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THE EFFECT OF PERSONALITY TRAITS ON THE PERFORMANCE OF STUDENT ENTERPRISES

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Abstract

The study of the performance of student enterprises is relatively new, particularly in developing countries like Malaysia. Research into this topic is very important because several past studies have indicated that student enterprises have had an unimpressive performance record. Therefore, this study is designed to measure the effect of personality traits on the performance of student enterprises in Malaysian higher education institutions. This knowledge is important because the positive performance of student enterprises would encourage the government to produce job creators among university students. A cluster sampling technique was used to select 369 founders of student enterprises in Malaysian public higher education institutions, using an online survey and analysis using partial least squares structural equation modelling (PLS-SEM). Results found that innovativeness, locus of control and self-efficacy supported the performance and success of student enterprises, whereas the need for achievement and the propensity for risk taking did not influence the performance of student enterprises. This study has provided theoretical contributions to the literature and provides further insights into measuring the performance of student enterprises, particularly in Malaysia. This study could also assist policymakers and universities to reduce the number of unemployed graduates.

Keywords: Personality traits; Performance of student enterprises; Malaysian public higher educational institutions.

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1. Introduction

In the 20th and 21st centuries universities were, and still are, seen as essential players in the regional entrepreneurial environment. They can affect the social growth of a country or province through the creation of new ventures that add value through knowledge creation (Corsi & Prencipe, 2016; Miller & Acs, 2017; Mohd Yasin & Mohd Osman, 2015). This has led governments and universities of both advanced and developing countries around the world, to endeavor to create and facilitate the establishment of university enterprises (Kirby, 2002; 2006; Koh & Wong, 2005). Academic spin-offs and student enterprises (SEP) have therefore become a priority for both universities and local governments (Potter & Storey, 2007). SEP can be defined as students who set up a new venture or enterprise (alone or with others) within college campuses, based on curricular programmes and noncurricular activities, that have a for- profit objective (Bailetti, 2011; Gupta & Gupta, 2017; Hornsby et al., 2018). By engaging in entrepreneurial activities, the students practice their knowledge of accounting, law, economics, marketing and personnel management (Macfarlane & Tomlinson, 1993). This allows them to become aware of their business strengths and skill gaps in relation to planning, developing and controlling business activities whilst still at university (Wong et al., 2014).

Like any other businesses, measuring the performance of SEPs is critical to be implemented because the success of SEPs have contributed to gross economic development, new innovations, increased productivity levels, job creation, the attraction of investment and, in a significant way, to a university's creativity and productivity (Guerrero et al., 2016; Leire et al., 2016). For instance, SEPs and academic spin-offs created 3 million jobs in the United States of America (USA) in the past 30 years, generated US$388 billion in gross domestic production and introduced 719 new products to the marketplace (Association of University Technology Managers, 2015). While SEPs in Italy, Norway and the UK have also helped to create many jobs (Fini et al., 2017). Sieger et al. (2016) mentioned that the study of SEPs' outcomes could be found in many developed countries than developing countries. On another note, entrepreneurship literature (e.g. Chatterjee & Das, 2015; Tamar et al., 2019; Zhao et al., 2010; Zhao et al., 2012; Zhao & Jung, 2018) described the positive links between personality traits and new venture performance. Wickham (2017) also clearly mentioned that personality traits are the critical element in the success of a new venture. In conjunction to this, the current study focus to measure the effect of personality traits on the performance of SEPs.

In Malaysia, the performance of SEPs should be measured because the government saw this as one of the ways to reduce the high number of unemployed graduates (Central Bank of Malaysia, 2014). Labour force statistics revealed that more than 500, 000 unemployed people in May 2019, with the majority of them being undergraduates (Department of Statistics Malaysia, 2019). In addition, government and universities in Malaysia established entrepreneurship professorships, entrepreneurship education, entrepreneurship programs, business incubators and accelerator programs, centers for entrepreneurship and numerous policies (e.g. Higher Education Entrepreneurship Development Policy (2010), Strategic Plan for Entrepreneurship Development in Higher Education (2013-2015) and Higher Education Institution Entrepreneur Action Plan 2016-2020) (Ministry of Higher Education, 2016; Yusoff et al., 2015). Furthermore, in 2015, the Malaysian Ministry of Higher Education (MoHE) launched the Malaysia Education Blueprint 2015-2025: Higher Education (Ministry of Education Malaysia, 2015). The Shift-1 of

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MEB indicated that Malaysian HEIs should produce holistic, entrepreneurial, and well-balanced graduates who could eventually be job creators rather than job seekers (Ministry of Education Malaysia, 2015). These initiatives have also justified the need to measure performance of SEPs.

