Digital Entrepreneurial Intention among Undergraduate Business Management Students

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The intentions of university students enrolled in business management programs to pursue careers in digital businesses are related to their image of entrepreneurship as a career alternative. Universities play a significant role in developing motivation and competencies in students, and helping them to engage productively in entrepreneurial activities. This study examines the antecedents of digital entrepreneurial intentions among business management students in Thailand, using data collected from 400 business management students via self-administered questionnaires. The study uses the partial least squares structural equation modelling approach to examine the relationships between personality characteristics, professional entrepreneurial motivation, and digital entrepreneurial intention. The findings indicate that the most influential antecedent affecting digital entrepreneurial intention is conscientiousness through intrinsic professional entrepreneurial motivation. The implications of the study are meaningful for educational institutions, business incubators and other stakeholders, and highlights opportunities for further research.

Key words: *Personality Characteristics and Traits, Digital Entrepreneurial Intention, Business Management Students.*

1. INTRODUCTION

The global economy is volatile, developments in information and communication technology are progressing at an unprecedented rate, and competition in the job market is intense. One group of professionals who play an important role in this fast-paced environment is digital entrepreneurs, i.e. entrepreneurs who make extensive use of digital technology and related knowledge to improve business practices, enhance management efficiency, formulate informed business strategies, and gain a competitive advantage. Additionally, these individuals aim to deliver products and services that are varied, interconnected, and

responsive to customer needs (Hull et al., 2007). Two notable attributes of digital businesses, especially start-ups, are their small size and their focus on achieving exponential growth over a short period through capital mobilisation and joint ventures (Ministry of Digital Economy and Society, 2015).

Entrepreneurs, often owners of small and medium-sized enterprises (SMEs), are the driving force behind a country's economic and social development (Bosma et al., 2012), as evidenced in Thailand. According to government data, the number of SMEs in Thailand in 2019 was 3,105,096, a 1.12% increase over the previous year (Office of Small and Medium Enterprise Promotion, 2020). Not only did SMEs account for 99.53% of all enterprises in Thailand in 2019 but they were also responsible for 12,060,396 jobs, or 69.48% of the total for the kingdom (Ibid., 2020). Moreover, the gross domestic product (GDP) generated by Thailand's SMEs amounted to 5.96 trillion baht, or 35.30% of the nation's GDP (Ibid., 2020). Given their significant role in the Thai economy, entrepreneurs have received several forms of support from relevant government authorities, particularly with the implementation of the Thailand 4.0 policy that is designed to transform the country into a value-based economy and free it from its long-standing status of an original equipment manufacturer (Rukhamate, 2018).

In order to succeed, entrepreneurs need to have certain traits. Among these are the propensity for innovation and change, positive attitude toward risk-taking, unwavering determination to find and pursue new business opportunities, and, on a broader level, personality characteristics that lend themselves to entrepreneurship. From their analysis of past studies, Leutner et al. (2014) confirmed that personality attributes are the most fundamental causal factors influencing an individual's intention to become an entrepreneur. Thus, many studies aim to identify personality-related factors that will most likely affect an individual's entrepreneurial intentions.

A theory that is perhaps the most widely applied in studies relating to personality assessment is Costa and McCrae's (1992) five-factor model (Wooten et al., 1999; Envick and Langford, 2000; Brandstätter, 2011). That model, as its name suggests, identifies five key personality traits, namely extroversion, agreeableness, conscientiousness, emotional stability, and openness to new experiences. The five-factor model was adopted by Zhao, Seibert, and Hills (2005), who found that conscientiousness, openness to experiences, emotional stability, and agreeableness were significantly positively correlated with entrepreneurial intention. In addition to these personality traits, intrinsic motivation and extrinsic motivation were also reported to be powerful causal factors of the intention to pursue entrepreneurship. For example, Kautonen et al. (2013) and Shirokova et al. (2016) reported similar significant effects for intrinsic and extrinsic motivation on an increase in entrepreneurial intention and involvement in activities relating to starting one's own business. One logical conclusion from these studies is that personality traits and motivation both positively correlate with the

intention to become an entrepreneur. This may be due to the association between these personality-related factors and the ability to identify new opportunities, venture into different types of businesses, and secure funding sources (Vasalampi et al., 2014).

