

ECA

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Bridging Parental Influence and Entrepreneurship Education: The Role of Entrepreneurial and Digital Competencies in Shaping Entrepreneurial Career Aspirations.

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Bridging Parental Influence and Entrepreneurship Education: The Role of Entrepreneurial and Digital Competencies in Shaping Entrepreneurial Career Aspirations.

This study investigates the factors that shape entrepreneurial career aspirations among university students majoring in tourism and hotel management in Indonesia with a focus on the role of entrepreneurial and digital competency. The study examines whether parental attitudes towards entrepreneurship and entrepreneurship education contribute to the development of entrepreneurial and digital competencies, which in turn affect students' entrepreneurial career aspirations. By using a survey data on 442 university students, this study employs Structural Equation Model (SEM) to test the direct and indirect effects of entrepreneurial and digital competency on entrepreneurial career aspiration. Moreover, the study uses Necessary Condition Analysis (NCA) to reveal specific competencies that contribute to entrepreneurial career aspirations. Our findings indicate significant effects of entrepreneurial and digital competencies in mediating the relationship between parents' ³ positive attitude towards entrepreneurship and entrepreneurship education on entrepreneurial career aspiration. Entrepreneurial and digital competencies are found to be critical mediators, acting as necessary conditions for entrepreneurial career aspirations. Our findings thus highlights the importance of mastering both entrepreneurial and digital competencies in shaping students entrepreneurial career aspirations in the era of digital economy.

Keywords: entrepreneurship education, entrepreneurial competencies, digital competencies, entrepreneurial and digital competencies, entrepreneurial career aspiration, parents' attitude towards entrepreneurship.

Introduction

Entrepreneurial career aspiration is an important research topic to uncover the process that explains how young people choose and develop their career. This topic has become more important

as the data from Global University Entrepreneurial Spirit Students' Survey (Guess), which surveyed students in 57 countries, showed that about 30 percent of students consider pursuing an entrepreneurial career in five years after their graduation (Sieger et al., 2023). The number is even higher in Indonesia, where 44.26% of university students in the survey said that they were interested in becoming founders of their own business right after graduation. The number rose to 62.22% when they were asked about what they wanted to be in five years after graduation (Suhartanto, 2023).

Prior studies on entrepreneurial career aspirations were mostly conducted on higher education students under the term entrepreneurial intention (Maheshwari, 2021; Maheshwari et al., 2022), career path intention (Cieřlik & van Stel, 2017), or career intention (Gorgievski et al., 2018; M. Liu et al., 2023). These studies look at students' short and long term intention to become entrepreneurs, and both the personal and contextual factors that shaped the intention. A large number of these studies reveal the role of entrepreneurship education (EE) in developing entrepreneurial knowledge and stimulating skills which later contribute to students' entrepreneurial aspirations (Maheshwari et al., 2022). Nonetheless, the effects of EE were found to be varied among students and certain disciplines were less represented in the existing studies. For example, there was a significant difference between business students versus science and engineering students. Moreover, there was a lack of studies that were aimed at tourism and hotel management students (Horng et al., 2020a; Zhang & Chen, 2024).

A study on the relationship between EE and entrepreneurial career aspirations (ECA) among tourism and hotel management students thus becomes even more important, given that entrepreneurship related subjects are increasingly being incorporated into the curriculum of higher education institutions. Historically, the curriculum was designed as a combination of vocational

discipline (e.g. hotel and restaurant operations, principles of tourism development) in business management modules; to prepare students to work in the hospitality industry (Arranz et al., 2017). However, with the nature of the tourism sector that are predominated by small and medium enterprises (SMEs), and with the changes in tourism industry that are more oriented toward digital services (Pencarelli, 2020), little is known about the situational factors that may shape entrepreneurial career aspiration of tourism and hotel management students in the era of digital economy. More specifically, little is known whether their closest environment, such as parents' attitudinal support and entrepreneurship education that they received at the university can equip them with entrepreneurial and digital competency that are needed to start their entrepreneurial career in the digital economy.

In addition to this first gap, prior studies that look at the effect of education on entrepreneurial competency (e.g. Ferreras-García ⁵ et al., 2021; González-López et al., 2021) tend to overlook the individuals' competency in digital technology. These studies tend to emphasize on certain generic and managerial competencies in starting a new venture such as in decision-making, working with uncertainty, creativity and preparing the business plans, thus have overlooked at knowledge and skills needed to use digital technology (Bachmann et al., 2024). Digital competencies can be defined as a set of knowledge, skills, attitudes, that enable individuals to effectively navigate, understand, and utilize digital technologies..... A better understanding on the role of digital competency thus becoming essentials given that some recent studies have revealed the role of digital technology by enabling the processes and outcomes of entrepreneurship (e.g. Chalmers et al., 2021; von Briel et al., 2018), as well as in changing value creation and value capture within the industry (Lorenz et al., 2024). These studies provide insights for aspiring entrepreneurs that

mastering digital technology have become the necessary competency for venture creation and growth, which may contribute to future entrepreneurial career (Bachmann et al., 2024).

In order to address this research gap, we therefore aim to reveal the situational factors that affect students' entrepreneurial and digital competency, and how the two competencies may explain their entrepreneurial career aspiration. More specifically, our first aim is to reveal the effect of parents' attitude towards entrepreneurship and entrepreneurship education on hotel and tourism management students' entrepreneurial career aspiration. Second, we aim to investigate whether both entrepreneurial and digital competencies can contribute to students' entrepreneurial career aspirations. To achieve these objectives, we've developed a model that explains entrepreneurial career aspirations as a result of students' competencies in entrepreneurship and digital technology that are derived from EE and their parents' positive attitude toward entrepreneurship. We tested the model by using a sample of 442 students in tourism, retails and hotel management in Indonesia. The results of our study signify the important role of entrepreneurial and digital competencies in bridging parental and education support in shaping entrepreneurial career aspiration for students in retail, tourism and hotel management.

