

Government Institutions, Entrepreneurship Education and Entrepreneurship Education Programmes in Malaysia

Abstract

Purpose – This study examines the status of entrepreneurship education (EE) in Malaysia and entrepreneurship education programmes (EEPs) offered by Malaysian public and private higher education institutions (HEIs), against the backdrop of macro level context of Malaysian government institutions related to entrepreneurship.

Design/methodology/approach – This study replicates and extends the research by Maritz et al. (2015) and Maritz et al. (2019). The study expands a nascent archetype regarding an iterative and systematic open-ended emergent enquiry, together with data collection from Malaysian HEIs.

Findings – Findings suggest significant emergence of EE (programmes and research) in Malaysia, despite EEPs being sparsely distributed across HEIs in the bottom half of Table 1. The top 10 HEIs (12% of all HEIs in Table 1) accounted for 35% of all EEPs. This study highlights the significant influence of Malaysian government institutions related to entrepreneurship on EE and EEPs.

Research limitations – Findings are subject to the availability and accuracy of information and documents available on official websites of HEIs. This limitation has been mitigated with telephone and email inquiries and other sources of information.

Practical implications – The findings provide critical grounding and inferences on the status of EE and EEPs in Malaysia for researchers, practitioners, HEIs, governments and other stakeholders.

Originality/value – This study is first of its kind on emergent enquiry into the status of EE in Malaysia and EEPs offered by 19 public HEIs and 67 private HEIs in Malaysia. Moreover, this study links macro level context of the Malaysian government institutions related to entrepreneurship with micro level context of EE and EEPs.

Keywords – Entrepreneurship education, entrepreneurship education programmes, public and private HEIs, government institutions related to entrepreneurship, Malaysia.

Paper type – Research paper.

Introduction

Entrepreneurship education – programmes and research in entrepreneurship – is increasingly viewed as a source of economic growth and revitalisation (Hägg & Gabrielsson, 2019; Maritz et al., 2019), consequently receiving growing attention from academics, practitioners and policy-makers. This study uses the term entrepreneurship education (EE) from a startup perspective focussing on venture creation and an enterprising perspective focussing more broadly on personal development, mindset, skills and abilities (Jones, Matlay, & Maritz, 2012; Maritz & Donovan, 2015; QAA, 2018). Recent developments include entrepreneurship ecosystems and institutional contexts in the development of EE (Looi & Klobas, 2020; Roundy,

Brockman, & Bradshaw, 2017; Spigel, 2017), particularly regarding the growth and interest in entrepreneurship education programmes (EEPs) (Jones et al., 2012; Maritz & Brown, 2013; Maritz, Jones, & Shwetzzer, 2015; Maritz et al., 2019).

However, research on EEPs is a young and fragmented field, identifying specific contexts, frameworks, models and components that such EEPs should encompass (Nabi, Liñán, Fayolle, Krueger, & Walmsley, 2017; Neck & Corbett, 2018). Global specific contexts have resulted in sparse research on EEPs within country perspectives, even more so when comparing multiple higher education institutions (HEIs) within country contexts and perspectives (Ahmad & Buchanan, 2015; Belitski & Heron, 2017; Kuratko & Morris, 2018; OECD/EU, 2018). Furthermore, research on EE is usually centred on students, outcomes, pedagogy and content of individual EEPs (Fayolle & Gailly, 2008; Hägg & Gabrielsson, 2019), as opposed to comparison among multiple EEPs (Maritz et al., 2019).

The integration of entrepreneurship, EE and EEPs in the context of Malaysia suggests three main patterns. First, this study examines the nexus between EE/EEPs and government institutions related to entrepreneurship, referred to as government institutions in this study. Second, this study identifies the body of knowledge regarding the scholarship of EE related to Malaysia. Third, this study provides inferences of EEPs offered by Malaysian public and private HEIs. These three distinct, yet related research gaps form the rationale for this study. New insights from this study provide a neoteric approach to the distribution of EEPs in Malaysia, resulting from government, NGO and privately funded HEI initiatives.

Entrepreneurship occurs within specific contexts (for example, spatial, temporal, social and institutional) that motivate, generate, enable or constrain entrepreneurial behaviours (Gaddefors & Anderson, 2017; Scott, 2014; Smallbone, Welter, & Ateljevic, 2014; Welter, 2011; Welter & Smallbone, 2011; Zahra, 2007; Zahra, Korri, & Yu, 2005; Zahra & Wright, 2011; Zahra, Wright, & Abdelgawad, 2014). Different institutional contexts produce

heterogeneity of entrepreneurial responses (Welter & Smallbone, 2011), including prevalence of EE and EEPs.