However, research examining the effects of personality and motivation factors on entrepreneurial intention in Thailand, particularly among undergraduate business management students, has been limited. It is vital to increase awareness of the psychological make-up of the younger generation for several reasons. First, they are the force that will drive the country forward. Additionally, statistics indicate that few business management students in Thailand wish to become entrepreneurs after graduation (Planning Division, Institute of Research and Information Group, 2020) although their institutions offer courses and activities to equip them with the ability and skills essential for starting businesses. Therefore, this study aims to explore the relationships between personality factors, motivation, and entrepreneurial intention among undergraduate business management students in Thailand. The findings should provide empirical evidence that can assist relevant government authorities in developing and promoting digital entrepreneurs who not only have the right personality and motivation to succeed, but also the aspiration to become business owners in the future.

RESEARCH OBJECTIVES

1. To examine personality and motivation factors influencing entrepreneurial intentions of undergraduate students in business management programs in Thailand.

2. To devise a model showing the relationships between personality factors, motivation factors, and entrepreneurial intentions of undergraduate students in these business management programs.

The remaining sections of this paper are organised as follows: Section 2 provides a literature review and proposes the hypotheses examined in the study. Section 3 explains the research procedures and Section 4 presents the findings. Section 5 discusses the results, and Section 6 offers conclusions and recommendations.

2. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Here, the five personality traits identified in Costa and McCrae's (1992) five-factor model are defined, and hypotheses are developed.

2. 1. PERSONALITY TRAITS

Extroversion. Characterised by proactive engagement with the external world, extroversion is a personality trait that directly reinforces the motivation to be a digital entrepreneur.

Individuals in this profession are often intrinsically motivated to pursue business-related activities based on the sheer enjoyment they derive from social engagement and interaction (Wang et al., 2012). Also, the profession is often associated with fame, recognition, and acceptance by the public at large (Komarraju and Karau, 2005). Therefore, the first two hypotheses are formulated as follows:

H1: Extroversion has a direct positive correlation with an intrinsic motivation to become a professional entrepreneur.
H2: Extroversion has a direct positive correlation with an extrinsic motivation to become a professional entrepreneur.

CONSCIENTIOUSNESS. Conscientiousness is typified by a determination to succeed professionally for tangible outcomes, such as a better income and higher social status (Judge, et al., 1999). With confidence in their digital and innovative abilities, some individuals are both intrinsically and extrinsically motivated to pursue a career as digital entrepreneurs (Abuhamdeh and Csikszentmihalyi, 2009). These intrinsic and extrinsic motivations are strengthened by technological advances that reduce obstacles to, and constraints on, digital businesses (Millman et al., 2010). Accordingly, the next two hypotheses are formed as follows:

H3: Conscientiousness has a direct positive correlation with an intrinsic motivation to become a professional entrepreneur.
H4: Conscientiousness has a direct positive correlation with an extrinsic motivation to become a professional entrepreneur.

OPENNESS TO EXPERIENCE. Individuals with this personality trait are intrinsically curious about new experiences that broaden their horizons. As a result, they often have a desire to become digital entrepreneurs since the profession challenges them to put their knowledge and innovative ability to the test (Komarraju and Karau, 2005). Furthermore, being a digital entrepreneur involves a wide variety of activities that bring these individuals enjoyment and fulfill certain needs (Ibid., 2005). Accordingly, the next hypothesis is constructed as follows:

H5: Openness to experience has a direct positive correlation with an intrinsic motivation to become a professional entrepreneur.

AGREEABLENESS. Agreeableness is reflected by sincerity, trust in others, benevolence, and a willingness to sacrifice one's own benefit for the interests of others (Judge et al., 1999). Individuals with this personality attribute are likely to succeed as digital entrepreneurs due to their natural inclination to act for the greater good of society, for instance, by creating

convenient and affordable products and services (Jayawarna et al., 2013). Based on this, the next hypothesis is proposed:

H6: Agreeableness has a direct positive correlation with an intrinsic motivation to become a professional entrepreneur.

EMOTIONAL STABILITY. Emotionally stable individuals are able to manage stress under most, if not all, circumstances. Thus, it is possible that emotionally stable individuals aspire to become digital entrepreneurs not only to become wealthy and earn a good reputation but to show the world their ability to solve challenging problems (Bolger et al., 1989). Accordingly, the next hypothesis is proposed as follows:

H7: Emotional stability has a direct positive correlation with an intrinsic motivation to become a professional entrepreneur.

