, indirect, and moderating effects of entrepreneurial education and entrepreneurial government policies and programmes on the entrepreneurial attitude-intention-behaviour links. However, before carrying out SEM analysis, the reliability and validity of all scales have been examined via Cronbach's alpha and confirmatory factor analysis (CFA) (Hair *et al.*, 2020). Additionally, Gaskin's (2019) plugin with 5000 bootstrapping samples was used to test indirect and serial mediation effects as suggested by Hayes and Matthes (2009).

RESULTS AND DISCUSSION

Measurement Model

Upon examining the appropriateness of the data and the validity and reliability of constructs in the conceptual framework before testing hypotheses, both Cronbach's alpha and CFA were simultaneously carried out in our study. Firstly, Cronbach's alpha of all variables was higher than the cut-off value and amounted to 0.63 (Hair *et al.*, 2020) (Table 2). Second, CFA results also reported that the five-factor measurement model with 36 items represented a great fit: $\chi^2(500) = 1383.495$; $\chi^2/df = 2.767$; $p < 0.001$; GFI = 0.903; AGFI = 0.885; CFI = 0.972; TLI =0.968; NFI = 0.956, and RMSEA = 0.047 (Hair *et al.*, 2020; Szostek *et al*., 2020; 2022) (Figure 2). Moreover, Figure 2 showed that the standardized regression weights of all items were much higher than the cut-off values of 0.5 (Nguyen *et al.*, 2022).

Table 2 illustrates the Pearson correlation matrix, composite reliability (CR), average variance extracted (AVE), and the square roots of AVE of all variables. AVE and CR values were higher than the threshold value of 0.5 and 0.7, respectively. Moreover, maximum shared variance (MSV) values of all variables were found to be lower than their AVEs while all values of correlation coefficients were less than their square root of AVE (in bold). Thus, the reliability and validity of all scales were demonstrated and appropriate for processing to test hypotheses.

Table 2. Correlation coefficients matrix, the reliability and validity of scales

	α	CR	AVE	MSV	EB	GPP	EI	EE	ATE
EB	0.918	0.916	0.613	0.420	**0.783**	–	–	–	–
GPP	0.972	0.971	0.750	0.307	0.258**	**0.866**	–	–	–
EI	0.962	0.959	0.798	0.750	0.621**	0.331**	**0.893**	–	–
EE	0.954	0.951	0.797	0.366	0.472**	0.516**	0.510**	**0.893**	–
ATE	0.944	0.946	0.779	0.750	0.614**	0.372**	0.826**	0.578**	**0.883**

Notes: N=802, ** significance was at 0.01 level.
Source: own study.