This study acknowledges the critical and dynamic influence of contexts (Welter, 2011; Zahra, 2007; Zahra & Wright, 2011; Zahra et al., 2014) by linking macro context of the government institutions with micro contexts of EE and EEPs (Bruton, Ahlstrom, & Li, 2010). This study commences with a review of entrepreneurship and entrepreneurship education in Malaysia, followed by replication and extension of research by Maritz et al. (2015) and Maritz et al. (2019) in the form of a quantitative examination of EEP offerings by public and private HEIs in Malaysia. In the Findings and Discussion section, this study provides outcomes of the quantitative component; concluding with implications and suggestions for directions of future research in this rapid-changing environment. To provide contextualisation, this study provides inferences regarding the current COVID-19 pandemic, as this research was conducted at the peak of the pandemic; mindful of the uncertainty and devastating economic woes associated with COVID-19 pandemic.

Entrepreneurship in Malaysia

This section provides an overview of macro context of entrepreneurship in Malaysia, with reference to various indicators and resources, such as the Global Entrepreneurship Monitor (GEM), Ministry of Entrepreneur Development and Co-operatives, National Entrepreneurship Policy, SME Corporation Malaysia, National Institute of Entrepreneurship, Malaysian Global Innovation and Creativity Centre and other significant players in Malaysian entrepreneurial ecosystem. Official websites for government institutions related to entrepreneurship is depicted in Appendix 1. Please refer to Looi and Klobas (2020) for a review of Malaysian institutional context related to entrepreneurship.

Global Entrepreneurship Monitor Global Report 2017/18

According to Global Entrepreneurship Monitor Global Report 2017/18 (2018), Malaysia scored -0.03 in the Entrepreneurial Spirit Index (consists of entrepreneurial awareness, opportunity perception and entrepreneurial self-efficacy), which means that Malaysians surveyed by GEM are overall not entrepreneurial. Malaysians surveyed by GEM considered entrepreneurship as a good career choice (ranked 6th out of 52 countries) and there is high media attention for entrepreneurship (ranked 4th out of 52 countries) but perceived lower status of successful entrepreneurs (ranked 26th out of 52 countries). In particular, Malaysians surveyed by GEM have high levels of fear of failure (ranked 11th out of 52 countries), resulting in low entrepreneurial intentions (ranked 24th out of 54 countries). Opportunity-driven entrepreneurship among early-stage entrepreneurial activity is very high in Malaysia (ranked 2nd out of 52 countries). Total entrepreneurial activity for 25 to 34 years-old has the highest score among all five age groups, suggesting that new venture creation is a young man's game (Levesque & Minniti, 2006). In terms of entrepreneurial education at post school stage, Malaysia's rating is below Asia and Oceania and ranked 31st out of 54 countries. Overall, it appears that Malaysia has plenty of rooms for improvement in the domains of entrepreneurship and entrepreneurship education.

Ministry of Entrepreneur Development and Co-operatives

The vision of the Ministry of Entrepreneur Development and Co-operatives (MEDaC) is to make entrepreneurship one of the nation's main agendas. The mission of MEDaC is to create a holistic and conducive entrepreneurial ecosystem that supports an inclusive, balanced and sustainable national entrepreneurial development agenda. The ensuing sub-sections describe its various functions.

National Entrepreneurship Policy

Entrepreneurship is regarded as a national priority area. As such, there are 40 policies, master plans, action plans, et cetera with entrepreneurship as an important element undertaken by 15 federal ministries, Central Bank of Malaysia, Securities Commission of Malaysia and more than 60 entrepreneurship development organisations. Entrepreneurship development programmes in Malaysia are considered by many to be among the most comprehensive programmes in the world (Isenberg, 2010). Malaysia aspires to become an entrepreneurial nation by 2030. The National Entrepreneurship Policy under the Ministry of Entrepreneur Development and Co-operatives is Malaysia's first long-term entrepreneurship policy to guide entrepreneurship development. To realise this aspiration, a dynamic entrepreneurial ecosystem will be created to ensure that all Malaysians will benefit from this policy and to explore their full potential through involvement in entrepreneurship. Amongst the challenges is to change Malaysians' mind-set from necessity-driven entrepreneurship to opportunity-driven entrepreneurship and towards innovation-driven entrepreneurship. Another challenge relates to education and skills, the government hopes that highly skilled graduates nurture innovation and creativity to explore new areas and shift their mind-sets from job seekers to jobs creators.