2.2 MOTIVATION TO BECOME A PROFESSIONAL ENTREPRENEUR

An individual's intrinsic motivation to become a professional digital entrepreneur stems from recognising the opportunities the career path offers and a desire for independence, while extrinsic motivation for these individuals is based on external benefits such as high income and social acceptance (Plant and Ren, 2010). Both types of motivation are significant determinants of the survival and growth of digital businesses (Liao et al., 2011). For example, Yoo et al. (2012) argue that both intrinsic and extrinsic motivations are positively correlated with the intention to engage in a certain activity continually, over the long run. Wang et al. (2016) further add that those with high intrinsic and extrinsic motivations to become a digital entrepreneur tend to express greater intentions to create digital businesses and partake more in self-development to reach their goals (cf. Hau et al., 2013 for a similar proposition regarding extrinsic motivation).

2.3. DIGITAL ENTREPRENEURIAL INTENTION

Digital entrepreneurial intention refers to the ambitions, determination, and/or behaviours reflecting individuals' desires to start digital businesses (Schumpeter, 1994; Crant, 1996). Hull et al. (2007) define the term "digital entrepreneurs" as a subgroup of business entrepreneurs that seek to grasp business opportunities arising from advances in information and communication technology and digital innovations. By using these technology tools, business operations can be performed in a way that encourage success according to identified goals (Davidson and Vaast, 2010). Accordingly, the final three hypotheses are as follows:

H8: An intrinsic motivation to become a professional entrepreneur has a direct positive correlation with an extrinsic motivation to become a professional entrepreneur.

H9: An intrinsic motivation to become a professional entrepreneur has a direct positive correlation with an intention to start a digital business.

H10: An extrinsic motivation to become a professional entrepreneur has a direct positive correlation with the intention to start a digital business.

The conceptual framework guiding the present study is presented in Fig. 1 below.

Figure 1. Conceptual framework
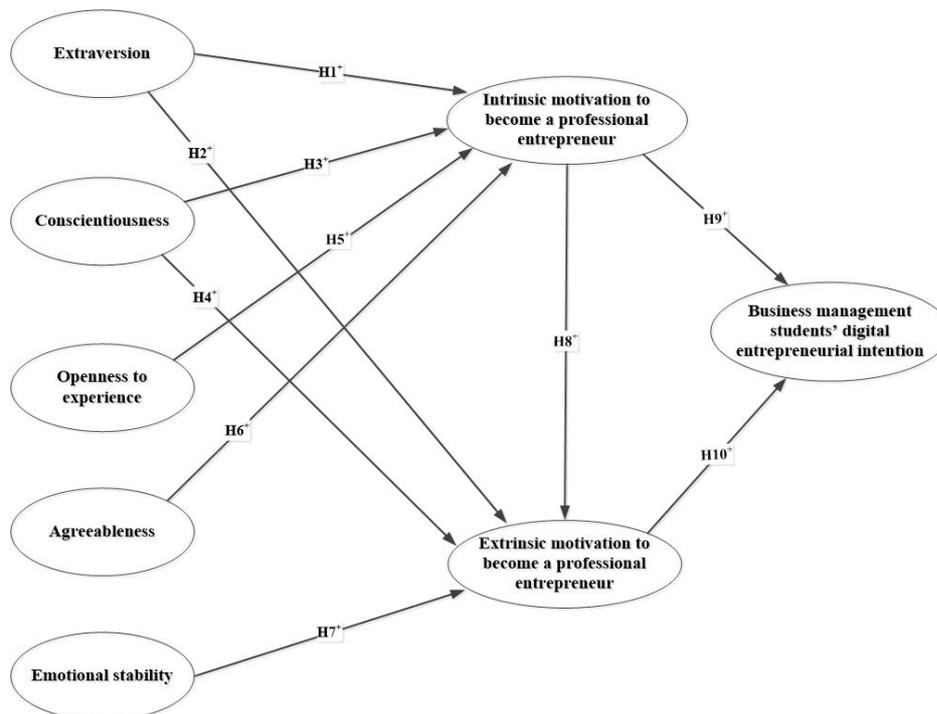
3. RESEARCH PROCEDURES

This study employs a quantitative approach, based on a sample of undergraduate business management students in Thailand. The sample size was determined based on a number of prerequisites. First, Hair et al., (2014) stipulate that a suitable sample size should be at least five to ten times larger than the number of the parameters to be measured. Additionally, following previous research (Hult et al., 2014; Sarstedt et al., 2014) the sample size is required to be at least 100-200 to use partial least squares structural equation modeling (PLS-SEM). Since the questionnaire used in the study comprises 28 items, the minimum acceptable sample size would have been 280; however, the number of students was finalised at 400 to avoid obstacles to statistical calculation caused by sample size determination (cf. Henseler et al., 2016). Subjects were selected using a purposive sampling method.