Literature Review and Hypothesis Development

Entrepreneurial Career Aspirations and Parents Attitude towards Entrepreneurship

Parents' positive attitudes toward entrepreneurship may impact their children's entrepreneurial career aspirations through several mechanisms. First, the social cognitive theory by Bandura (1986), suggests that children learn behaviours, attitudes, and values by observing and imitating their parents. When parents display positive attitudes toward entrepreneurship, such as valuing innovation and risk-taking, these attitude maybe internalized by their children, and which

later shape their entrepreneurial aspirations. In addition, when parents hold positive views on entrepreneurship and express their support for entrepreneurial endeavours, they can increase their children's interest and self-efficacy in pursuing entrepreneurial careers.

Second, ⁴ the theory of planned behaviour (Ajzen, 1991) highlights the role of subjective norms or the beliefs about whether important others like parents approve or disapprove of certain intentional behaviours. When parents show their positive attitude towards entrepreneurship, children may not only develop a favourable attitude towards entrepreneurial career, but they also may feel that they have the support and approval which enhance their perceived behavioural control and confidence in their competence to succeed in entrepreneurial career (Muigai et al., 2022).

More specifically on students whose parents are entrepreneurs, parents can serve as a role model that inspires and motivates children to choose an entrepreneurial career. According to (Laspita et al., 2012), there are several mechanisms that explain the transmission of entrepreneurial careers within the family; (1) through genetic transmission from parents to children. (2) Through parental support, where parents use financial and non-financial resources to support their children (3) Through the process of socialization, where parents transmit values, knowledge, and skills. Therefore, based on these theoretical insights, we hypothesize:

H1: Parents Attitude (PA) has a positive and significant effect towards Entrepreneurial Career Aspirations (ECA).

Entrepreneurial Career Aspirations and Entrepreneurship Education

Entrepreneurship education is the learning experience in formal schools, informal training and other types of experiences to learn entrepreneurial knowledge, attitudes and skills (Bae et al.,

2014). Entrepreneurship education is different from business education. Entrepreneurship education is aimed at increasing awareness of entrepreneurship as a career path through the founding a business organization while business education is to prepare students to work in more established ventures (Bae et al., 2014; Hahn et al., 2020).

EE in higher education has made significant contributions to students in creating entrepreneurial skills by providing a platform for students to learn to identify, understand, and act on new business opportunities (Hahn et al., 2020). Students who attend entrepreneurship courses will gain a more realistic perspective on what is required, thereby increasing their confidence in entrepreneurial skills, and supporting their ability to create and establish new businesses. Prior studies have shown the role of entrepreneurship education (EE) in developing entrepreneurial knowledge and stimulating skills which later contribute to students' aspirations in entrepreneurship (Maheshwari et al., 2022). Therefore, we propose the following hypothesis:

H2: Entrepreneurship Education (EE) has positive and significant effect on Entrepreneurial Career Aspirations (ECA).

Parents Attitude on entrepreneurship and its effects on Entrepreneurial and Digital Competencies

A family environment that values entrepreneurship may encourage children to adopt entrepreneurial mindsets and practice their entrepreneurial skills. Parents with a positive attitude toward entrepreneurship often foster an environment that nurtures entrepreneurial competencies in children, such as opportunity recognition, creativity, and resilience (Powell & Eddleston, 2013). Children may feel that their parents support them to initiate entrepreneurial activities, motivating them to develop entrepreneurial and digital skills needed to start a digital business through learning

by doing. Parents' positive attitude towards entrepreneurial career will also be more likely to help their children to cover financial requirements and support their learning and emotional journey of initiating entrepreneurial activities when they can exercise their knowledge and skills, such as in calculating risk, negotiation, leading a team, utilizing digital commerce technology, and social media for promotion (Bagheri & Pihie, 2011; Saoula et al., 2023).

In summary, parents' positive attitudes towards entrepreneurship may shape their children's entrepreneurial and digital competencies through the adoption of mindset, support and encouragement to learn knowledge and skills needed to create and develop either conventional or digital business. Consequently, we hypothesize the following:

H3: Parents' positive attitude on entrepreneurship (PA) has a positive and significant effect on Entrepreneurial Competencies (EC).

H4: Parents' positive attitude on entrepreneurship (PA) has a positive and significant effect on Digital Competencies (DC).

Entrepreneurship Education and its effects on Entrepreneurial and Digital Competencies

The goal of entrepreneurship education is to prepare students for entrepreneurial practice and to develop entrepreneurial competencies (Tittel & Terzidis, 2020). Through EE, students can gain entrepreneurial competencies that consist of (1) Knowledge in opportunities recognition, problem solving and risk management (2) Skills, such as communication, interaction, and conflict resolution (3) Attitudes, such as growth mindset and perseverance (Tittel & Terzidis, 2020).

In addition to entrepreneurial competencies, entrepreneurship education may equip students with digital competencies that are relevant in supporting entrepreneurial activities. In today's digital economy, students who attend entrepreneurship courses will learn how to identify and

exploit entrepreneurial opportunities both in the real world and in the virtual world (Singh et al., 2024). Students will also learn how to utilize digital marketing, data analysis, and e-commerce strategies to promote and market products that they create (Secundo et al., 2020). Acquiring EE in higher education settings thus will equip tourism, retails and hotel management students with both entrepreneurial and digital competencies. We, therefore, hypothesize that:

H5: Entrepreneurship Education (EE) has a positive and significant effect on Entrepreneurial Competencies (EC).

H6: Entrepreneurship Education (EE) has a positive and significant effect on Digital Competencies (DC).

Entrepreneurial and Digital Competencies and its effects on Entrepreneurial Career Aspirations

Entrepreneurial competencies refer to the set of skills, behaviours, and attitudes that enable individuals to identify opportunities, innovate, and manage risks within a business context. These competencies include problem-solving, creativity, leadership, adaptability, and strategic thinking (Mitchelmore & Rowley, 2010). Research has shown that individuals with high levels of entrepreneurial competencies are more likely to view entrepreneurship as a viable career option, as these skills provide them with the confidence to navigate the complexities of starting and running a business (Sánchez, 2013). Entrepreneurial competencies empower individuals to overcome barriers to entrepreneurship, such as fear of failure or uncertainty about the business environment. For example, those who are strong in risk management and adaptability are better equipped to handle the uncertainties that come with starting a new venture.