According to Mohamed Said (2017), only 9,998 students from Malaysian public universities, polytechnics and community colleges have established SEPs in various business areas such as retail goods, souvenirs, stationery, clothes, phones, software development, cybercafé/computers, photocopying, photography, reading materials, food like burgers/cakes/buns, and ticket/transportation reservation services. The number is considered low compare to SEPs in developed countries because MoHE aimed to have 15 percent of students involved in businesses while study and 5 percent of job creator graduates by 2020 (Ngah & Osman, 2017) and, worryingly, this could be related to the unimpressive performance of SEPs (Othman & Nasrudin, 2016). The findings could extend research focuses on the effect of personality traits on performance of SEPs in the context of developing country. Other than that, this paper also describes the adopted existing theory (Resource-Based View Theory) by providing empirical evidence of personality traits-performance of SEPs linkage. The outcomes might also assist the Ministry of Education (MoE), universities and founders of SEPs to identify the right personality traits that lead to business success and produce job creators among university students.

2. Problem Statement

Many scholars have connected founders' personality traits to the level of venture performance. For instance, Hornsby et al. (2018) found that personality traits contributed to lower performances of SEPs in several developed countries. The majority of founders of SEPs in the UK and several other developed countries like Italy, Spain, and Poland cited lack of skills and personality shortcomings resulting in low performance levels of SEPs (Preedy, 2015; Preedy & Jones, 2017; Seet et al., 2018; Smith & Clegg, 2017; Staniewski & Szopinski, 2015; Venesaar et al., 2014). Although, the study of SEP performance is relatively new in developing countries it is capturing the attention of scholars, governments, and policymakers (Hayter et al., 2016; Gupta & Gupta, 2017; Manbachi et al., 2018).

In the Malaysian context, Ridzwan et al. (2017) indicated that only 20 percent of SEPs survive. They claimed that an inability to manage resources and lack of enterprise skills and personality have contributed to the poor performance of SEPs in Malaysian universities. Similarly, Sieger et al. (2016) highlighted constraints that brought about negative performances of SEPs in 50 countries including Malaysia. The lower performance of SEPs will directly impact the targets set in the Higher Education Institution Entrepreneur Action Plan 2016-2020 which states that 15 percent of students must be involved in business enterprises as part of their studies, by 2020.

3. Research Questions

The research question for this current study is as follows: What are the effects of personality traits on performance of SEPs?

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4. Purpose of the Study

The purpose of the present study is to assess whether the performance of SEPs can be examined through identifiable personality traits.

5. Research Methods

The current study gathered 369 completed questionnaires from the founders of SEPs from eleven Malaysian public HEIs. All respondents were approached online (email) during the data collection period (June 2017). This study used a cross-sectional study and cluster sampling technique to capture the respondents. The questionnaire consists of two parts. The first part is generally for exogenous and endogenous variables and the second part explains the respondent's profile. The items in the survey were developed based on multiple indicator measurement scales adapted from the previous works of Davidsson (1995), Dinis et al. (2013), Pihie and Bagheri (2013) and Huynh and Patton (2014). To examine the performance of an SEP, this study employed the three most common measurements of performance such as financial performance, operational measures, and marketing performance. Most of the indicators were re-worded to match the performance of SEPs in the Malaysian Public HEIs context. Table 01 summarizes the constructs and sources adapted in this current study. The data was tested using partial least squares structural equation modeling (PLS-SEM).