3.1 RESEARCH METHODOLOGY

The research was conducted using a questionnaire comprised of three parts: (1) demographic information, consisting of seven questions; (2) an assessment of personality traits, consisting of 17 questions adapted from studies conducted by McCrae, Terracciano, and members of the Personality Profiles of Cultures Project (2005), by Bozionelo, et al., (2014), and by Rossberger (2014); and (3) motivation, comprising five questions exploring the motivation to become a professional entrepreneur, adapted from Wang et al., (2016) and six questions regarding the intention to start a digital business, adapted from Srivastava and Misra (2017). All of the questions in parts (2) and (3) used a five-point Likert scale.

QUESTIONNAIRE VALIDATION AND DATA COLLECTION

To validate the questionnaire, it was initially administered to a trial set of ten subjects, to assess the comprehensibility of the questions. Next, content validity was evaluated by three experts using an item-objective congruence method. Following Rovinelli and Hambleton (1977), the minimum acceptable score indicating congruence between the questions constituting the questionnaire and the research objectives was set at 0.50. Based on the experts' evaluation, all questions met the criterion with scores ranging from 0.67 to 1.00. Following this step, the questionnaire was piloted on another 30 subjects to determine the Cronbach's alpha coefficient. Following Hair et al., (2014), the minimum acceptable value indicating reliability was determined to be 0.70. The findings showed that all eight variables in the questionnaire achieved coefficients ranging from 0.760 to 0.895, thus satisfying the requirement. After the questionnaire went through a final revision, it was administered to 400 subjects from the period comprising 16 September 2020 to 5 October 2020. The results were analysed using statistics to describe the demographic information of the subjects and the PLS-SEM to identify the relationships between the causal factors influencing the subjects' digital entrepreneurial intentions.

4. FINDINGS

4.1 DEMOGRAPHIC INFORMATION

The following general characteristics were gathered from the subjects' responses to the demographic profile questions. Of the 400 participants, 78.0% were female. The vast majority (93.75%) access the Internet using a smart phone and log onto the Internet more than five times per week (91.25%). Slightly over half spend over two hours online each time they browse the Internet (52.50%). Almost half (41.75%) of the subjects named Instagram as their most frequently used social media platform. More than half were from a family with a business background (54.00%), and approximately three-fourths were most interested in digital businesses in the communication sector (73.50%).

4.2. ANALYSIS OF THE CAUSAL RELATIONSHIPS USING THE PLS-SEM

4.2.1 ASSESSMENT OF THE MEASUREMENT MODEL

Regarding internal consistency reliability, all of the latent variables have a composite reliability value over 0.70 and a Cronbach's alpha coefficient greater than 0.70; therefore, all the latent variables in the model are deemed to be reliable (Hair et al., 2014). In terms of convergent validity, all of the latent variables have an average variance extracted (AVE) value of over 0.50, indicating that the convergent validity between the manifest variables under the same latent variable for all of the latent variables in the model, is satisfactory (Hair et al., 2014). Regarding indicator reliability, all of the manifest variables in the model are associated with an outer loading coefficient greater than 0.70, demonstrating the reliability of all of the manifest variables (Hair et al., 2014). The findings related to Cronbach's alpha, composite reliability, AVE, and variance inflation factors (VIF) are shown in Table 1.

In terms of discriminant validity, the square root of the AVE value for each latent variable is greater than the correlation coefficients between that latent variable and the other variables in the model. Also, the cross-loading correlation between each manifest variable and the corresponding latent variable is greater than the cross-loading correlation between that manifest variable and the other latent variables in the model. It can thus be concluded that the discriminant validity of all the latent variables in the model not only meet a satisfactory level but are measured using valid manifest variables (Fornell and Larcker, 1981). These results are displayed in Table 2.

Table 1. Latent variables' Cronbach's alpha, composite reliability, AVE, and VIF values