The National Entrepreneurship Policy outlines five main objectives. First, to create a holistic and conducive entrepreneurial ecosystem to support an inclusive, balanced and sustainable socioeconomic development agenda. Second, to develop Malaysian society with entrepreneurial mind-set and entrepreneurial culture. Third, to increase the number of quality, viable, resilient, global-minded and competitive entrepreneurs. Fourth, to enhance capabilities of micro, small- and medium-sized enterprises and co-operatives. Fifth, to make entrepreneurship as a choice career. To achieve the stated objectives, the National Entrepreneurship Policy outlined six core strategies supported by 19 strategies and 62 initiatives. This study argues that all objectives (except number four) can be attained through

an effective entrepreneurship education. As such, subsequent literature review in this section will focus on aspects of the National Entrepreneurship Policy related to entrepreneurship education.

The first core strategy is to inculcate an entrepreneurial culture among all Malaysians. Students at primary, secondary and higher education levels as well as general public will be equipped with entrepreneurial thinking, attributes and strong values, to produce more entrepreneurs that are creative, innovative, dare to take risks and explore opportunities. This strategy aims to strengthen implementation of entrepreneurship education and skill training via initiatives that: (1) adopt values and entrepreneurial culture into education system starting from primary to higher education level; (2) upgrade quality of entrepreneurship trainings through certification and curriculum accreditation; (3) incorporate entrepreneurship apprenticeship component into technical and vocational education and training; (4) provide entrepreneurship trainings and structured support for Bumiputera students and graduate entrepreneurs; (5) enhance co-operation between industry and educational institutions covering mentoring programmes and trainings for instructors. The fourth core strategy is to drive economic growth through innovation-driven enterprises. This strategy aims to facilitate exchange process of technology and innovation via initiatives that: (1) facilitate uptake process from research and development and strengthen collaboration between industry and academia / research institutes; (2) networking in knowledge-intensive sector together with technology leaders, leading scientists and academicians all over the world; (3) create market friendly co-operation between industry and academia to spread innovations widely. An ideal entrepreneurial ecosystem is able to support all types of entrepreneurial activities to produce successful entrepreneurs. A key element in this ecosystem is to produce skilled and knowledgeable entrepreneurs through structured, recognised, accredited education and entrepreneur training system as well as trainings for instructors.

SME Corporation Malaysia

The SME Corporation Malaysia is an agency under the Ministry of Entrepreneur Development and Co-operatives and Secretariat to the National Entrepreneur and SME Development Council chaired by the Prime Minister of Malaysia. SME Hub acts as the central point of reference for research and data dissemination on entrepreneurs and SMEs, provides business advisory services to entrepreneurs and SMEs, and performs as entrepreneurship one-stop centre for various agencies under the Ministry of Entrepreneur Development and Co-operatives. In addition, SME Corporation Malaysia implements various programmes and initiatives such as Entrepreneurship and SME Week, and programmes for Bumiputera entrepreneurs.

National Institute of Entrepreneurship

The National Institute of Entrepreneurship, an agency under the Ministry of Entrepreneur Development and Co-operatives, develops entrepreneurs' capabilities through training and guidance programmes. The vision of National Institute of Entrepreneurship is to realise the aspiration of Malaysia to become an entrepreneurial nation by developing entrepreneurs' capacities. The mission of National Institute of Entrepreneurship is to: (1) strengthen entrepreneurship development ecosystem through measuring results; (2) stimulate collaboration across ministries, agencies and industries; (3) enhance entrepreneurs' capabilities to be resilient, competitive and global-minded; (4) prepare entrepreneurs to become trend and market leaders.

Malaysian Global Innovation and Creativity Centre

The Malaysian Global Innovation and Creativity Centre (MaGIC) is an agency under the Ministry of Entrepreneur Development and Co-operatives with a mandate to realise the aspirations of the National Entrepreneurship Policy by 2030. MaGIC's curriculum covers the

following areas: (1) ideation to identify right product or service for right target market; (2) validation to measure right marketing metrics to drive optimal return-on-investment; (3) develop marketing plan, strategies, channel and access to market; (4) develop prototype or minimum viable product and identify user journey; (5) how to raise capital or funding and have a stable revenue streams; (6) pitching to present and demonstrate student's products or services prior to product development. MaGIC organises University Start-up Challenge 2020, a 2-day start-up immersion and pitching competition to equip Malaysian HEI students with entrepreneurial mind-set and skills through fundamental workshops, mentoring, sharing sessions and networking opportunities. Participants in this competition will receive advice from experts and mentors, cash prizes to kick start their business, exposure to innovation, entrepreneurial mind-set and tools and showcase their start-up to Malaysian entrepreneurial ecosystem.