Table 01. Constructs and sources

Construct/Number of items	Source	Scale
Need for achievement/4 Innovativeness/4 Propensity of risk taking/4 Locus of control/4 Self-efficacy/4	Davidsson (1995); Dinis et al. (2013); and Pihie and Bagheri (2013)	1 = Strongly disagree – 5 = Strongly agree
Performance of SEPs/10	Huynh and Patton (2014)	1 = Much lower – 5 = Much higher

In addition, Figure 01 shows a conceptual framework used in this current study. The framework indicate the personality traits like need for achievement, innovativeness, propensity of risk taking, locus of control and self-efficacy as exogenous factors and while, performance of SEP as endogenous construct. The constructs were measured using reflective indicators which shows a direction of causality from the exogenous to the endogenous item (Jarvis et al., 2003).

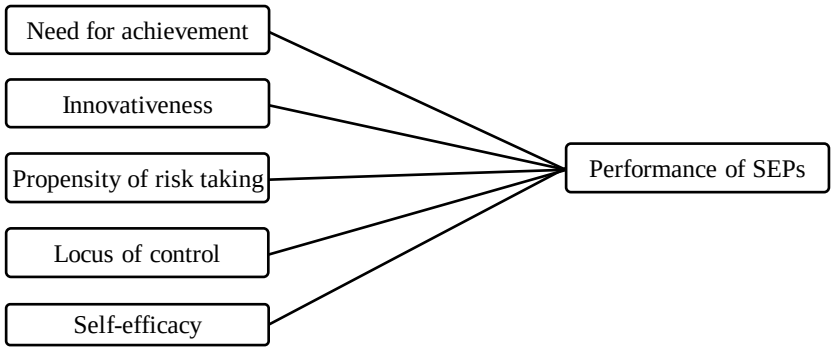

Figure 01. Conceptual framework

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6. Findings

The current study recorded that respondents were varied in terms of gender, age, ethnicity, place of origin, level of study, religion, year of study, type of public university and nature of business. For instance, 59.1 percent, or more than half, of the respondents were female and 40.9 percent were male. Additionally, the majority (86.7 percent) of the respondents were aged between 21 and 25, followed by 20 years of age or below, at 6.5 percent. With regards to ethnicity, almost all of respondents were Malay (85.6 percent), followed by Chinese (6.5 percent) and Indian (4.9 percent). The majority of participants (88.6 percent) were Islamic followed by Buddhist at 5.1 percent. As for place of origin, 52.5 percent of respondents were from urban areas. Only 13.8 percent of the respondents were postgraduate students while the other 85.4 percent were undergraduate students. The majority of respondents were in year 2, 3 and 4 of their studies at 31.7 percent, 31.4 percent and 29.6 percent respectively. Also, 63.4 percent of participants were from a focused university, followed by a research university (26.8 percent) and comprehensive university at 9.8 percent. Finally, the nature of the businesses operated by respondents was mostly service-oriented at 54.2 percent, compared to product-oriented at 45.8 percent.

In this study, the measurement of the study constructs is only based on the judgment of single individuals (founders of SEPs) in Malaysian public HEIs which could result in common method bias. Therefore, this current study has used two statistical remedies to test the common method bias. Firstly, this study applied a Harman's single-factor test to check the common method bias (as recommended by Podsakoff et al., 2012). In this approach, all items (measuring latent variables) are loaded into one common factor and if the total variance for a single factor is less than 50 percent, it shows that common method bias does not affect the data or the results (Podsakoff et al., 2012). For this study, the percentage variance of a single factor was 28.8 percent, less than the threshold value. Hence, there is no common method bias that will affect the data or the results. Secondly, by checking the correlation matrix as suggested by Bagozzi et al. (1991) the results of the correlation matrix show no high correlations between the constructs. The majority of correlation coefficients are moderately correlated (Hair et al., 2007). The lowest value was recorded at -0.160 (significant at 0.05 level) and 0.668 was the highest value (significant at 0.05 level). None of the correlation coefficient values achieved more than 0.91 which is considered highly correlated (Hair et al., 2007). Thus, no initial evidence of a possible common method bias in this study (Bagozzi et al., 1991).

