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The Influence of Malaysia's Digital Economy on Students' Entrepreneurial Characteristics and Entrepreneurship as Career Choices

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Abstract: The revolution of information and communications technology (ICT) has resulted in an emerging digital economy in all countries. Since the importance of entrepreneurship to the growth of Malaysia's economy has been growing, it give rise to the importance of entrepreneurship as career choices among the young generation. Hence, the current study seek to identify the relationship between the digital economy in Malaysia towards the entrepreneurial characteristics of the university students and entrepreneurship as career choices among them. A type of structural equation modeling (SEM) has been used in this study called Confirmatory Factor Analysis (CFA). From the results, when the four dimensions of digital economy aggregated into a single measure, it is proven that its effect into entrepreneurship characteristics is significant. However, out of the four dimensions of the digital economy in Malaysia, only social and cultural environment dimension and consumer and business adoption dimension are significantly affecting the entrepreneurial characteristics of the university students. The result also revealed that the entrepreneurial characteristics of the university students have no significant effect into entrepreneurship as career choices among them. Even though the students are possessing the entrepreneurial traits, they do not choose to become an entrepreneur in future.

Key words: Career Choices · Digital Economy · Entrepreneurial Characteristics · Malaysia

INTRODUCTION

The revolution of information and communications technology (ICT) has resulted in an evolving digital economy in all countries around the world. According to Johansson, Karlsson, & Stough [1], the digital economy has been the driver of the national economic growth whereby the level of adoption and application of ICT in various sectors and activities are different among countries. Since ICT provides the usage of digital technologies that facilitate the electronic transfer of information and communications, the way entrepreneurs do business has changed, as witnessed through the emergence of electronic commerce (e-commerce). In Malaysia, Alam, Ali, & Jani [2] discovered that the e-commerce adoptions among small and medium-sized enterprises (SMEs) are significantly impacted by the relative advantage, compatibility, organizational readiness, manager's characteristics and security.

In addition, since the importance of entrepreneurship to the growth of Malaysia's economy has been growing, there are initiatives taken by Malaysian government for the development of ICT infrastructure and e-commerce [3, 4]. Those initiatives have shown a positive feedback from the businesses all over the country [4]. As evidenced by the Malaysian government's support, it could not be denied that entrepreneurship plays a vital role in the economic growth of the country which consequently give rise to the importance of entrepreneurship as career choices among the young generation.

Hence, the current study seek to identify the relationship between the digital economy in Malaysia towards the entrepreneurial characteristics of the university students and the career choices among them. The digital economy consists of four respective dimensions i.e. connectivity and ICT infrastructure, business environment, social and cultural environment

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and consumer and business adoption. Specifically, the objectives of the study are to examine the influence of the four dimensions of Malaysia's digital economy on entrepreneurial characteristics of the university students and also to investigate the effect of the students' entrepreneurial characteristics into entrepreneurship as career choices.

The rest of the paper is organized as follows. Section 2 provides a discussion on literature review, while section 3 shows the research framework of the study. In section 4, the research methodology of this study is explained. The results from the hypothethical tests will be presented in section 5 to see whether the hypotheses are supported or not supported by the data. Consequently, the discussions on the obtained results will also be included in section 5. The conclusion of the study will be suggested in the later part of this paper.

Literature Review

The Dimensions of Digital Economy: The digital economy could be separated into four dimensions as explained by the Economist Intelligence Unit [5] in its report. They are connectivity and ICT infrastructure, business environment, social and cultural environment and consumer and business adoption.

The first dimension which is connectivity and technology infrastructure evaluates the extent to which individuals can access the internet and mobile networks [5]. The measuring items include broadband penetration, broadband quality, broadband affordability, mobile-phone penetration, mobile quality, internet user penetration, international internet bandwidth and internet security.

In evaluating the second dimension which is the general business environment, the indicators selected by Economist Intelligence Unit [5] are the strength of the economy, political stability, taxation, competition policy, the labor market and openness to trade and investment. The nine measuring criteria are overall political environment, macroeconomic environment, market opportunities, policy towards private enterprise, foreign investment policy, foreign trade and exchange regimes, tax regime, financing and the labor market.

For the purpose of evaluation of social and cultural environment dimension, education is a precondition to being able to utilize internet services. Economist Intelligence Unit [5] also considered the evaluation of the technical skills indicated by familiarity with information technology (IT) applications and the education infrastructure provided by the schools and government, assessment of entrepreneurship and the innovation levels. The examples of the measuring criteria are educational level, internet literacy, degree of entrepreneurship, technical skills of workforce and degree of innovation.