Latent variables	Indicators	Outer loadings	t-values	CR	Cronbach's Alpha	AVE	VIF	R^2
Agreeableness (AGR)	AGR1	0.818**	23.461	0.899	0.860	0.641	1.925	-
	AGR2	0.839**	32.869					
	AGR3	0.814**	26.436					
	AGR4	0.778**	23.806					
	AGR5	0.752**	16.780					
Conscientiousness (CON)	CON1	0.876**	30.005	0.896	0.770	0.811	1.645	-
	CON2	0.925**	84.758					
Business management	EIDB1	0.780**	24.343	0.925	0.903	0.674	2.550	0.556**
	EIDB2	0.852**	42.594					

students' digital entrepreneurial intention (EIDB)	EIDB3	0.847**	39.863					
	EIDB4	0.877**	43.505					
	EIDB5	0.810**	26.851					
	EIDB6	0.754**	21.372					
Emotional stability (EMO)	EMO1	0.843**	28.712	0.869	0.773	0.689	1.637	-
	EMO2	0.852**	36.413					
	EMO3	0.793**	20.861					
Extrinsic motivation to become a professional digital entrepreneur (EPE)	EPE1	0.903**	76.171	0.899	0.776	0.817	1.674	0.518**
	EPE2	0.905**	66.259					
Extroversion (EXT)	EXT1	0.756**	18.475	0.870	0.801	0.626	1.658	-
	EXT2	0.797**	26.927					
	EXT3	0.814**	28.055					
	EXT4	0.797**	24.367					
Intrinsic motivation to become a professional digital entrepreneur (IPE)	IPE1	0.875**	40.548	0.912	0.855	0.776	2.125	0.302*
	IPE2	0.885**	52.614					
	IPE3	0.881**	52.485					
Openness to experience (OPE)	OPE1	0.906**	48.439	0.870	0.706	0.771	1.423	-
	OPE2	0.849**	24.550					

Notes:

1. * represents statistical significance at p<0.05 and t-value≧1.96,;** represents statistical significance at p<0.01 and t-value≧2.58 (Hair et al., 2014).

2. R^2≧0.25 demonstrates low predictive power, R^2≧0.50 indicates moderate predictive power, and R^2≧0.0.75 indicates high predictive power (Hair et al., 2014).

4.2.2   ASSESSMENT OF THE STRUCTURAL MODEL

In assessing a structural model, three requirements must be met: multicollinearity testing, no statistically significant internal relationships between the predicted variables, and a VIF value below 5.0 (Hair et al., 2014). The model used in this study meets these criteria and therefore there were no external construct multicollinearity problems since the VIF values of the predicted variables were within the range of 1.423-2.550, as reported in Table 2.

Table 2. Square roots of latent variables' AVE values and correlation coefficients of the latent variables

Latent variables	AGR	CON	EIDB	EMO	EPE	EXT	IPE	OPE
AGR	*0.801*							
CON	0.685	*0.901*						
EIDB	0.375	0.418	*0.821*					
EMO	0.601	0.544	0.374	*0.830*				
EPE	0.455	0.467	0.672	0.414	*0.904*			
EXT	0.620	0.644	0.393	0.478	0.417	*0.791*		
IPE	0.476	0.501	0.698	0.349	0.691	0.429	*0.881*	
OPE	0.559	0.539	0.401	0.496	0.438	0.530	0.412	*0.878*

Note: Square roots of AVE values appear in bold type along the diagonal cells.

With respect to path coefficients, three of the paths were found to have a direct positive correlation at the 1% significance level, while four were found to have a direct positive correlation at the 5% significance level. The corresponding hypothesis testing results are presented in Table 3.

Table 3. Hypothesis testing using path coefficients

Hypotheses	Path coefficients	t-values	Results
Extroversion --> Intrinsic motivation to become a professional digital entrepreneur	0.087	1.107	H1 rejected
Extroversion --> Extrinsic motivation to become a professional digital entrepreneur	0.059	0.838	H2 rejected
Conscientiousness --> Intrinsic motivation to become a professional digital entrepreneur	0.255**	2.796	H3 confirmed
Conscientiousness --> Extrinsic motivation to become a professional digital entrepreneur	0.051	0.734	H4 rejected
Openness to Experience --> Intrinsic motivation to become a professional digital entrepreneur	0.131*	1.978	H5 confirmed
Agreeableness --> Intrinsic motivation to become a professional digital entrepreneur	0.174**	2.072	H6 confirmed
Emotional Stability --> Intrinsic motivation to become a professional digital entrepreneur	0.153*	2.457	H7 confirmed
Intrinsic motivation to become a professional digital entrepreneur --> Extrinsic motivation to become a professional digital entrepreneur	0.587**	9.963	H8 confirmed
Intrinsic motivation to become a professional digital entrepreneur --> Entrepreneurial intention	0.447**	6.355	H9 confirmed
Extrinsic motivation to become a professional digital entrepreneur --> Entrepreneurial intention	0.363**	4.650	H10 confirmed

*Notes: * represents statistical significance at p<0.05 and t-value≧1.96,;** represents statistical significance at p<0.01 and t-value≧2.58 (Hair et al., 2014).*