Other significant players in Malaysian entrepreneurial ecosystem

Ministry of Rural Development and People's Trust Council

The People's Trust Council (MARA) is a Malaysian government agency under the Ministry of Rural Development to provide various entrepreneurship training programmes, business advisory services, marketing and technoentrepreneur development, commercial infrastructure and business financing specifically to Bumiputeras. MARA's Entrepreneurship Sector conducts entrepreneurship training programmes. MARA's Education Sector: (1) provides education financial facilities to eligible Bumiputera students at various educational level to study at national and international HEIs; (2) plan, monitor and supervise activities and programmes run by MARA. Additionally, MARA owns a higher education subsidiary known as Universiti Kuala Lumpur (UniKL).

Entrepreneurship education in Malaysia

This section provides a review of prominent, recent and emerging literature on entrepreneurship education in Malaysia. Various neoteric sources have been integrated in this study, including the Malaysia Education Development Blueprint 2015-2025 (Higher Education), Malaysian Qualifications Framework and scholarly research on entrepreneurship education in Malaysia.

Malaysia Education Development Blueprint 2015-2025 (Higher Education)

The Malaysia Education Development Blueprint 2015-2025 (Higher Education) proposes major transformation for Malaysia's higher education system to prepare Malaysians for the challenges and opportunities of an ever-changing world. Amongst other goals, the Ministry of Higher Education aspires to instil an entrepreneurial mind-set throughout Malaysia's higher education system and create an education system that produces entrepreneurial graduates who create jobs. The Malaysia Education Development Blueprint 2015-2025 (Higher Education) will spur continued excellence in the higher education system with 10 shifts. The first shift is to produce holistic, entrepreneurial and balanced graduates by imbuing HEI students with transferable skills, sound ethical foundations, resilience and enterprising spirit to shape new opportunities for themselves and others. In this respect, flexible education was introduced such as 3 + 1 or 2 + 2 programme which takes into consideration out-of-campus or industry-based learning, often referred to as experiential entrepreneurship education (Kassean, Vanevenhoven, Liguori, & Winkel, 2015). For example, Universiti Malaysia Kelantan has a 2u2i Bachelor of Entrepreneurship (Honours) programme with 2 years in university and 2 years industry attachment. Moreover, under the Ministry of Higher Education guidelines for general study subjects (*Guidelines for General Study Subjects*, 2016), universities have the option of offering

Foundations of Entrepreneurship to all students to inculcate entrepreneurial skills as an learning outcome.

Furthermore, the HEI Entrepreneurship Action Plan 2016-2020 outlined four targets: (1) All HEI students to be exposed to entrepreneurial culture and attributes; (2) 5% of graduates to become entrepreneurs; (3) 15% of HEI students to involve in business activities and (4) 1,500 teaching staff with expertise in entrepreneurship. Presently, in certain public universities such as University of Malaya and National University of Malaysia, basic entrepreneurship is a compulsory subject for students from all faculties.

Malaysian Qualifications Framework

The Malaysian Qualifications Framework (MQF) sets national classifications of qualifications, describes levels of learning achieved based on learning outcomes and prescribes academic load at each level in the higher education and training sectors. The Malaysian Qualifications Agency (MQA) is responsible for the implementation of the MQF. The first objective of the MQF is to secure standards of qualifications and reinforce policies on quality assurance. The five clusters of learning outcomes are: (1) knowledge and understanding; (2) cognitive skills; (3) functional work skills; (4) personal and entrepreneurial skills and (5) ethics and professionalism.

Scholarly research on entrepreneurship education in Malaysia

Entrepreneurship should be promoted as a viable, satisfying, dignified, rewarding and valued career option. Entrepreneurship education can also hedge against unemployment when supply of jobs in the labour market shrinks. Given these touted benefits of entrepreneurship, it is desirable to attract the young and the educated to choose opportunity-driven (choice) entrepreneurship as a career. Entrepreneurship researchers have persistently endeavoured to

understand motivational differences between entrepreneurs and non-entrepreneurs, with respect to their decision to become entrepreneurs.