In addition to the general entrepreneurial competency, as the business world becomes increasingly digital, digital competencies are emerging as critical components of entrepreneurial success. Entrepreneurs need these skills to leverage the internet and digital platforms for innovation, customer outreach, and market expansion. Furthermore, digital competencies are essential for scalability and global reach. Entrepreneurs who possess digital marketing skills can reach wider audiences through online platforms, while data-driven decision-making allows for more efficient and effective business strategies. As a result, digital competencies are increasingly linked to entrepreneurial success and aspirations in the modern economy (Singh et al., 2024). Therefore, we propose the following hypothesis:

H7: Entrepreneurial Competencies (EC) will have a positive and significant effect on Entrepreneurial Career Aspirations.

H8: Digital Competencies (DC) will have a positive and significant effect on Entrepreneurial Career Aspirations (ECA).

The Mediating Role of Entrepreneurial and Digital Competencies on the relationship between parents positive attitude towards entrepreneurship and Entrepreneurial Career Aspirations

Parents' positive attitudes toward entrepreneurship may shape their children's entrepreneurial career aspirations. Parents provide a motivating atmosphere for their children to identify and seize market opportunities. Referring to the Theory of Planned Behaviour (TPB) which explain that individual's behavioural intentions is shaped by attitude, subjective norms, and perceived behavioural control; If individuals have a positive attitude toward the behaviour, perceive social support for it, and believe they have control over it, they are more likely to form a strong intention to engage in the behaviour. This implies that parents' positive attitudes towards entrepreneurship

can affect their children's attitudes toward entrepreneurship as a viable career option. Children can follow their parents, becoming ⁴ more likely to develop a positive attitude towards entrepreneurship. In addition, if parents also provide support for their children to engage in entrepreneurship, the support may affect children's perceptions of social norms regarding exploiting business opportunities, making them believe that choosing this path of career is acceptable.

A supportive and encouraging stance towards entrepreneurship from parents may motivate children to develop entrepreneurial and digital competencies. Children may feel that their parents support them to learn knowledge and skills needed to create new ventures in the digital economy. Children may feel that their entrepreneurial endeavours are approved by parents, thus motivating them to learn knowledge and skills needed to support their future career goals. As children acquire these competencies, they gain the confidence and perceived behavioural control over entrepreneurial endeavours. A study by Liñán & Chen (2009) supports the TPB framework, showing that perceived behavioural control and attitudes significantly predict entrepreneurial intentions. This implies that competencies can mediate the relationship between parental attitudes and entrepreneurial aspirations by enhancing positive attitudes, shaping norms, and perceived control over behaviour. Therefore, we predict that:

H9a: Entrepreneurial Competencies (DC) will have a positive and significant mediating effect on the relationships between Parents Attitude (PA) on Entrepreneurial Career Aspirations (ECA).

H9b: Digital Competencies (DC) will have a positive and significant mediating effect on the relationships between Parents Attitude (PA) on Entrepreneurial Career Aspirations (ECA).

The Mediating Role of Entrepreneurial and Digital Competencies on the relationship between Entrepreneurship Education and Entrepreneurial Career Aspirations

Entrepreneurship education in higher education can enhance individuals' ability in entrepreneurship by equipping students with the necessary knowledge, skills and attitude to create new ventures in the digitally-driven market (Gretzel et al., 2015; Horng et al., 2020b; Nam et al., 2021). When students feel that they have the competence in entrepreneurship after joining EE class, students will be more likely to consider entrepreneurship as their career (Sánchez, 2013).

According to Social Cognitive Theory (SCT), self-efficacy beliefs are central to human agency, as it affects motivation, thought processes, emotional reactions, and the behaviour of individuals. Within the entrepreneurial context, education and trainings may affect entrepreneurial self-efficacy or how confident individuals in their ability to initiate, manage, and succeed in entrepreneurial endeavours (Newman et al., 2019). Recent empirical evidence for this relationship can be found on Singh et al., (2024) which reveal the positive effect of digital entrepreneurship training on entrepreneurial aspirations as it equips individuals with the necessary digital skills to start and run digital ventures. Hence, we predict that:

H10a: Entrepreneurial Competencies (EC) will have a positive and significant mediating effect on the relationships between Entrepreneurship Education (EE) on Entrepreneurial Career Aspirations.

H10b: Digital Competencies (EC) will have a positive and significant mediating effect on the relationships between Entrepreneurship Education (EE) on Entrepreneurial Career Aspirations.

Research Methods

Sample and Data Collection

² This study takes a quantitative approach; using a survey data that was targeting on university students in Indonesia majoring in tourism, retails and hotel management who have completed 12 entrepreneurship subject. The survey was conducted from June to August 2024, after we

received approval from the Institute of Research and Community Outreach of Petra Christian University regarding the ethical aspects of the survey protocol. Overall, a total of 442 questionnaires were used for data analysis as they were matched with our criteria.

Table 1 presents the demographic profile of our respondents. The majority (76.02%) of our respondents were females while in terms of economic status almost a half of them (48.2%) identify themselves as coming from the middle income family. Based on the geographic distribution, respondents living in the province of East Java contribute to 25.57% of the total (n=113), followed by respondents from West Java 19.68% (n=87), Jakarta 15.84% (n=70), Central Java 8.14% (n=36), South Sulawesi 7.47% (n=33), Banten 6.11% (n=27) and North Sumatera 4.30 % (n=19).