In order to evaluate the consumer and business adoption dimension, the Economist Intelligence Unit [5] looks at the amount that businesses and consumers spend on accessing ICT services, the extent and range of internet features used by consumers, their online purchasing activity and the use of online public services that have been made available by both consumer and business. The measuring criteria for this dimension include consumer spending on ICT per head, level of e-business development, use of internet by consumers, assessing both the range of internet features used by individuals and their online purchasing activity, use of online public services by citizens and businesses.

The Entrepreneurial Traits: There are eight entrepreneurial characteristics essential for entrepreneurs and those traits are desire for responsibility, preference for moderate risk, confidence in their ability to succeed, desire for immediate feedback, high level of energy, future orientation, skill at organizing and value achievement over money [6]. Entrepreneurs need to feel responsible for the business they start, are calculated risks takers, must be optimistic about their chance for success, are continuously looking for feedback on their ideas and business, more energetic than the average person, able to visualize business opportunities in the future, know how to gather the right team and resources and care not only money, but also doing what seems impossible [6].

Research Framework: The research framework illustrated in Figure 1 attempts to explain the relationship between the four dimensions of digital economy in Malaysia towards entrepreneurial characteristics and also the relationship between entrepreneurial characteristics towards career choices. H1, H2, H3 and H4 are generated to examine the influence of the four dimensions of digital economy which are connectivity and ICT infrastructure, business environment, social and cultural environment and consumer and business adoption, towards the entrepreneurial characteristics of the university students. Meanwhile, H5 is developed to determine the impact of the dimensions when combined into a single measure on the entrepreneurial characteristics of the students. Last but not least, H6 is formulated to investigate the effect of the students' entrepreneurial characteristics into entrepreneurship as their career choices.

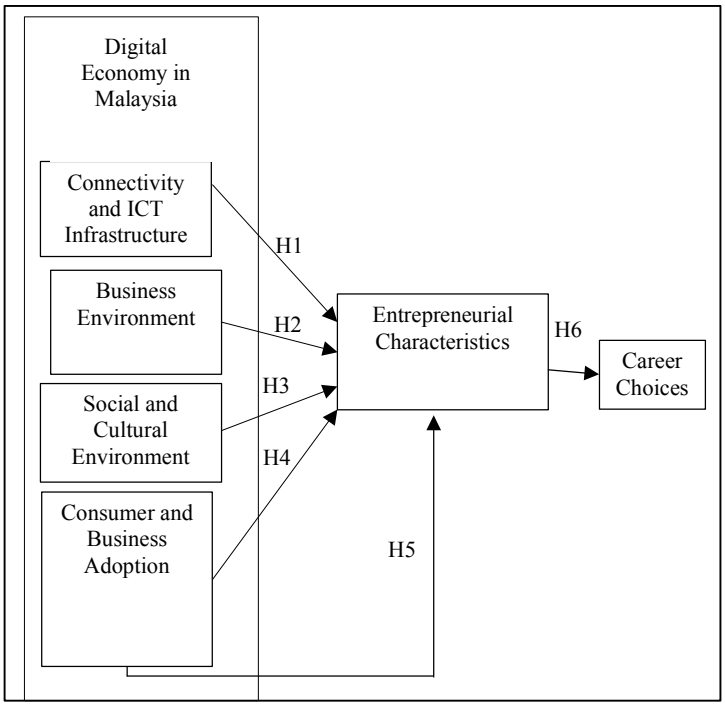

Fig. 1: Research Framework

Research Methodology: A sample of 360 students was randomly selected from Public University and Private University. However, only 295 questionnaires were found to be usable.The questionnaire survey of this study consisted of two sections. The first section referred to the demographic profiles of the respondents such as gender, age and type of university. The later section focused on the research objectives by identifying the digital economy, entrepreneurial characteristics and career choices of the students.

Correlation analysis was used to determine the strength of relationship between two variables in the sample. In this study, correlation analysis was used using Pearson coefficient to measure the strength of relationship between two variables which the value of the correlation coefficient is ranking from -1 to 1 by Deborah [7]. Then, the significant of the correlation coefficient indicates the direction of the relationship (positive or negative). From the result of the analysis, all Pearson values are greater than 0.0 but below 0.5 which means all the items have weak positive relationship with each other.

Reliability is specified as a coefficient ranging 0.00 to 1.00. Cronbach's alpha is used as a measure of the internal consistency reliability. As suggested by Nunnaly [8], it shows acceptable reliability if an alpha exceeded 0.5. In this study, the values of Cronbach's alpha are greater than 0.5 for each variable. Then, the questionnaire is considered reliable.