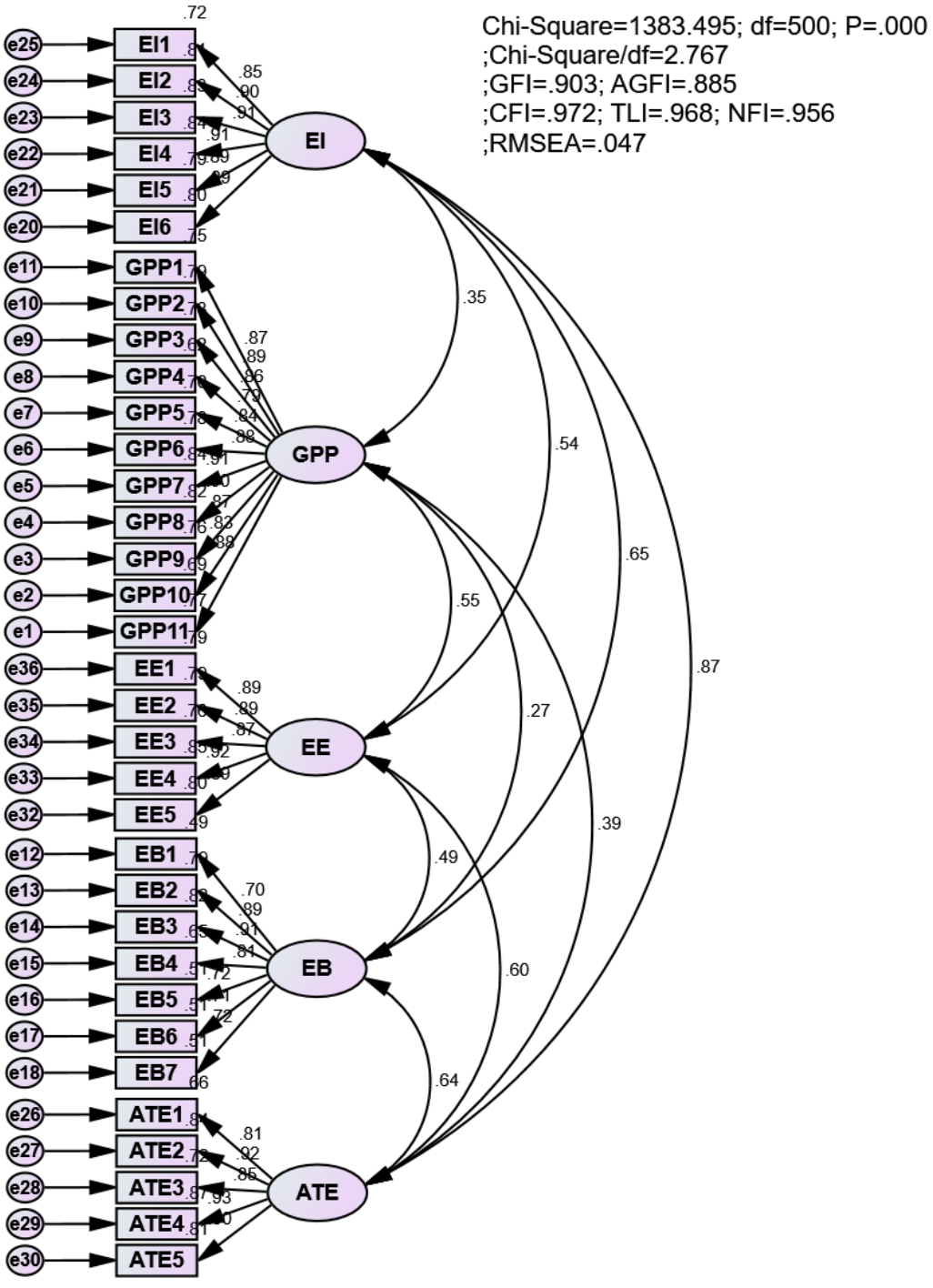


Figure 2. Standardized measurement model
Source: own elaboration.

To examine the common method bias, Harman's one-factor test (an unrotated factor solution) has been implemented. The result showed an explained variance of 46.322% which was lower than the cut-off value of 50%, therefore, common method bias was not an issue in our study (Podsakoff *et al.,* 2003).

The Structural Model

The SEM results reported the goodness-of-fit of the model in the studied dataset. Particularly, $\chi^2(496) = 1310.966$; $\chi^2/df = 2.643$; $p < 0.001$; GFI = 0.974; AGFI = 0.892; CFI = 0.974; TLI =0.970; NFI = 0.959, and RMSEA = 0.045 (Hair *et al.*, 2020). The standardized coefficients of proposed paths obtained from SEM analysis was illustrated in Figure 3 and Table 4.