Table 1 Demographic Indicators

	Category	Amount	Percentage
Age	18-24	365	82.57
	25-30	77	17.43
Gender	Male	106	23.98
	Female	336	76.02
Economic Status	Lower	92	20.81
	Middle	213	48.20
	Upper	137	30.99
Province	Bali	7	1.58
	Banten	27	6.11
	Yogyakarta	10	2.26
	Jakarta	70	15.84
	West Java	87	19.68
	Central Java	36	8.14
	East Java	113	25.57
	West Kalimantan	3	0.68
	South Kalimantan	5	1.13
	East Kalimantan	4	0.90
	The Riau Islands	2	0.45
	Lampung	4	0.90
	Nangroe Aceh Darussalam	4	0.90
	West Nusa Tenggara	1	0.23
	East Nusa Tenggara	1	0.23
	Riau	7	1.58

Category	Amount	Percentage
South Sulawesi	33	7.47
South-East Sulawesi	1	0.23
West Sumatera	2	0.45
South Sumatera	6	1.36
North Sumatera	19	4.30

Measurement and Analysis Method

Our questionnaire consisted of several sections, from the screening section, demographic information of respondents, and questions regarding the dependent, independent and mediating variables. The response options on the items used to measure all variables were on a seven-point Likert-type scale, where 1 = strongly disagree to 7 = strongly agree. The dependent variable (entrepreneurial career aspiration/ECA) was a construct, comprised of three items taken from Lechner et al., 2018). While the independent variable (parents' attitude towards entrepreneurship/PA) comprised of four items taken from Liu & Zhao (2021). For the second independent variable (entrepreneurship education/ EE), we used a measured developed by Saptono et al., (2020) to assess entrepreneurship education in higher education institutions in Indonesia. Lastly, our first mediating variable (entrepreneurial competency/EC) was a construct that define the individuals' knowledge, skill and attitude on entrepreneurship were developed from Bacigalupo et al.,(2016); Bolzani & Luppi, (2021); Morris et al., (2013) and Puhy et al., (2021). The second mediating variable was digital competency (DC), which measure the individuals' information and data literacy, and their ability to use digital technology for communication and collaboration (Dalgıç et al., 2024; Gagliardone et al., 2015). Table 2 display the complete items we used in our questionnaire.

This study implemented ⁴ Partial Least Squares Structural Equation Modelling (PLS-SEM) analysis with Smart-PLS 4.1 to investigate the direct and indirect relationships in our theoretical model. PLS-SEM is considered a "causal-predictive approach to SEM" due to the fact that this study investigates multiple predictors. This approach anticipates the parameters by optimizing the explained ³ variance of the indicators (Hair et al., 2019). In the process of bootstrapping, a 5000-subsample method was employed, and the presumption of a normal sampling distribution is not mandatory in PLS-SEM, as per (Hair et al., 2014). This approach has been used in several research concerning the hotel and tourist industries (Müller et al., 2018).

In addition to using SEM, we employed Necessary Condition Analysis (NCA). This method is increasingly suggested in many business and management research including entrepreneurship to identify conditions that must be present for an outcome to occur but not necessarily to guarantee the outcome. Unlike the conventional regression analysis where researchers often focus on how much a factor contributes to an outcome, NCA focuses on whether a condition is necessary for the outcome to exist at all (Dul, 2016). In this study, we tested whether both EC and DC are critical conditions for entrepreneurial career aspirations. This is to complement the primary analysis that assesses the role of EC and DC as mediators for the relationship between PA and EE on entrepreneurial career aspirations.

Data Analysis and Results

Measurement Model

The evaluation of convergent validity included three criteria put forward by Fornell & Larcker, (1981). In order to ascertain the correlation coefficients between the constructs, we implemented factor loading. The loading values of the majority of items were either greater than

0.70 or fell within the range of 0.715 (EC11) to 0.879 (ECA2). However, several item, EC8, EC13, EC14, DC5, DC6, DC8, DC9 was removed because the loading weights was below the threshold (Hair et al., 2019). Similarly, we observed that the composite reliability (CR) values were either higher than the recommended values (0.70) or ranged from 0.873 (ECA) to 0.945 (EC) (refer to Table 2). In order to further assess and identify the elements, we calculated the average variance extracted (AVE) values. Consequently, the AVE construct values were all within the range of 0.610 to 0.696, which is considered outstanding and exceeds 0.50 (Hair et al., 2019). Lastly, we assessed ⁵ the internal consistency of the elements using Cronbach's alpha reliability. We observed that Cronbach's alpha values varied from 0.780 (for ECA) to 0.936 (EC). This indicates that all factors are reliable (>0.70).

Table 2 Measurement Model

Code	Items	Loadings	CR	AVE	Cronbach's alpha
PA1	My parents support my career choice as an entrepreneur	0.852	0.899	0.690	0.850
PA2	My parents support me if I choose to start my own business	0.852			
PA3	My parents believe that young people deserve the opportunity to choose their own career paths	0.821			
PA4	My parents will provide mental and financial support if I start a business	0.796			
EE1	University entrepreneurship education inspires creative thinking about becoming an entrepreneur	0.810	0.901	0.696	0.854
EE2	The university provides the necessary knowledge for entrepreneurship.	0.860			
EE3	The university provides the skills and abilities required for entrepreneurship.	0.866			
EE4	I believe education can boost entrepreneurial interest.	0.799			
EC1	I am able to understand industry trends to start a business.	0.776	0.945	0.610	0.936
EC2	I am able to think creatively.	0.806			
EC3	I can analyse business problems.	0.818			

Code	Items	Loadings	CR	AVE	Cronbach's alpha
EC4	I am capable of analysing risks.	0.812			
EC5	I can accept new ideas and approaches to develop a business.	0.796			
EC6	I can identify customer needs.	0.782			
EC7	I can develop innovative products or services.	0.779			
EC9	I can find solutions when faced with unexpected challenges.	0.727			
EC10	I can communicate my ideas clearly.	0.789			
EC11	I am able to collaborate with others.	0.715			
EC12	I can identify the root causes of conflicts.	0.789			
DC1	I can use appropriate digital resources to meet my information needs.	0.802	0.890	0.619	0.846
DC2	I use digital technology to access the latest information in my field.	0.820			
DC3	I am able to express my thoughts and opinions through relevant social media.	0.777			
DC4	I leverage digital communities for academic tasks.	0.752			
DC7	I can identify information on social media.	0.780			
ECA1	I plan to start a new business in the short term (during college or after graduation).	0.827	0.873	0.696	0.780
ECA2	Recently, I've been actively researching how to start a new business.	0.879			
ECA3	If I have the opportunity, I will start a new business.	0.794			

The methodology proposed by Fornell & Larcker (1981) was employed to evaluate discriminant validity. They recommend that the average variance retrieved for each construct should have a square root that is greater than its relationship with any other construct. The results in Table 3 were in accordance with the criteria that were previously described, indicating that the structures in the model showed a substantial discriminant capability.