Using values theory as a theoretical lens in an endeavour to distinguish latent entrepreneurs from non-entrepreneurs prior to their emergence, a survey in a Malaysian private university revealed that self-direction significantly predicts undergraduates' entrepreneurial intentions for new venture creation (Looi, 2018). Self-direction is the most consistent predictor of entrepreneurial intention in a number of prior research using various samples. A cross-cultural comparative study (Looi, 2019) surveyed 355 Malaysian entrepreneurship undergraduates to examine whether the same values are needed for intention to start a business no matter what culture an individual is from. Two key insights emerged. First, self-direction and stimulation are salient motivational factors of entrepreneurship undergraduates' entrepreneurial intention over and above the demographic control variables. In other words, psychological motivations (self-direction and stimulation) rather than economic motivations (achievement and power) drive Malaysian entrepreneurship undergraduates' entrepreneurial intention. Second, in the context of Malaysia, ethnicity (specifically Malay or Chinese) does not moderate the relationship from self-direction and stimulation to entrepreneurial intention. The empirical evidence from analysing 378 matched business undergraduates from Malaysia, Indonesia and China suggests that different salient values motivate business undergraduates' entrepreneurial intention in different national contexts. Specifically, self-direction and stimulation values shape Malaysian and Indonesian undergraduates' entrepreneurial intention, whereas achievement values shape Chinese undergraduates' entrepreneurial intention (Looi, 2020). Understanding values as contextual motivations for an entrepreneurial career contributes to our understanding of the interaction between process and context to avoid the problem of overgeneralise results across heterogeneous settings within and across studies.

A review of entrepreneurship education in Malaysia published in Education + Training (E + T) and other sources from 2010 to 2020 suggest that Malaysian scholars investigated various entrepreneurship education topics such as readiness for entrepreneurship education (Othman, Hashim, & Ab Wahid, 2012), inclusion of entrepreneurship education (Ahmad, 2013), dimensions of social entrepreneurship (Othman & Ab Wahid, 2014), entrepreneurship education practices (Yusoff, Zainol, & Ibrahim, 2015), with effectiveness of entrepreneurship education receiving more research attention (Din, Anuar, & Usman, 2016; Mohamad, Lim, Yusof, & Soon, 2015; Mohamed, Rezai, Shamsudin, & Mahmud, 2012; Zainuddin & Mohd Rejab, 2010).

For publications in E + T, Nasip et al. (2017) found innovativeness, self-confidence, propensity to take risk, need for achievement and tolerance for ambiguity positively affect undergraduates' entrepreneurial intention in a public HEI. Farooq et al.'s (2018) study of fresh business graduates from two public HEIs revealed that social support positively influences entrepreneurial intention (but Table 5 indicates otherwise) and this relationship is fully mediated by attitude, subjective norm and perceived behavioural control. Although their literature review discussed four dimensions of social support, it was operationalised as a single dimension with four items. Othman and Tengku Muda (2018) investigated the impact of emotional intelligence on undergraduates' entrepreneurial career choice in three public HEIs. Of the four dimensions of emotional intelligence, only emotion management and social skills are significant predictors. Che Embi et al. (2019) analysed 257 undergraduates from a public HEI and found leadership skill, need for achievement, tolerance of ambiguity and risk-taking propensity positively affect entrepreneurial intention. However, the negative effect of self-confidence on entrepreneurial intention was strangely attributed to entrepreneurial exposures of students from different geographical settings.

For publications outside of E + T, Ooi et al.'s (2011) findings suggest that university's role to promote entrepreneurship, entrepreneurial curriculum and content, gender, working experience and mother's occupation predict students' inclination towards entrepreneurship in three public HEIs. Ahmad and Buchanan's (2015) review of entrepreneurship education in 20 Malaysian public HEIs reveal that although entrepreneurship as a general subject is common, entrepreneurship as a major programme or concentration is offered in only five public HEIs. They identified challenges mainly in institutional-industrial linkages, present teaching and assessment methodologies, financial support and on-going curriculum reform. Mustafa et al.'s (2016) results indicate that proactive personality and perceived concept development support are predictors of undergraduates' entrepreneurial intention in a private HEI. Perceived concept development support refers to business development ideas, knowledge to start a new business and introduction to entrepreneurial role models provided by university to motivate undergraduates to push through their ideas and pursue a career in entrepreneurship.

However, to date no study described in detail Malaysian macro context of entrepreneurship, such as various government economic and educational policies to promote entrepreneurship. The current unsatisfactory contextualisation of entrepreneurship education research in Malaysia highlights the need for more scholarly research. Moreover, prior work either focussed on public or private HEIs, instead of a more holistic picture of both public and private HEIs. The prevalence of entrepreneurship education in Malaysia and GEM Global Report 2017/18 (2018), when put into its contexts, may provide valuable insights into the status of entrepreneurship education in Malaysia.