Table 4. Results of the hypothesis testing of the study

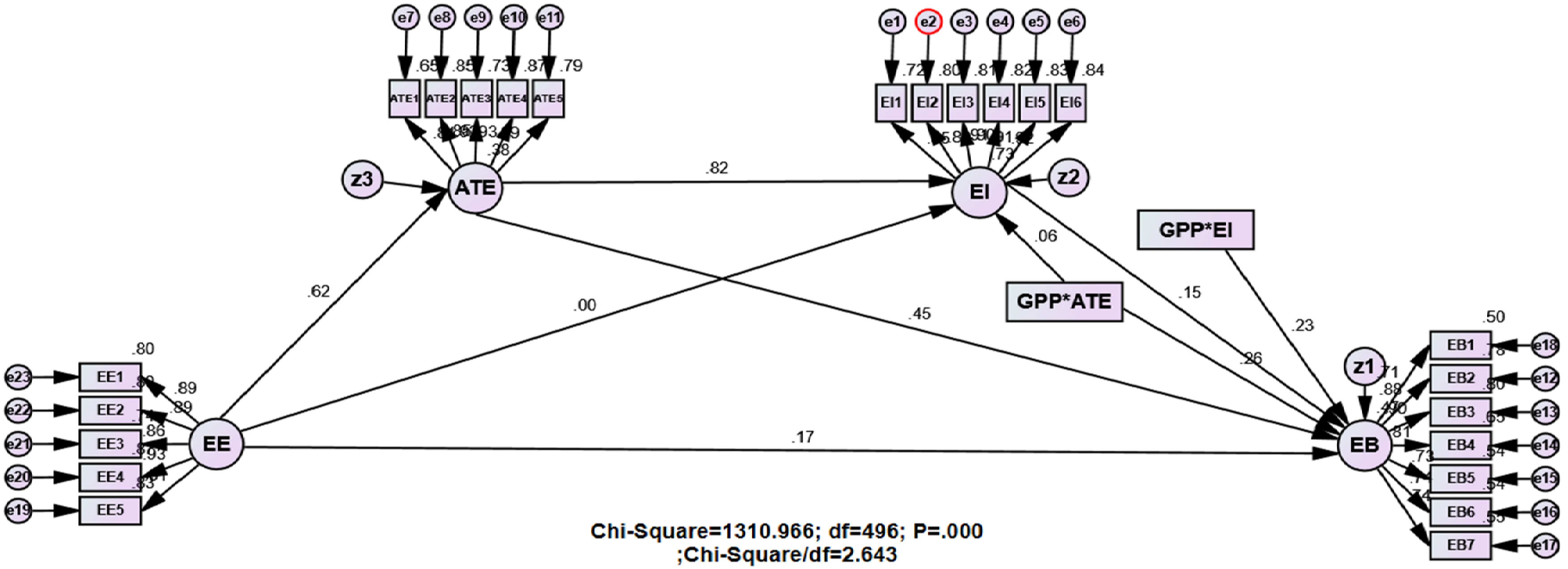
Hypothesis	Paths	Standardized effects	P-value
H1	EI → EB	0.151	*
H2	ATE → EI	0.824	***
H3	ATE → EB	0.449	***
H4a	EE → ATE	0.616	***
H4b	EE → EI	0.004	0.910
H4c	EE → EB	0.172	***
H5	EE → ATE → EI	0.503	***
H6	EE → ATE → EB	0.149	**
H7	EE → EI → EB	0.006	0.490
H8	EE → ATE → EI → EB	0.503	***
H9a	GPP*ATE → EI	0.061	**
H9b	GPP*ATE → EB	0.257	*
H9c	GPP*EI → EB	0.228	***

Notes: N=802, * p < 0.05; ** p < 0.01; *** p-value < 0.001.
Source: own study.

Results reported that both attitude towards entrepreneurship (β = 0.449; p-value < 0.001) and entrepreneurial intention (β = 0.151; p-value < 0.05) were significantly associated with entrepreneurial behaviour while the entrepreneurial intention was strongly correlated with attitude towards entrepreneurship (β = 0.824; p-value < 0.001). H1, H2, and H3 were thus supported by the data.

With regard to the direct effect of entrepreneurial education, our results revealed that entrepreneurial education was positively associated with attitude towards entrepreneurship (β = 0.616; p-value < 0.001) and entrepreneurial behaviour (β = 0.172; p-value < 0.001), yet it was not significantly related to entrepreneurial intention (β = 0.004; p-value > 0.05). Therefore, while H4a and H4c were supported, H4b was not supported by the data. Besides, serial mediation effects of entrepreneurial education on intention and behaviour engaged in entrepreneurial activities were tested in this study. Results reported that entrepreneurial education indirectly affected entrepreneurial intention ($\beta_{EE\text{-}ATE\text{-}EI} = 0.503$; p-value < 0.001) and entrepreneurial behaviour ($\beta_{EE\text{-}ATE\text{-}EB} = 0.149$; p-value < 0.01) via attitude towards entrepreneurship while entrepreneurial education did not affect entrepreneurial behaviour ($\beta_{EE\text{-}EI\text{-}EB} = 0.006$; p-value > 0.05) via entrepreneurial intention. Interestingly, entrepreneurial education had a serial mediation impact on entrepreneurial behaviour via attitude towards entrepreneurship and entrepreneurial intention ($\beta_{EE\text{-}ATE\text{-}EI\text{-}EB} = 0.503$; p-value < 0.001). Thus, H5, H6, and H8 were supported while H7 was not supported by the data.