Table 3 Discriminant Validity

	DC	EC	ECA	EE	PA
DC	0.787				
EC	0.745	0.781			

ECA	0.572	0.633	0.834		
EE	0.626	0.708	0.509	0.834	
PA	0.564	0.584	0.476	0.595	0.831

Bold value: Square root of AVE

Table 4 Correlations

	PA	EE	EC	DC	ECA	AVE	Square root of AVE
PA	1.000	0.595	0.584	0.564	0.476	0.690	0.831
EE	0.595	1.000	0.708	0.626	0.509	0.696	0.834
EC	0.584	0.708	1.000	0.745	0.633	0.610	0.781
DC	0.564	0.626	0.745	1.000	0.572	0.619	0.787
ECA	0.476	0.509	0.633	0.572	1.000	0.696	0.834

In comparison to the square root of the AVE value of the PA latent variable, which is 0.831, the correlation values of 0.595 for EE, 0.584 for EC, 0.564 for DC and 0.476 for ECA are all lower. The latent variables EE, EC, DC, and ECA exhibit a correlation value that is less than the square root of the AVE value for their respective latent variables. This implies that the constructs are classified as valid.

We examined the Variance Inflation Factor (VIF) for all independent variables to assess potential multicollinearity issues. A VIF value below 5 is considered acceptable (Hair et al., 2014) ⁵ As shown in Table 5, the VIF values ranged from 1.549 to 2.930, all below the critical threshold ⁵ of 5. These results indicate that multicollinearity is not a significant issue in this model. Therefore, all VIFs in the inner model resulting from a full collinearity test are equal to or lower than 3,3, the model can be considered free of common method bias (Kock, 2015).

Table 5 Variance Inflation Factor (VIF)

	VIF
DC -> ECA	2.433
EC -> ECA	2.930
EE -> DC	1.549

EE -> EC	1.549
EE -> ECA	2.275
PA -> DC	1.549
PA -> EC	1.549
PA -> ECA	1.748

Structural Equation Modelling Results

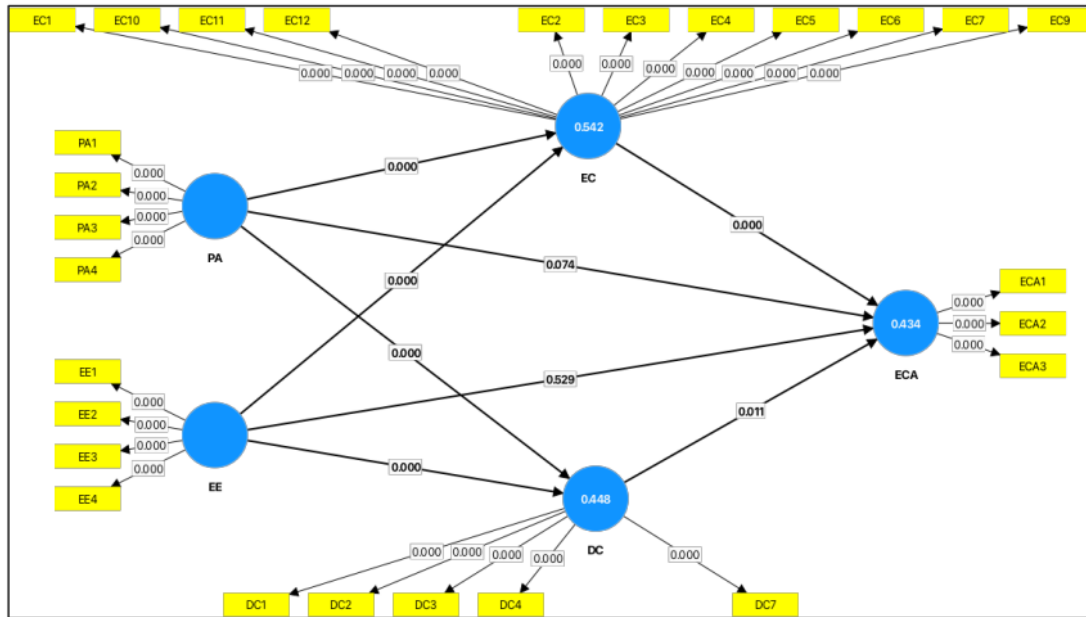


Figure 1 Structural Equation Model

Table 6 Direct Result Path of Correlation

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O /STDEV)	P values
PA -> ECA	0,114	0,115	0,064	1,784	0,074
EE -> ECA	0,044	0,042	0,069	0,630	0,529
PA -> EC	0,252	0,253	0,047	5,409	0,000
PA -> DC	0,297	0,299	0,047	6,344	0,000
EE -> EC	0,558	0,558	0,044	12,570	0,000
EE -> DC	0,558	0,558	0,044	12,570	0,000
EC -> ECA	0,400	0,401	0,066	6,096	0,000
DC -> ECA	0,183	0,184	0,072	2,537	0,011

SEM path analysis was performed to evaluate the proposed hypotheses. The results provided partial support for Hypothesis 1 and Hypothesis 2. As Table 6 show, Parents Attitude (PA) had a positive but not significant direct effect on entrepreneurial career aspiration (ECA) ($\beta=0.114$, $p>0.01$). Similar with the parents attitude (PA), ⁴entrepreneurship education (EE) had a positive but insignificant direct effect on entrepreneurial career aspiration (ECA) ($\beta=0.044$, $p>0.01$). Thus, Hypotheses 1 and Hypothesis 2 were **rejected**. Hypotheses 3-6 were examined by investigating the path coefficient between “parents attitude and entrepreneurial competencies” (H3) ($\beta= 0.252$, $p<0.01$), “parents attitude and digital competencies” (H4) ($\beta= 0.297$, $p<0.01$), “entrepreneurship education and entrepreneurial competencies” (H5) ($\beta= 0.558$, $p<0.01$), “entrepreneurship education and digital competencies” (H6) ($\beta= 0.558$, $p<0.01$) and “entrepreneurship education and digital competencies” (H6) ($\beta= 0.558$, $p<0.01$). Hypotheses 7 and 8 were examined by investigating the path coefficient between “entrepreneurial competencies and entrepreneurial career aspiration” (H7) ($\beta= 0.400$, $p<0.01$) and “digital competencies and entrepreneurial career aspiration” (H8) ($\beta= 0.183$, $p<0.01$). Thus, Hypotheses 3,4,5,6,7 and Hypothesis 8 were **accepted**.