From an analysis of the structural equation and path coefficients, intrinsic motivation to become a professional digital entrepreneur was found to have the greatest total effect (TE) on the subjects' digital entrepreneurial intentions (TE=0.660), followed by their extrinsic

motivation to become digital entrepreneurs (TE=0.363). Both are significant at the 1% level. Additionally, conscientiousness had the highest TE on the subjects' intrinsic motivation to become digital entrepreneurs (TE=0.255), followed by agreeableness (TE=0.255), both significant at the 5% level. Finally, intrinsic motivation to become a digital entrepreneur was found to have the greatest TE on the subjects' extrinsic motivation to become digital entrepreneurs (TE=0.587), followed by conscientiousness (TE=0.201), and both are significant at the 5% level. These findings are shown in Table 5 and in Figure 2.

In terms of the coefficient of determination (R^2) (Hair et al., 2014), the model has a moderate level of predictive power with respect to the subjects' digital entrepreneurial intentions (R^2=0.556) and extrinsic motivation to become digital entrepreneurs (R^2=0.518), but has a low level of predictive power with respect to their intrinsic motivation to become digital entrepreneurs (R^2=0.302). The results are presented in Table 2. Regarding predictive relevance (Q^2) (Hair et al., 2014), extroversion, conscientiousness, openness to experience, and agreeableness have a moderate degree of predictive relevance to a subject's intrinsic motivation to become digital entrepreneur. In comparison, extroversion, conscientiousness, emotional stability, and intrinsic motivation to become a digital entrepreneur were found to have a high degree of predictive relevance to a subject's extrinsic motivation to become a digital entrepreneur. Overall, both intrinsic and extrinsic motivation to become a digital entrepreneur had a moderate level of predictive relevance to a subject's digital entrepreneurial intentions.

As for effect size (f^2) (Hair et al., 2014), a subject's intrinsic motivation to become a digital entrepreneur was found to have a substantial effect on the accuracy of the model's predictions regarding the subject's extrinsic motivation to become a digital entrepreneur, while intrinsic and extrinsic motivation to become a digital entrepreneur had a moderate effect on the accuracy of predicting a subject's digital entrepreneurial intention. In comparison, agreeableness and conscientiousness had only a slight effect on the accuracy of predicting a subject's intrinsic motivation to become a digital entrepreneur, similar to the effect of emotional stability on the accuracy of predicting the subjects' extrinsic motivation to become digital entrepreneurs. These findings are reported in Table 4.

Table 4. Direct, indirect, and total effects

Dependent variables	Effects	Independent variables						
		EXT	CON	OPE	AGR	EMO	IPE	EPE
IPE	DE	0.087	0.255*	0.131*	0.174*	-	-	-
	IE	-	-	-	-	-	-	-
	TE	0.087	0.255	0.131	0.174	-	-	-
EPE	DE	0.059	0.051	-	-	0.153**	0.587**	-
	IE	0.051	0.150*	0.077*	0.102*	-	-	-
	TE	0.110	0.201	0.077	0.102	0.153	0.587	-
EIDB	DE	-	-	-	-	-	0.447**	0.363**
	IE	0.079	0.187*	0.087	0.115*	0.056*	0.213**	-
	TE	0.079	0.187	0.087	0.115	0.056	0.660	0.363

Notes:

1. DE=direct effect, IE=indirect effect, TE=total effect

2. * represents statistical significance at p<0.05; ** represents statistical significance at p<0.001.

**Table 5.** Effect size (f^2) and predictive relevance (Q^2) values

Endogenous latent	IPE			EPE			EIDB		
Exogenous latent	Path coefficients	f^2	Q^2	Path coefficients	f^2	Q^2	Path coefficients	f^2	q^2
EXT	-	-	0.218	0.087	-	0.395	0.059	-	-
CON	0.255	0.041	0.218	0.051	-	0.395	-	-	-
OPE	0.131	-	0.218	-	-	-	-	-	-
AGR	0.174	0.020	0.218	-	-	-	-	-	-
EMO	-	-	-	0.153	0.033	0.395	-	-	-
IPE	-	-	-	0.587	0.518	0.395	0.447	0.234	0.342
EPE	-	-	-	-	-	-	0.363	0.155	0.342

Notes:

1. $f^2 \geqq 0.02$ indicates a low degree of effect, $f^2 \geqq 0.15$ indicates a moderate degree of effect, and $f^2 \geqq 0.35$ indicates a high degree of effect (Hair et al., 2014)