To measure the measurement model, several tests have been administered. Among them were the indicator reliability test, reliability test, convergent and discriminant validity tests. In this study the reflective indicators with loadings equal to or greater than 0.50 were accepted. The reflective indicator loadings below the acceptable value (0.40) will be removed as suggested by Duarte and Raposo (2010) and Hair et al. (2014). Table 02 shows the loading of the indicator. It was discovered that all 30 items were above the acceptable benchmark of 0.40. The loadings were between 0.519 and 0.861. In this study, the reliability/internal consistency of the constructs was determined by using the composite reliability (CR). Table 02 displays the number of indicators for each construct, the values of CR which were ranged from 0.833 to 0.929 and according to Fornell and Larcker (1981) a CR of 0.70 or greater is considered acceptable and reliable.

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Table 02 also explains the results of the convergent validity analysis which was tested using average variance extracted (AVE). The results showed that the AVE range of 0.556 to 0.685 is above the accepted value (Fornell & Larcker, 1981). Thus, the results indicate that these indicators satisfied the requirement for the convergent validity of their respective constructs. Additionally, to check the multicollinearity issue, the variance inflation factors (VIF) have been tested in the present study. As illustrated in Table 02, the VIF values for all constructs were below than 3.0, showing that multicollinearity is not a serious issue in this study (Diamantopoulos & Siguaw, 2006). In addition, the R2 was at 0.277, indicating that the personality traits only influenced the endogenous factor at 27.7 percent.

Table 02. Loading of indicator, CR, AVE and VIF

Constructs	Items	Loadings	Composite reliability	AVE	VIF
Need for achievement (NA)			0.862	0.610	1.825
	NA1	0.837			
	NA2	0.618			
	NA3	0.823			
	NA4	0.809			
Innovativeness (IN)			0.857	0.604	2.086
	IN1	0.757			
	IN2	0.773			
	IN3	0.680			
	IN4	0.770			
Propensity of risk taking (RT)			0.843	0.576	1.788
	RT1	0.844			
	RT2	0.733			
	RT3	0.795			
	RT4	0.747			
Locus of control (LC)			0.833	0.556	1.933
	LC1	0.636			
	LC2	0.823			
	LC3	0.788			
	LC4	0.774			
Self-efficacy (SE)			0.897	0.685	1.679
	SE1	0.839			
	SE2	0.773			
	SE3	0.861			
	SE4	0.836			
Performance of SEPs (PSE)			0.929	0.569	
	PSF1	0.829			
	PSF2	0.815			
	PSF3	0.778			
	PSM1	0.765			
	PSM2	0.784			
	PSM3	0.721			
	PSM4	0.519			
	PSO1	0.765			
	PSO2	0.779			
	PSO3	0.743			

Notes: AVE = Average Variance Extracted; R^2 =.277; VIF = Collinearity Statistics

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To check the discriminant validity, this study used the heterotrait-monotrait ratio of correlations (HTMT). HTMT incorporates two techniques to measure the discriminant validity. The first technique is called the criterion or statistical test. To achieve discriminant validity using the statistical test, the HTMT value should not be greater than the HTMT.85 value of .85 (Kline, 2011), or the HTMT.90 value of .90 (Teo, Srivastava and Jiang, 2008). As shown in Table 03, all values have passed HTMT.85 measures (Kline, 2011; Henseler et al., 2015). The second technique is known as $HTMT_{Inference}$. This technique was employed to test the null hypothesis (H0: HTMT ≥ 1) compared to the alternative hypothesis (H1: HTMT < 1). The issue of discriminant validity is identified if the confidence interval contains the value of 1. The results of $HTMT_{Inference}$ (second method) shown in Table 03 revealed that the confidence interval value for each construct is below 1. Thus, the discriminant validity has been established for the research constructs.

Table 03. Heterotrait-Monotrait Ratio (HTMT)

Constructs	IN	LC	NA	RT	SE	PSE
Innovativeness (IN)						
Locus of control (LC)	0.788[a] 0.701; 0.866[b]					
Need for achievement (NA)	0.683 0.584; 0.768	0.738 0.646; 0.822				
Propensity of risk taking (RT)	0.789 0.700; 0.866	0.672 0.552; 0.770	0.640 0.532;0.734			
Self-efficacy (SE)	0.617 0.523;0.699	0.692 0.601;0.770	0.664 0.573;0.746	0.525 0.413;0.626		
Performance of SEPs (PSE)	0.532 0.423;0.625	0.538 0.438;0.637	0.385 0.274;0.491	0.425 0.299;0.546	0.459 0.333;0.572	