Methods

This study is in essence a replication and extension of Maritz et al. (2015) and Maritz et al. (2019). This study provides a nascent archetype regarding iterative open-ended inquiry

(Edmondson & McManus, 2007) to provide inference on the status of EEPs in Malaysia. To inquire into the current status of EEPs offered in Malaysian public and private HEIs (colleges and polytechnics are excluded), data were collected from two distinct groupings of Malaysian HEIs, consisting of public and private HEIs, by browsing their official websites. The lists of accredited universities and university colleges in Malaysia as published on the website of the Ministry of Higher Education, Malaysia, are available in Appendix 1. First, data on full programmes, major and minor specialisations in entrepreneurship and subjects about and related to entrepreneurship offered by business faculties/schools or other faculties/schools were collected. Next, this study collected data on entrepreneurship subjects offered outside of full programme, major or minor specialisation in entrepreneurship, which included university-compulsory, faculty-compulsory or programme core and elective subjects. Technical and Vocational Education and Training programmes (TVET), online courses, distance learning, research mode programmes at post graduate level and franchise degrees are excluded. Lastly, this study collected data on entrepreneurship centres. These official websites were accessed between March 2020 and July 2020 (i.e., during enforcement of movement control order in Malaysia as a *cordon sanitaire* preventive measure against the spread of Covid-19). This method of data collection is constrained by the amount of information each HEI posted on their official websites. To mitigate this limitation, this study supplemented information unavailable on official websites of HEIs by email and telephone inquiries, referring to student guidebook available outside of official websites of HEIs and other sources.

The classification of entrepreneurship programme (full, major or minor), entrepreneurship subject (about or related to) and points allocation system were adopted from Maritz et al. (2019). Full programme and major specialisation in entrepreneurship consist of title and subjects within the domain of entrepreneurship, for example, Bachelor of Entrepreneurship and Innovation with Honours or Master of Applied Entrepreneurship. Under

this points allocation system, full programme in entrepreneurship (with eight or more about and related to entrepreneurship subjects) will score six points, major specialisation (with four to seven about and related to entrepreneurship subjects) will score four points, non-entrepreneurial programme with at least four about or related to entrepreneurship subjects will score two points. In addition, two points will be awarded for subject about entrepreneurship (i.e., direct entrepreneurship subject, such as Fundamentals of Entrepreneurship) and one point awarded for subject related to entrepreneurship (i.e., indirect entrepreneurship subject, such as Creativity and Innovation). To illustrate, a HEI offering eight subjects about entrepreneurship would score 6 points (for being a full programme with eight subjects about entrepreneurship), plus 16 points (eight subjects about entrepreneurship \times 2 points for each subject). Another HEI offering eight subjects related to entrepreneurship would score 6 points (for being a full programme with eight subjects related to entrepreneurship), plus eight points (eight subjects related to entrepreneurship \times 1 point for each subject). For entrepreneurship subjects offered outside of full programme or major specialisation in entrepreneurship, two points will be awarded for subject about entrepreneurship and one point awarded for subject related to entrepreneurship. The subject classification about and related to entrepreneurship is consistent with startup and enterprising perspectives mentioned in the Introduction section.

After data collection and points allocation, Table 1 was developed to organise the points. For entrepreneurship subjects offered outside of full programme or major specialisation in entrepreneurship, points awarded for subject about entrepreneurship and subject related to entrepreneurship are grouped under Others in Table 1. The number of HEIs reported in Table 1 (86) is smaller than the number of HEIs surveyed (20 public HEIs and 91 private HEIs) because some HEIs do not offer any entrepreneurship subject nor have any entrepreneurship centre. A table in descending order was developed to assess the levels of entrepreneurship engagement by various HEIs in terms of total points scored. Because this study replicates and

extends research by Maritz et al. (2019), it adhered to national equivalence issues such as sample equivalence, data collection equivalence and data analysis equivalence (Coviello & Jones, 2004).

Findings and Discussion

Data consisted of quantity or extent of identified EEP offerings, as opposed to quality and impact, which paves the way for future research. Data primarily entailed EEPs consisting of full programmes, major and minor specialisations in entrepreneurship, subjects about entrepreneurship (direct relation to entrepreneurship), subjects related to entrepreneurship (indirect relation to entrepreneurship), others (subjects about and related to entrepreneurship offered outside of full programme, major or minor specialisation in entrepreneurship) and entrepreneurship centres (inclusive of entrepreneurship research centres, accelerators, incubators and entrepreneurial ecosystems). The data were systematically coded and quantified.

The points scored by each HEI are summarised in Table 1 in descending order. The table provides inference as to the variety of EEP offerings across Malaysian HEIs. According to the Ministry of Higher Education of Malaysia, there are 111 HEIs, consisting of 20 public HEIs and 91 private HEIs. This study identified 86 HEIs in Malaysia offering EEPs, made up of 19 public and 67 private HEIs. Public HEIs are primarily funded by the Malaysian Government, whereas private HEIs are primarily funded by collaboration partners, such as State funding, community funding, enterprise/business funding and international satellite arrangements.