Table 7. Indirect Result Path of Correlation

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (IO/STDEV)	P values
PA -> EC -> ECA	0,101	0,102	0,026	3,894	0,000
PA -> DC -> ECA	0,054	0,055	0,023	2,335	0,020
EE -> EC -> ECA	0,223	0,223	0,038	5,797	0,000
EE -> DC -> ECA	0,082	0,082	0,034	2,424	0,015

Meanwhile, as Table 7 shows, Parents Attitude (PA) had significant indirect effects on Entrepreneurial Career aspiration (ECA) through Entrepreneurial Competencies (EC) ($\beta=0.101$, $p<0.01$). Parents Attitude towards entrepreneurship (PA) also had significant indirect effects on

Entrepreneurial Career aspiration (ECA) through Digital Competencies (DC) ($\beta=0.054$, $p < 0.01$). Therefore, Hypotheses 9a and Hypothesis 9b were **accepted**. Table 7 also show that Entrepreneurship Education (EE) had significant indirect effects on Entrepreneurial Career aspiration (ECA) through Entrepreneurial Competencies (EC) ($\beta=0.223$, $p < 0.01$). Entrepreneurship Education (EE) also had significant indirect effects on Entrepreneurial Career aspiration (ECA) through Digital Competencies (DC) ($\beta=0.082$, $p < 0.01$). Therefore, Hypotheses 10a and Hypothesis 10b were **accepted**.

Table 8 Result Path of Correlation for Parents Attitude (PA) and Entrepreneurship Education (EE)

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values
PA -> ECA	0,114	0,115	0,064	1,784	0,074
PA -> EC -> ECA	0,101	0,102	0,026	3,894	0,000
PA -> DC -> ECA	0,054	0,055	0,023	2,335	0,020
EE -> ECA	0,044	0,042	0,069	0,630	0,529
EE -> EC -> ECA	0,223	0,223	0,038	5,797	0,000
EE -> DC -> ECA	0,082	0,082	0,034	2,424	0,015

In summary, as Table 8 shows, our results indicate that both PA and EE displayed a positive but not significant direct effect on entrepreneurial career aspiration (ECA). However, the results also indicate that both entrepreneurial and digital competencies could mediate these relationships, thus signifying the role of entrepreneurial competency and digital competency as a full mediating variable in the relationship between PA and EE on ECA.

Necessary Condition Analysis

In order to determine whether entrepreneurial competencies (EC) and digital competencies (DC) are essentials and necessary for shaping entrepreneurial career aspirations, we performed

¹ necessary condition analyses. We used continuous linear ceiling envelopment and ceiling regression techniques with free disposal hull (CE-FDH and CR-FDH, respectively) (Dul, 2016; Dul et al., 2020; Linder et al., 2023). This approach enables us to assess ¹ whether high levels of EC and DC are necessary conditions for high entrepreneurial career aspirations. Table 9 presents the estimated effect sizes and corresponding p-values. We observed small and significant effect sizes for both EC (dCE-FDH = 0.092; dCR-FDH = 0.80) while DC (dCE-FDH = 0.106; dCR-FDH = 0.092) was medium and significant effect sizes, demonstrating that both EC and DC were necessary predictors of entrepreneurial career aspirations.

¹ Table 9 Results of Necessary Condition Analyses (NCA)

Analysed parameters	Entrepreneurial Competencies (EC)		Digital Competencies (DC)	
	CE-FDH	CR-FDH	CE-FDH	CR-FDH
Ceiling zone	0.092	0.080	0.106	0.092
Scope	-1.599	-1.747	-2.191	-2.252
Accuracy (%)	100	99.321	100	99.095
Effect size	0.092	0.080	1.106	0.092
Condition inefficiency (%)	55.869	57.816	73.055	69.230
Outcome inefficiency (%)	61.519	62.247	30.760	40.378

When applied to the entrepreneurial context, NCA helps to reveal the minimum required levels of Entrepreneurial Competencies (EC) necessary for achieving certain levels of Entrepreneurial Career Aspirations (ECA). This approach is critical for understanding which competencies serve as the prerequisites for higher career aspirations in entrepreneurship. The stepwise function represents the Ceiling Envelopment - Free Disposal Hull (CE-FDH). It indicates the minimum level of EC required to achieve certain levels of ECA. The steps show specific thresholds: for instance, to achieve higher scores on the ECA, we need to have at least a certain score in EC. The area below the step line (yellow region) suggests where observations are feasible based on the condition of EC. The **Ceiling Regression - Free Disposal Hull (CR-FDH)** is the

smooth line that approximates the relationship between EC and ECA, providing a more general view compared to CE-FDH. This line is less conservative and gives a continuous estimate of how EC is related to higher levels of ECA. The **blue dots** represent the actual data points or observations. Each dot is a combination of the **EC score** (x-axis) and the resulting **ECA score** (y-axis). Most observations fall below the ceiling lines, indicating that the levels of EC are sufficient to achieve the corresponding levels of ECA. The concentration of blue dots below the ceiling lines demonstrates that most observations comply with the necessary condition. The few dots near or above the CE-FDH line indicate data points where the condition was at its limit, meaning higher EC was needed to reach higher ECA.

Concerning DC, the yellow area below the step line indicates feasible combinations of DC and ECA, meaning that higher levels of ECA require a minimum threshold of DC. The CR-FDH is a smoother, linear representation of the relationship between DC and ECA. This line is less strict than the CE-FDH and offers a general approximation of how DC contributes to ECA levels over a continuous range. The blue dots represent actual data points, each corresponding to the LV score of DC (x-axis) and the resulting LV score of ECA (y-axis). The majority of observations are located below the ceiling lines, indicating that the necessary condition (DC) is generally met for different levels of ECA. Most of the observations (blue dots) fall below the ceiling lines, showing that DC is generally a necessary condition for achieving various levels of ECA. The few data points near the ceiling suggest the limiting role of DC in reaching the upper bounds of ECA. Figure 2 (right-side) also shows that higher levels of Digital Competencies (DC) are required to achieve elevated levels of Entrepreneurial Career Aspirations (ECA). As shown in Figure 2, the two plots displayed that higher levels of Entrepreneurial Competencies (EC) are generally necessary to achieve higher levels of Entrepreneurial Career Aspirations (ECA).