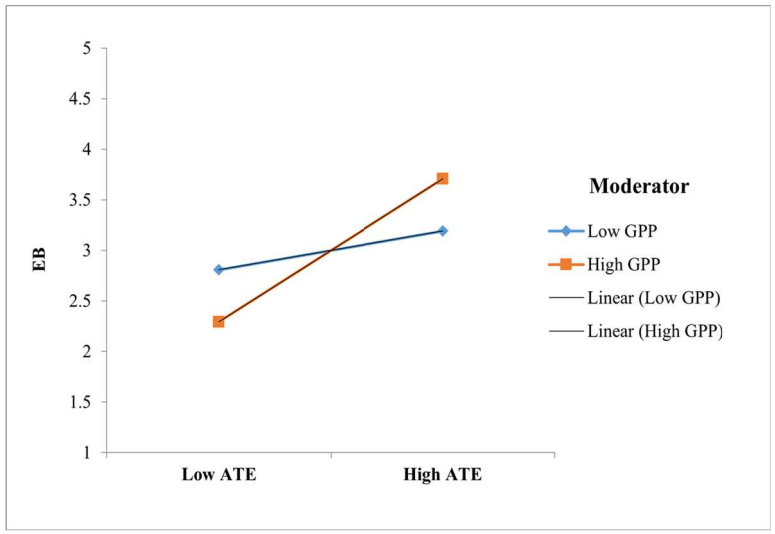
Finally, the moderation impacts of government policies and programmes on the entrepreneurial attitude-intention-behaviour links were estimated. Results illustrated that government policies and programmes positively moderated the entrepreneurial attitude-intention linkage (β = 0.061; p-value < 0.01), the impact of attitude towards entrepreneurship on start-up behaviour (β = 0.257; p-value < 0.05), and the impact of on entrepreneurial intention on entrepreneurial behaviour (β = 0.228; p-value < 0.001). Thus, H9a, 9b, and 9c were supported. The interaction plot of these links is demonstrated in Figure 4.

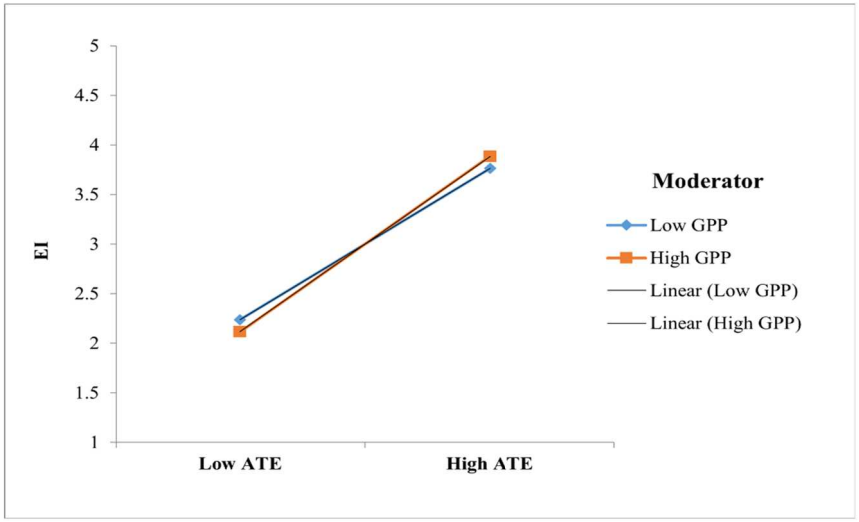


Chi-Square=1310.966; df=496; P=.000
;Chi-Square/df=2.643
;GFI=.910; AGFI=.892
;CFI=.974; TLI=.970; NFI=.959
;RMSEA=.045

Figure 3. Standardized structural model

Source: own elaboration.