2. $Q^2 \geqq 0.02$ demonstrates a low degree of predictive relevance, $Q^2 \geqq 0.15$ demonstrates a moderate degree of predictive relevance, and $Q^2 \geqq 0.35$ demonstrates a high degree of predictive relevance (Hair et al., 2014)

Fig. 2. Path Coefficients of the structural model
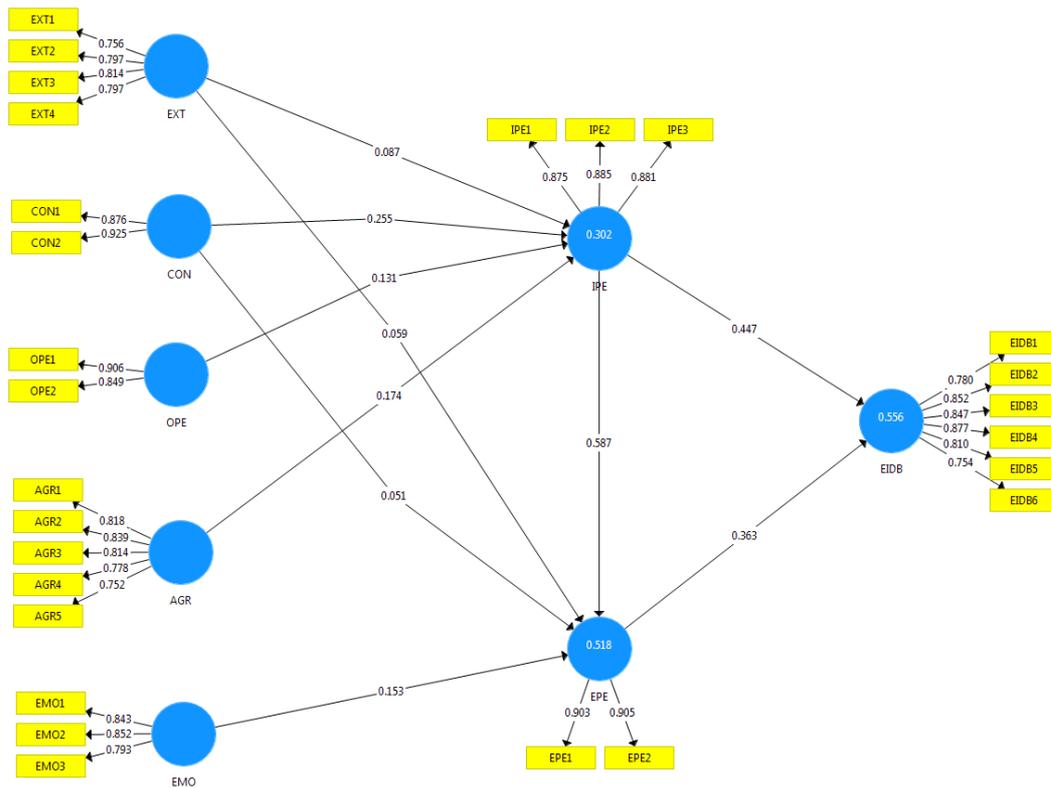
5. DISCUSSION

The findings in this study indicate that the most powerful causal factor affecting undergraduate business management students' digital entrepreneurial intentions is having a conscientious personality that manifests itself in an intrinsic motivation to become a digital entrepreneur. This finding is consistent with Abuhamdeh and Csikszentmihalyi (2009) and Millman et al. (2010), who postulate that this personality trait is likely to exert a direct positive effect on an individual's intrinsic motivation to start a business that is driven by digital technology and innovation, and is likely to have an indirect positive effect on individuals' intentions to become digital entrepreneurs through their extrinsic motivation. In a more specific business context, Wang et al. (2016) propose a similar interplay between intrinsic and extrinsic motivation, arguing for the positive effect of their subjects' conscientious personality on their intentions to become cyber entrepreneurs through both intrinsic and extrinsic motivation. Based on these results, one can infer that both intrinsic and

extrinsic motivation are moderating variables between personality attributes and digital entrepreneurial intention, at least for conscientious personality types.

Because of their significant roles, intrinsic motivation and extrinsic motivation deserve further discussion. As the results in this study suggest, both should have a direct effect on an undergraduate business management student's digital entrepreneurial intentions. Similar conclusions have been reached in a large body of research on this subject. For instance, Hau et al.'s (2013) findings confirm the positive causal effects of intrinsic and extrinsic motivation on the level of entrepreneurial intention, and the interaction between the former and the latter in personalities is characterised by emotional stability. Likewise, Bolger et al. (1989) reason that individuals who are able to manage stress under a variety of circumstances are more likely to be extrinsically motivated to become online business entrepreneurs, while Yoo, Han, and Huang (2012) emphasise the positive effect of intrinsic motivation on extrinsic motivation.