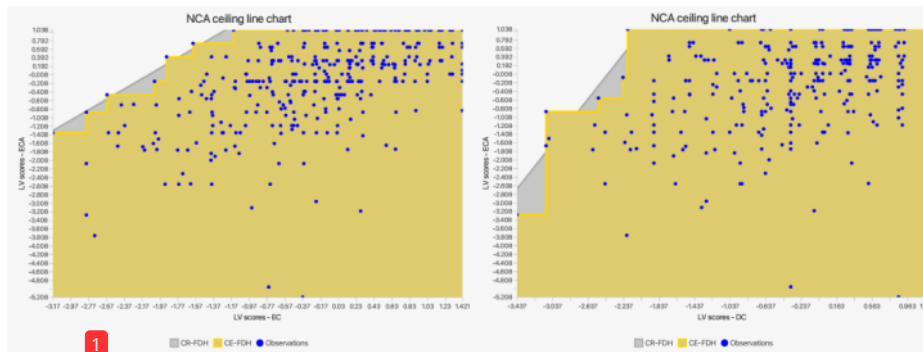


Figure 2 Plots of Necessary Condition Analyses (NCA) for Entrepreneurial Competencies (EC–on the Left) and Digital Competencies (DC-on the Right)

To further understand the specific entrepreneurial and digital competencies that are necessary and sufficient to shape entrepreneurial career aspiration, we run another round of analysis and reported in Table 10 and Table 11. As shown in the Table 10 below, CE-FDH and CR-FDH are effect size measures that indicate how much each indicators of EC contributes in the NCA (Necessary Condition Analysis). The larger the value, the greater the contribution of the variable in achieving the outcome. **EC5** (I can accept new ideas and approaches to develop a business) has the largest original effect size of **0.401**, with a confidence interval lower bound of **0.215**, making it the most influential variable. The p-value is **0.000**, confirming its significance as a necessary condition. **EC2** (I am able to think creatively) follows closely with an effect size of **0.353** and a confidence interval of **0.116**, with a highly significant **p-value of 0.000**. **EC11** (I am able to collaborate with others) also shows a strong contribution, with an effect size of **0.321** and a confidence interval of **0.216**, with a **p-value of 0.001**, making it **significant** as well. **EC6** (I can identify customer needs) has the smallest original effect size (**0.133**) and a **confidence interval of 0.000**, indicating a very weak contribution. However, it still has a significant **p-value of 0.000**, suggesting it does have some influence, albeit minimal compared to other variables.

Table 10 Results of CE-FDH dan CR FDH for Entrepreneurial Competencies (EC)

	CE-FDH			CR-FDH		
	Original effect size	95.0%	Permutation p-value	Original effect size	95.0%	Permutation p-value
EC1	0,303	0,181	0,000	0,245	0,091	0,000
EC2	0,353	0,116	0,000	0,290	0,059	0,000
EC3	0,259	0,077	0,000	0,234	0,038	0,000
EC4	0,182	0,062	0,000	0,165	0,031	0,000
EC5	0,401	0,215	0,000	0,321	0,141	0,000
EC6	0,133	0,000	0,000	0,101	0,000	0,000
EC7	0,216	0,008	0,000	0,165	0,004	0,000
EC9	0,233	0,122	0,000	0,179	0,075	0,000
EC10	0,283	0,090	0,000	0,248	0,045	0,000
EC11	0,321	0,216	0,001	0,271	0,141	0,000
EC12	0,228	0,116	0,000	0,191	0,058	0,000

As shown in Table 11, **DC2** (I use digital technology to access the latest information in my field) has the highest **CE-FDH** effect size of **0.307** and a **p-value of 0.000**, making it the most influential variable in this analysis. This is further confirmed by its **CR-FDH** ²value of **0.232** with a **p-value of 0.000**, indicating its strong and significant contribution across both methods. **DC4** (I leverage digital communities for academic tasks) also shows a notable contribution, with a **CE-FDH** of **0.257** and a **CR-FDH** of **0.171**, although the **p-value for CE-FDH** is **0.140**, which is slightly above the typical significance threshold. This means the result should be interpreted with caution, especially for CE-FDH, even though its **CR-FDH** remains statistically significant. **DC1** (I can use appropriate digital resources to meet my information needs) and **DC7** (I can identify information on social media) show effect sizes of **0.252** and **0.251**, respectively, in **CE-FDH**, with significant **p-values of 0.000**. Their **CR-FDH** values are also significant (**p-values of 0.000**), indicating that both variables are strong contributors. **DC3** (I am able to express my thoughts and opinions through relevant social media) has the smallest **CE-FDH** value at **0.200**, but ²with a **p-**

value of 0.000, it is still statistically significant, albeit its contribution is lower than the other variables.

Table 11 Results of CE-FDH dan CR FDH for Digital Competencies (DC)

	CE-FDH			CR-FDH		
	Original effect size	95.0%	Permutation p-value	Original effect size	95.0%	Permutation p-value
DC1	0,252	0,099	0,000	0,204	0,049	0,000
DC2	0,307	0,021	0,000	0,232	0,010	0,000
DC3	0,200	0,099	0,000	0,162	0,049	0,000
DC4	0,257	0,333	0,140	0,171	0,167	0,043
DC7	0,251	0,167	0,000	0,203	0,087	0,000

Discussion

Results from our study reveal that both parents' positive attitude towards entrepreneurship and entrepreneurship education have positive but not significant direct effects on students' entrepreneurial career aspirations. Moreover, our findings also reveal that despite showing non-significant direct effect on students' entrepreneurial career aspirations, both parents' positive attitude towards entrepreneurship and entrepreneurship education display significant effects on entrepreneurial and digital competencies. This suggests that growing up in a family where entrepreneurship is valued has positive effects on the development of competencies such as risk-taking behaviour, creativity, and proactive approach to problem-solving. While parents may instill a foundational mindset, entrepreneurship education provides the structured, formal learning environment needed to develop specific competencies, such as innovation, problem-solving, and adaptability. Therefore, although parents' attitudes and formal entrepreneurship education may not directly translate into entrepreneurial career aspirations, they provide a foundation for the development of entrepreneurial and digital competencies that inspire students to pursue entrepreneurial career. Our results, thus, are in line with some prior studies (e.g. Kakouris et al., 2024; Longva et al., 2020) which show that early exposure to digital technology within the family

environment plays a crucial role in developing digital skills essentials in entrepreneurship. (Satalkina & Steiner, 2020; Sitaridis & Kitsios, 2024).