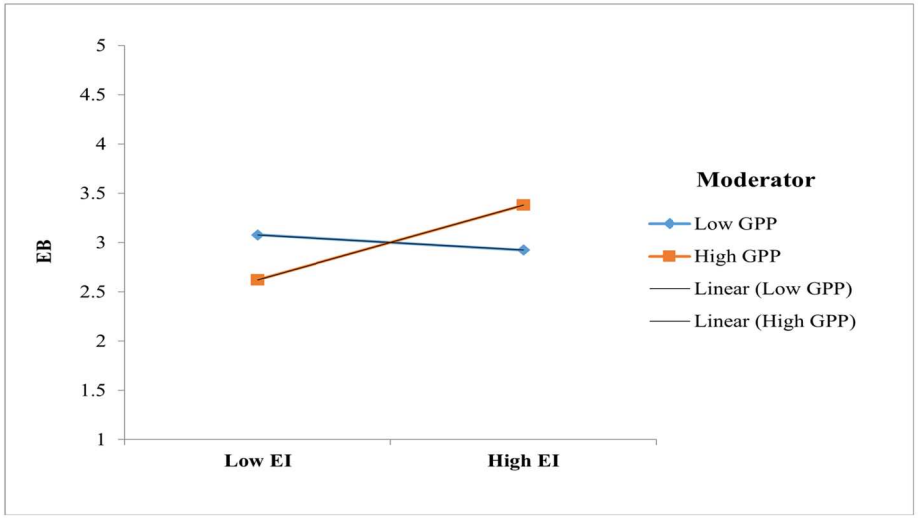


Figure 4. Cross-level moderation impacts of government policies and programmes
Source: own elaboration.

CONCLUSIONS

Prior studies tried to explore how a positive attitude towards involvement in organization emergence and start-up intention turn into actual start-up behaviour (*e.g*., Calza *et al.*, 2020; Meoli *et al.*, 2020). However, our extant understanding of entrepreneurial attitude-intention-behaviour linkages is still limited (Duong, 2022) and further explorations are required (Gieurre *et al.*, 2020). Moreover, the transition process from a positive attitude to becoming involved in organization emergence and start-up intention into actual start-up behaviour can be moderated by contextual and environmental factors (Calza *et al.*, 2020). In our research, we consider organization emergence as a vocational behaviour (Gieurre *et al.*, 2020), which can be nurtured via entrepreneurial education (Duong, 2021) and training and supported via government policies and programmes (Salisu, 2020).

Our results reported that a positive attitude towards involvement in organization emergence and intention to start a business both play an important role in sculpting entrepreneurial behaviour. However, the direct influence of a positive attitude towards involvement in organization emergence was stronger than that of intention on entrepreneurial behaviour. It means that the entrepreneurial behaviour of master's students was strongly influenced by their attitude towards entrepreneurship in the context of Vietnam. It also reflects that the entrepreneurial behaviour of master's students in Vietnam was largely shaped by how they perceived the outcome of a business career. A favourable entrepreneurial attitude made them more likely to start a business. Additionally, the results of this study indicated that a favourable attitude towards entrepreneurship played an important role in shaping start-up intention, which is in the line with many previous studies in other emerging economies (*e.g*., Elnadi & Gheith, 2021; Nowiński *et al.*, 2020). Moreover, attitude towards entrepreneurship not only had a direct effect on entrepreneurial behaviour, but it also had a partial mediation impact on entrepreneurial behaviour via entrepreneurial intention. Thus, our findings could help explain the key roles of both entrepreneurial attitudes and intentions in developing entrepreneurial behaviour and significantly contribute to extant entrepreneurship literature.

Concerning the role of entrepreneurial education, our results revealed that entrepreneurial education positively contributed to sculpting entrepreneurial attitudes and behaviour directly. However, entrepreneurial education was not found to have a significant impact on start-up intention, which was consistent with some prior studies (*e.g*. Duong *et al.*, 2021; Nowiński *et al.*, 2020). Additionally, the result of mediation testing reported that besides the direct effect on entrepreneurial behaviour, entrepreneurial education indirectly affected entrepreneurial behaviour via attitude towards becoming entrepreneurs. In other words, the attitude towards becoming an entrepreneur served as a partial mediator in the relationship between entrepreneurial education and entrepreneurial behaviour. Additionally, serial mediation testing demonstrated that entrepreneurial education had a serial indirect effect on start-up behaviour via two mediators, including entrepreneurial attitude and entrepreneurial intention. These findings led to a general conclusion that when master's students received entrepreneurial education, their attitude towards entrepreneurship became more favourable and they were more likely to engage in entrepreneurial activities. Consequently, a serial mediation model can help us understand why entrepreneurial education does not play a direct role in shaping entrepreneurial intention, but it still enforces individuals to behave in an entrepreneurial manner, which was not clarified in prior studies (Maheshwari, 2021; Nowiński *et al.*, 2020).

With regard to the moderation effects of entrepreneurial government policies and programmes on the start-up attitude-intention-behaviour links, most of the prior studies focused on the direct effects of entrepreneurial government policies and programmes on entrepreneurial intention (*e.g*. Elnadi & Gheith, 2021; Salisu, 2020), but overlooking the moderation effects of government policies and programmes on the entrepreneurial process (Maheshwari, 2021). Our results reported that entrepreneurial government policies not only reinforced the translation from an entrepreneurial attitude into entrepreneurial intention, but it also increased the conversion from attitude towards organization emergence and start-up intention into actual entrepreneurial behaviour. It means that when entrepreneurial government policies and programmes are better, the linkages between attitudes towards

organization emergence, entrepreneurial intention and entrepreneurial behaviour become stronger. In other words, there are more likely to transfer from a positive entrepreneurial attitude and entrepreneurial intention into start-up action if government policies and programmes for entrepreneurship are more favourable for new enterprises or nascent entrepreneurs.