Notes: [a] The criterion for HTMT ratio is below .85; [b] The criterion for HTMT upper confidence intervals (CI) is below 1

Finally, to test the proposed hypotheses this study tested the structural model and followed suggestions by Hair et al. (2014) where all the data was run using 5000 bootstrapped samples. Table 04 shows that only three hypotheses were supported by results (H2: b = 0.235, t = 3.324, *p<.01; H4: b = 0.197, t = 3.011, *p<.01; H5: b = 0.158, t = 1.968, *p<.05). The current study was able to prove the positive impact of innovativeness (Hypothesis 2), locus of control (Hypothesis 4) and self-efficacy (Hypothesis 5) on performance of SEPs. The findings are in line with previous researchers such as Ong and Ismail (2013), Agca and Kizildag (2013), Hallak et al. (2014), Chatterjee and Das (2015), Barazandeh et al. (2015), Lisboa et al. (2016), Danso et al. (2016), Bahari et al. (2017), Ozaralli and Rivenburgh (2016), Mahmood et al. (2017), Meroño-Cerdán et al. (2018) and Isaga (2018). On the other hand, other personality traits such as need for achievement (Hypothesis 1) and propensity of risk taking (Hypothesis 3) were not shown to have a positive link with performance of SEPs by results (H1: b = -0.014, t = 0.179; H3: b = 0.060, t = 0.870). The results are consistent with the works of Frank et al. (2007), Agca and Kizildag (2013), LeRoux and Bengesi (2014), Lomberg et al. (2016) and Kapaya et al. (2018). Moreover, the f^2 effect sizes for supported hypotheses were considered small (see Table 04) as recommended by Cohen (1988), an f^2 of 0.02 is considered a small effect, 0.15 a medium effect and 0.35 as a large effect. The findings are in line with a study by Walter and Heinrichs (2015) who reported small and weak effect sizes of those constructs. Importantly, the Resource-Based View Theory was also supported even though the R^2 value was quite

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small. These traits are considered very critical which enable the founders to be aware of opportunities and assemble resources needed to exploit these opportunities to generate a profit (Alvarez & Busenitz, 2001). The findings get empirical support from Pazos et al. (2012) and Huynh and Patton (2014) who adopted this theory and studied the role of personality traits on venture performance.

Table 04. Hypothesis testing

Relationship	Hypothesis	Std. Beta	Std. Error	t-value	Decision	f^2	Verdict
NA -> PSE	H1	-0.014	0.079	0.179	Not supported	0.000	No effect
IN -> PSE	H2	0.235*	0.071	3.324	Supported	0.037	Small
RT -> PSE	H3	0.060	0.069	0.870	Not supported	0.003	No effect
LC -> PSE	H4	0.197*	0.065	3.011	Supported	0.028	Small
SE -> PSE	H5	0.158**	0.080	1.968	Supported	0.021	Small

Notes: *p<.01; **p<.05; NA = Need for achievement, IN = Innovativeness, RT = Propensity of risk taking, LC = Locus of control, SE = Self-efficacy, PSE = Performance of SEPs

7. Conclusion

The findings reveal that only innovativeness, locus of control and self-efficacy have a positive impact on performance of SEPs, while the need for achievement and propensity for risk taking were unable to demonstrate a significant effect on performance of SEPs. This study is designed to contribute to university students (prospective founders of SEP), founders of SEPs, universities and the government. By knowing the personality traits that influence the performance of SEPs, the prospects of SEPs, founders of SEPs and universities could attend to or implement relevant courses, workshops, seminars and entrepreneurship education to support the fostering of personality traits which contribute to the better performance of SEPs. Therefore, Shift-1 of MEB and latter 15 percent of university students involved in businesses while studies and 5 percent of job creator graduates could be established by the year 2020. This study only focuses on public HEIs, hence a similar study could be extended to private HEIs for generalizability purposes. In addition, results indicate that the personality traits only show small effect sizes on the performance of SEPs. Therefore, the introduction of other personality traits and other variables such as university support and entrepreneurial environment support could be used to measure the performance of SEPs in the future.

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