The findings of our study also underscore the importance of mastering entrepreneurial and digital competencies for tourism and hospitality students in shaping their entrepreneurial career aspirations. Our results indicate significant effects of entrepreneurial and digital competencies in mediating ³ the relationship between parents' positive attitude towards entrepreneurship and entrepreneurship education on entrepreneurial career aspiration. In addition, by employing necessary condition analysis (NCA), our study shows that the two competencies are necessary conditions or the critical factors of entrepreneurial career aspiration. These suggest that without the two competencies entrepreneurial career aspirations of hotel and tourism students will not occur. Moreover, our data show small yet significant effect sizes for EC and medium effect sizes for DC, highlighting the importance of digital mastery to shape young people's entrepreneurial career aspirations.

Further, our study also reveals the specific competencies such as adaptability, creativity and lateral thinking, interaction, information and data literacy, security and safety and also communication; that are essentials particularly for students in tourism, retail, and hotel management. Furthermore, the study reveals **EC5** (I can accept new ideas and approaches to develop a business) as the most critical variable in this analysis, as it shows large effect size, robust confidence interval, and significant p-value. **EC2** (I am able to think creatively) and **EC11** (I am able to collaborate with others) are also influential and necessary for the outcome, based on their effect sizes and statistical significance. Even though **EC6** (I can identify customer needs) has a small effect size, its p-value shows that it still plays a role, though it is likely less impactful in

practical terms. These insights highlight the importance of certain entrepreneurial competencies, like **EC5**, **EC2**, and **EC11**, as necessary conditions for achieving successful outcomes.

Regarding digital competency, **DC2** (I use digital technology to access the latest information in my field) was found to be the most influential variable in the data with the highest **CE-FDH** and **CR-FDH** effect sizes. **DC1** (I can use appropriate digital resources to meet my information needs) and **DC7** (I can identify information on social media) are also serve as crucial contributors, with robust effect sizes and significant p-values across both methods. **DC4** (I leverage digital communities for academic tasks) is an important variable, but its **CE-FDH** effect size should be interpreted cautiously due to its a non-significant p-value, while its **CR-FDH** remains significant. **DC3** (I am able to express my thoughts and opinions through relevant social media) has the smallest effect size but still holds statistical significance, making it a necessary condition with a smaller yet meaningful contribution. These findings indicate that **DC2** should be a primary focus in entrepreneurship education while **DC1**, **DC7**, and **DC4** can also be considered significant contributors to entrepreneurial career aspiration. .

Overall, our findings indicate that entrepreneurial competencies and digital skills should be central to entrepreneurship education, especially in industries where digital technology is integral to business growth (Nambisan et al., 2019; Paul et al., 2023). Digital competencies will allow students to better navigate and capitalize on opportunities in the growing digital economy (Liguori et al., 2020; Sitaridis & Kitsios, 2024) particularly with the hospitality industry. The findings also imply that the two competency are inseparable in shaping entrepreneurial behaviour, thus the use of combined terminology such entrepreneurial and digital competency rather than using a separate terminology (EC and DC) will be more accurate in reflecting the competencies needed for entrepreneurs in the digital economy era (Ngoasong, 2018).

Conclusion

Our study highlights the role of entrepreneurial and digital competencies on entrepreneurial career aspirations. While both parents attitude towards entrepreneurship and entrepreneurship education show no significant direct effect on entrepreneurial career aspirations, the two competencies can fully mediate the relationships ⁴ between entrepreneurship education and parents attitude towards entrepreneurship on entrepreneurial career aspirations. Furthermore, the two competencies are both a necessary condition or a critical factor of entrepreneurial career aspiration. This implies that career aspiration of hotel and tourism students will not occur without the two competency. In addition, this study show that both competency are shaped by parents positive attitude towards entrepreneurship and entrepreneurship education received at the university, thus highlighting the importance of nurture or the situational factors surrounding young people for entrepreneurial career aspiration.

² Our study contributes to the entrepreneurship education literature by answering the call to conduct more studies on entrepreneurial career aspirations of students in tourism and hospitality management that are underrepresented in the literature (Horng et al., 2020a; Zhang & Chen, 2024). In addition, our study contributes to extend studies on the effect of entrepreneurship education that tends to focus on entrepreneurial competency (Ferreras-Garcia et al., 2021; González-López et al., 2021); overlooking its effect on students' digital competency. In doing so, the results of our study add to the findings from a recent study that shows the role of digital competency in shaping students' entrepreneurial intention (Bachmann et al., 2024). The results of our study suggest that both entrepreneurial and digital competency are a necessary condition to pursue a career that involves the founding and leading a business venture in the digital economy era.

Nonetheless, despite its contributions, this study is not without limitations. First, our study relies on cross sectional data and does not make a distinction between short versus long term career aspirations. Future studies should consider the utilization of longitudinal data to assess the changes of the strength of entrepreneurial career aspirations over a certain period of time, as well as to understand factors that contribute to immediate versus long term entrepreneurial career aspirations. Second, our study focuses solely on entrepreneurial and digital competency as a mechanism that explains the relationship between EE and parental support on entrepreneurial career aspiration. Future research should investigate the possible serial mediation effect of entrepreneurial and digital competency on entrepreneurial self-efficacy to extend our current understanding of the antecedents of entrepreneurial self-efficacy (Newman et al., 2019) and the role of digital competency on entrepreneurial career.

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