Theoretical Contribution

Thus, our study made several significant contributions to the extant entrepreneurship literature. Firstly, the study bridged the attitude-intention-behaviour gap when our results found that entrepreneurial behaviour can be significantly predicted by both attitudes towards entrepreneurship and entrepreneurial intention. Moreover, entrepreneurial attitude turned its influence on start-up intention into actual entrepreneurial behaviour. Secondly, a serial mediation effect of entrepreneurial education on actual start-up behaviour via two mediators (entrepreneurial attitude and start-up intention) was significant in our study, which helps clarify why when individuals receive entrepreneurial behaviour, their entrepreneurial intention does not become higher, yet they still behave entrepreneurially manner. Last, our study contributed to entrepreneurship literature when it indicated that entrepreneurial government policies and programmes can promote individuals by transferring their positive attitude towards becoming entrepreneurs, and initial start-up intention into entrepreneurial actions.

Practical and Managerial Implication

Our findings provided some practical and managerial insights for policymakers and educators to inspire individuals to engage in entrepreneurial activities. Firstly, our results revealed that a positive attitude towards organization emergence and intention to start a business both play an important role in sculpting entrepreneurial behaviour. Especially the direct impact of attitude towards organization emergence on entrepreneurial behaviour was stronger than that of intention on entrepreneurial behaviour. This implies that promoting a favourable attitude towards entrepreneurship is a backbone issue of shaping entrepreneurial behaviour. Moreover, the entrepreneurial process, which originated from a positive attitude towards creating a new business venture and ends with actual start-up behaviour, can be nurtured by entrepreneurial education. Although entrepreneurial education does not directly affect entrepreneurial intention, it directly affects entrepreneurial behaviour. Entrepreneurial education indirectly affects entrepreneurial intention and behaviour through improving attitude towards entrepreneurship. Thus, educational programmes for entrepreneurship should be taken account into fostering entrepreneurial activities in the long-term strategies (Wach & Głodowska, 2019), and even entrepreneurial education programmes should be implemented at earlier stages of entrepreneurial education, such as primary, secondary, and high schools (Alvarez-Risco *et al.*, 2021). Educators should invite successful entrepreneurs to come as guest speakers in entrepreneurial programmemes which could help students shape their positive attitude towards entrepreneurship. Additionally, pedagogical approaches orienting to real and experiential learning, real business situation, or extracurricular activities should be concerned to increase the effectiveness of entrepreneurial education programmes (Cui & Bell, 2022).

Secondly, entrepreneurial government policies and programmes can foster the transition of the entrepreneurial attitude and intention into start-up behaviour, hence, encouraging a favourable entrepreneurial ecosystem for new enterprises is needed to foster individuals to behave entrepreneurially (Duong, 2021). Government and policymakers should provide policies which can foster individuals to implement their entrepreneurial intention such as supporting the implementation of communication activities on creative start-ups and building entrepreneurship culture; implementing training programmes to develop human resources for innovative entrepreneurship; and developing infrastructure, techniques, and premises for creative entrepreneurial activities (Linhartova, 2021; Tran *et al.*, 2022).

Limitations and Avenues for Further Studies

Even though our study made the critical contributions to both theoretical, practical, and managerial perspectives, some limitations should be mentioned to make suggestions for next studies. Firstly, our study adopted a cross-sectional questionnaire and temporary aspect to investigate and close the start-up attitude-intention-behaviour, thus, next studies should use longitudinal data, which observe the

time-lags between attitudes towards organizational emergence, start-up intention, and actual behaviour over time. This longitudinal approach could bring the better insights into the organizational emergence attitude-intention-behaviour linkages, especially in measuring actual entrepreneurial behaviour more exactly. Secondly, our research model focuses solely on exploring the indirect influence of entrepreneurial education and the moderating impacts of entrepreneurial government policies and programmes on the start-up attitude-intention-behaviour relationships, thus, next studies should expand the research model to explore the impacts of internal and external factors on these relations.

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