Insert Table 1 about here

This study commences the EEP commentary by identifying the most prolific measure of EE (in this study), that of full programmes in entrepreneurship. Overall, there are 28 full programmes in entrepreneurship distributed across only 24 HEIs (28 percent of all HEIs in Table 1). Of the 24 HEIs, only four have two full programmes in entrepreneurship, the balance have only one full programme in entrepreneurship. These full programmes in entrepreneurship all have entrepreneurship in their title and consist of a minimum of eight subjects about or related to entrepreneurship. Titles for these full programmes in entrepreneurship include, for example, Bachelor of Entrepreneurship and Innovation with Honours, Bachelor of Technopreneurship with Honours, Master of Entrepreneurship and Innovation and Master of Applied Entrepreneurship. Next classification is major specialisation in entrepreneurship. These major specialisation in entrepreneurship mostly have entrepreneurship in their title and consisting of four to seven subjects about or related to entrepreneurship. This study identified 22 major specialisations distributed across 15 HEIs (17 percent of all HEIs in Table 1). Only three HEIs have multiple major specialisations in entrepreneurship, including one HEI offering six major specialisations in entrepreneurship – University Malaysia Kelantan. Next classification is minor specialisation in entrepreneurship, representing those programmes that do not have entrepreneurship in their title, but have more than four subjects about and related to entrepreneurship. Only one HEI is in this classification – Universiti Malaysia Kelantan. As such, Universiti Malaysia Kelantan is the only HEI offering full programme, major specialisation and minor specialisation in entrepreneurship. Thus, it is no surprise that Universiti Malaysia Kelantan ranks well ahead of other HEIs in Malaysia with regard to proliferation of EEPs.

At the HEI level, only nine out of 20 public HEIs offered entrepreneurship programmes, consisting of nine full programmes, nine major specialisations and one minor specialisation in entrepreneurship. Out of these 19 entrepreneurship programmes, only three full programmes

in entrepreneurship are offered at master level and the rest at bachelor level. Private HEIs offered 19 full programmes and 13 major specialisations in entrepreneurship, in greater number than public HEIs, possibly reflecting the growing market demands for EEPs.

Although full programme and major specialisation in entrepreneurship have entrepreneurship in their titles, purportedly to produce entrepreneurs but the subjects offered differ, suggesting different definitions of EE and its purposes (Liguori et al., 2018) by different HEIs. As such, the differences in scope, objectives and teaching methodologies are likely to result in nuance differences in learning outcomes. This phenomena is consistent with the notion of heterogeneity nature of entrepreneurship (Shepherd, Wennberg, Suddaby, & Wiklund, 2019; Wiklund, Nikolaev, Shir, Foo, & Bradley, 2019) and the "Blind Men and the Elephant" (Gartner, 2001).

Next measure identifies distribution of entrepreneurship subjects. This study identified a total of 266 subjects about entrepreneurship and 71 subjects related to entrepreneurship under full programmes, major and minor specialisations in entrepreneurship, spread across 36 HEIs (42 percent of all HEIs in Table 1). It is no surprise to see multiple subjects about entrepreneurship attributed to those HEIs with full programmes or major specialisation in entrepreneurship. There are also many subjects about and related to entrepreneurship offered outside of full programme, major or minor specialisation in entrepreneurship, suggesting the emergence of entrepreneurship as a major subject in business education. At a deeper level, this finding seems to reflect the prevalent values of Malaysian society (GEM, 2018; Looi & Khoo-Lattimore, 2015). Etzioni (1987) suggests that, *ceteris paribus*, the higher the level of legitimization in a society, the more the educational system will educate and train entrepreneurs.

The top ten HEIs (12 percent of all HEIs in Table 1) contributed 41 percent of subjects about entrepreneurship. Subjects about entrepreneurship included titles such as Entrepreneurship, Introduction to Entrepreneurship, Fundamentals of Entrepreneurship,

Entrepreneurial Creativity and Innovation, Entrepreneurial Finance, Entrepreneurial Leadership, Entrepreneurial Marketing, Entrepreneurial Skills, Agribusiness in Entrepreneurship, Applied Entrepreneurship, Contemporary Entrepreneurship, Corporate Entrepreneurship, Global Entrepreneurship, International Entrepreneurship, Real Estate Entrepreneurship, Social Entrepreneurship, Technology Entrepreneurship, Technopreneurship, Legal Issues in Entrepreneurship, Islamic Convention of Entrepreneurship, Psychology of Entrepreneurship, Business Plans for New Ventures, Corporate Venturing, Financing Entrepreneurial Ventures, Managing Entrepreneurial Ventures and New Venture Creation. It was interesting to see specialisations in entrepreneurship aligned with cultural and cross-disciplinary topics, proving positive inference of the delineation of entrepreneurship education.