A type of structural equation modeling (SEM) has been used in this study called Confirmatory Factor Analysis (CFA). CFA deals specifically with measurement model that is the relationship between observed measures and latent variables [9]. From the study, latent variable was determined as shown in the framework. Second Order Confirmatory Factor Analysis (CFA) is used because of latent variable has two or more components for its measurement variables.The examination of correlation of latent variables is one of the evaluation on analysis of the structural model. In order for the significance of every coefficient that represents hypothesized causal relation to be tested systematically, the significance degree must reach alpha = 0.05 and t-value >= 1.96.

By using Goodness of Fit (GOF), discrepancy could be valued to justify the accuracy of the statistical model and the sample approximations have to be large so as to be more accurate [10]. The following table shows that the model fit compares the theory to reality by assessing the similarity of the estimated covariance matrix (theory) to the reality (the observed covariance matrix). All the indicator model shows marginal fit because of the value is <0.90. The result for goodness for fit testing in this research is as follows:

Table 1: Design Summary for Goodness for Fit Testing Model

GOF Indicator	Estimated Value	Testing Result	Conclusion
Absolute Fit Value			
GFI	GFI > 0.90	0.690	Marginal Fit
RMSEA	RMSEA < 0.08	0.158	Marginal Fit
Incremental Fit Value			
NNFI	NNFI > 0.90	0.668	Marginal Fit
NFI	NFI > 0.90	0.728	Marginal Fit
AGFI	AGFI > 0.90	0.570	Marginal Fit
RFI	RFI > 0.90	0.660	Marginal Fit
IFI	IFI > 0.90	0.752	Marginal Fit
CFI	CFI > 0.90	0.750	Marginal Fit

RESULTS AND DISCUSSIONS

From the data analysis as shown in the structural diagram in Figure 2 and Figure 3, this study able to create a Structural EquationModel for Entrepreneurial Characteristics and Career Choices as follows:

Structural Equations:

EC = 0.0103*ICT + 0.0370*BE + 0.0663*SCE + 0.662*CBA, Errorvar. = 0.527, R^2 = 0.473
(0.0332) (0.0424) (0.0319) (0.0493) (0.0324) 0.309 0.873 2.079 13.434 16.273

CC = 0.184*EC + 0.0369*ICT + 0.232*BE + 0.370*SCE - 0.00190*CBA, Errorvar. = 0.662, R^2 = 0.338
(0.102) (0.128)(0.143)(0.0937)(0.0761)(0.136)
1.794 0.289 1.623 3.951 -0.0250 4.875

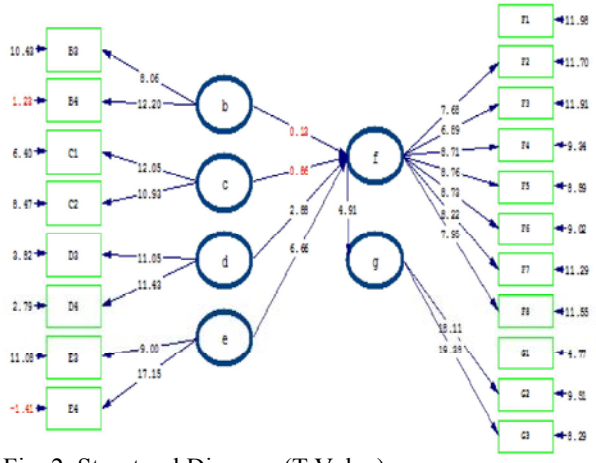

Fig. 2: Structural Diagram (T Value)

Some of the hypotheses tested are supported by the collected data, while some are not, which are indicated by the results of the hypothetical tests.

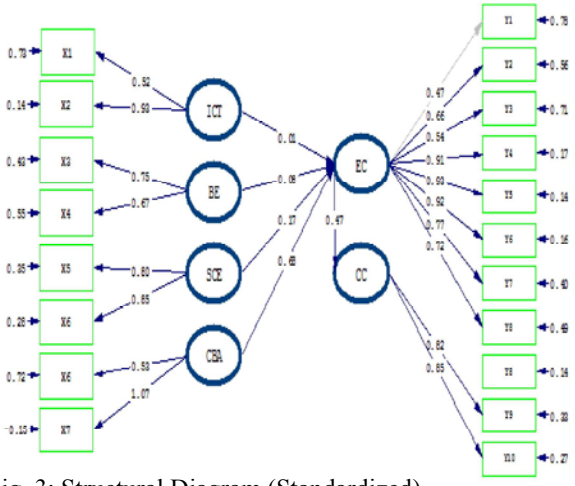

Fig. 3: Structural Diagram (Standardized)

Hypothesis 1: There is no significant effect between connectivity and ICT infrastructure into entrepreneurial characteristics of the university students. Connectivity and ICT infrastructure has no effect into the entrepreneurial characteristics, because the *t*-value is < 2 (0.309 < 2), with the rate of effect of only 0.01.