Apart from the interrelationships between the personality trait of conscientiousness and intrinsic and extrinsic motivation, this study finds that agreeableness and openness to experience also appear to have a direct positive effect on undergraduate business management students' intrinsic motivation to become professional digital entrepreneurs. Empirical evidence of similar correlations is offered in Komarraju and Karau (2005) and in Jayawarna et al. (2013).

Finally, the results reported in this study demonstrate that, unlike the other personality traits named in Costa and McCrae's (1992) five-factor model, extroversion may have little, if any, effect on undergraduate business management students' intrinsic or extrinsic motivation to become professional digital entrepreneurs, at least with respect to students in Thailand. Since this finding is somewhat surprising, it would be inappropriate to draw any firm conclusions on the basis of this study alone. In fact, previous studies have revealed mixed results on this issue. Wang et al. (2016) report a negative correlation between extroverted undergraduate students and their intrinsic motivation to become cyber business entrepreneurs, but find no correlation between the traits of extroversion and conscientiousness and the students' extrinsic motivation. Similarly, Kingsley et al. (2016) found neither a positive nor a negative correlation between extroverted personalities and an extrinsic motivation to gain acceptance or wealth. In contrast, Ariani (2013) discovered that conscientiousness is negatively correlated with individuals' extrinsic motivation to engage in challenging business pursuits and achieve their goals.

6. CONCLUSIONS AND RECOMMENDATIONS

6.1. APPLICATION OF THE PRESENT FINDINGS

The findings presented here indicate there is a strong positive correlation between undergraduate business management students' conscientiousness and their intentions with respect to digital entrepreneurial that are derived from their intrinsic motivation. Based on this, several recommendations can be made. First, educational institutions and relevant business promotion agencies should work to instill this personality trait in this population through course work, extracurricular activities, and training programs. Instructional activities could involve case studies designed and managed in collaboration with business organisations to ensure that the target student population not only develops this desirable attribute but also gains hands-on experience and opportunities to sharpen their business skills in realistic and challenging settings.

Another powerful causal factor identified in this study is undergraduate business management students' extrinsic motivation. Therefore, it could be productive, in terms of encouraging more students to pursue digital entrepreneurship, and to create catalysts to support this external motivation. For example, certain activities could inform students of the success they could achieve by becoming a digital entrepreneur; programs could be established to help secure funding sources to support their efforts, and networks of more experienced entrepreneurs in the digital industry could be formed to encourage and mentor the students. Despite it being an outside force, extrinsic motivation, if properly reinforced, can influence students to develop their potential and aspirations to become digital entrepreneurs and create products and services that surpass customer expectations.

Finally, the lack of positive correlations between the personality traits of extroversion and conscientiousness among undergraduate business management students and their intrinsic and extrinsic motivation to become digital entrepreneurs has several implications. To begin with, educational institutions and relevant business promotion agencies should take measures to convince students of the economic benefits of digital businesses and the important role of digital entrepreneurship in advancing the economy. For example, activities could be organised in which the students utilise their knowledge and skills to run commercial projects or support the common good, such as running workshops to educate not-for-profit entities and SMEs about applying digital technology to create value. In other words, an educational environment that holistically strengthens both intrinsic and extrinsic motivation should be created.

6.2. FURTHER RESEARCH

This study has certain limitations, which suggest opportunities for furthering research in this area. Future research should employ a mixed approach that incorporates both quantitative and qualitative methods; the former will provide a solid scientific foundation, and the latter will supplement those findings and thus deepen the understanding of the phenomena.

Future research could place greater emphasis on other factors that may have a direct effect on digital entrepreneurial intentions, such as attitudes towards entrepreneurship, ambition for success, and innovative ability. In addition, moderating or intervening variables such as the technological acumen of digital entrepreneurs and volatility in the business environment are worth exploring. Additional research efforts could also examine the digital entrepreneurial intentions of students in other disciplines or regions. The findings obtained from such studies would enhance the understanding of the psychological mechanisms underlying digital entrepreneurial intentions. This, in turn, would assist relevant government authorities to devise measures to increase the number of future digital entrepreneurs and, ultimately, promote the growth of, and opportunities for digital SMEs in Thailand.

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