Hypothesis 2: There is no significant effect between business environment into entrepreneurial characteristics of the university students. The *t*-value is < 2 (0.873 < 2), with the rate of effect of only 0.08, showing that business environment has no effect into the entrepreneurial characteristics.

Hypothesis 3: There is a significant effect between social and cultural environment into entrepreneurial characteristics of the university students. Social and cultural environment is the dimension that has the second highest effect into entrepreneurial characteristics, reflected by *t*-value> 2 (2.079 > 2), with the rate of effect of 0.17.

Hypothesis 4: There is a significant effect between consumer and business adoption into entrepreneurial characteristics of the university students. Consumer and business adoption has the greatest effect among the dimensions into entrepreneurial characteristics, since the *t*-value is > 2 (13.434 > 2), with the contribution rate of 68%.

Hypothesis 5: There is a significant effect between all dimensions of Malaysia's digital economy into entrepreneurial characteristics of the university students. Connectivity and ICT infrastructure, business environment, social and cultural environment and also consumer and business adoption are proven to have powerful effect into entrepreneurship characteristics with *t*-value> 2 (16.273 > 2), with the contribution rate of 32%.

Hypothesis 6: There is no significant effect between entrepreneurial characteristics into career choices. Entrepreneurship characteristics are found to have no effect into entrepreneurship as career choices among the university students evidenced by *t*-value < 2 (1.794 < 2), with the contribution rate of 47%.

From the results, when the four dimensions of digital economy aggregated into a single measure, it is proven that its effect into entrepreneurship characteristics is significant. However, out of the four dimensions of the digital economy in Malaysia, only social and cultural environment dimension and consumer and business adoption dimension are significantly affecting the entrepreneurial characteristics of the university students. The social and cultural environment has the second highest effect into the entrepreneurial characteristics which is in line withthe previous study that found Malaysian students who had attends entrepreneur courses having a positive attitude to entrepreneurship, specifically attitude on the personal control and having self-esteem to start a new business [11]. Keat, Selvarajah, & Meyer [12] also unveiled that the Malaysia university's role to promote entrepreneurship and the entrepreneurial curriculum have significant impact on students' inclination towards entrepreneurship. The underlying reason for the consumer and business adoption dimension to have the greatest effect into entrepreneurial characteristics could be due to the increasing rate of internet users, online spending and adopting of new technologies, which have been identifiedasthe key drivers for the development of e-commerce in Malaysia [7].

Apart from that, the result revealed that the entrepreneurial characteristics of the university students have no significant effect into entrepreneurship as career choices among them. Even though the students are possessing the entrepreneurial traits, they do not choose to become an entrepreneur in future, but consider to work in private or public sectors. This is due to the reasons that the interest of certain persons for an entrepreneurial career not only relying on entrepreneurial characteristics, but on other factors as well such as opinions, perceptions of risks and rewards, self-efficiency, parental support, motivation, values, the environment and attitudes towards self-employment and entrepreneurship [13]. Keat *et al*. [12] also highlighted that family business background and demographic variables such as gender and previous working experience significantly increasing their probability of being entrepreneurs. Students whose parents are self-employed, male in gender and having previous working experience found out to be more interested towards entrepreneurship [12].

CONCLUSION

Since the digital economy in Malaysia, especially through the dimensions of social and cultural environment and consumer and business adoption, evidenced to give a significant impact on the entrepreneurial characteristics of the university students, the Malaysian government should keep on supporting the development of the digital economy in the country in an effort to produce more credible entrepreneurs from the younger generation in the future which will contribute to rapid growth of the economy of the country as a consequence.Nevertheless, despite the entrepreneurial traits the students possessed, their reluctance to choose entrepreneurship as their career choices need to be taken into consideration. The education providers, particularly the higher institution of learning or university, need to put in place more entrepreneurship programmes to increase the motivation of the students to choose self-employment as their future career, due to the fact that students choose one career or another according totheir expectations of employment [14]. If they have positive expectations and being optimistic on becoming entrepreneurs, probably by understanding of the perceived risks and having good perception on the associated rewards, they would be willing to start up their own businesses in future.

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