30 HEIs (35 percent of all HEIs in Table 1) offered subjects related to entrepreneurship, lower than those HEIs offering subjects about entrepreneurship (36 HEIs or 42 percent of all HEIs in Table 1). Subjects related to entrepreneurship included titles such as Critical and Creative Thinking, Creative Thinking, Creativity and Innovation, Business Innovation, Innovation Management, Management of Innovation, Product Design and Innovation, Technology Management and Innovation, Design Thinking, Small Business Management, Small Business Planning, Small Business Growth, Enterprise and Small Business Management, Managing Business Growth and Family Business. Introspection was adopted with entrepreneurship context with alignments to EEPs. Subjects about and related to entrepreneurship offered outside of full programme, major or minor specialisation in entrepreneurship, including university-compulsory or faculty-compulsory entrepreneurship subject in public HEIs and general study subject of Fundamentals of Entrepreneurship in private HEIs, are offered in 80 percent of HEIs in Table 1. These subjects are classified under Others in Table 1.

Our final classification was that of entrepreneurship centres, consisting of formal and informal groupings of collaborative members and initiatives such as teaching teams, research and engagement and community initiatives in entrepreneurship. Entrepreneurship centres were dominant in those HEIs prominent in EEPs, however, to a lesser extent, in a few private HEIs without EEPs. It was observed that there are more entrepreneurship centres in public HEIs (19) than in private HEIs (15), although private HEIs constituted 78% of HEIs in Table 1.

When looking at EEP offerings by Malaysian HEIs, a few interesting observations were noted. The top 10 HEIs consists of equal number of public and private HEIs, albeit public HEIs have more EEPs (57%) because they are primarily publicly funded to promote Malaysian Government's entrepreneurship agenda. The leader of this quantitative tally – Universiti Malaysia Kelantan – is an entrepreneurial university with a motto of “Entrepreneurship is our thrust”. Interestingly enough, as is the case with other similar country study (Maritz et al., 2019), the top 10 HEIs (representing 12 percent of all HEIs in Table 1) accounted for 35 percent of total EEPs offered. It may thus be said that EEPs is significantly dominated by the top 10 HEIs in Malaysia, indicative of dominance in a quest to become entrepreneurial universities. Overall, EEPs are offered in 86 out of 111 HEIs (77% of all HEIs in Malaysia), despite sparsely distributed across HEIs in the bottom half of Table 1. Nevertheless, many HEIs in the bottom half of Table 1 have the opportunity to increase their EEP offerings, thus, increase their impact. Furthermore, 40% of all HEIs in Table 1 have entrepreneurship centres, with 56% of entrepreneurship centres found in public HEIs, further aligning with Malaysian Government's entrepreneurship agenda.

Different institutional contexts produce heterogeneity of entrepreneurial responses. Introspection provided inference to public and private support for EEPs in Malaysian HEIs. This study highlights the significant influence of Malaysian government institutions related to entrepreneurship (macro context) on EE and EEPs (micro contexts). The National

Entrepreneurship Policy under the purview of Ministry of Entrepreneur Development and Co-operatives, supported by various government agencies, influenced The Malaysia Education Development Blueprint 2015-2025 (Higher Education), which in turn guide the EEPs in public and private HEIs.

Notwithstanding, there is room for improvement for more EEPs which will help Malaysia to improve its EE ranking in Asia and Oceania in future Global Entrepreneurship Monitor Global Report. The low score of Malaysia for Entrepreneurial Spirit Index in Global Entrepreneurship Monitor Global Report 2017/18 (2018) may be attributed to lagging effects. With government institutional support and EEPs, it is reasonable to speculate that Malaysia will improve its score in Global Entrepreneurship Monitor's Entrepreneurship Spirit Index in the future. Presently, 9 (out of 20 or 45%) public HEIs and 27 (out of 91 or 30%) private HEIs offered full, major and minor specialisation in entrepreneurship. In other words, only 36 (out of 111 or 32%) public and private HEIs in Malaysia offered full, major and minor specialisation in entrepreneurship. For greater impetus to support the national entrepreneurship agenda, this study suggests wider offering of EEPs across more public and private HEIs.

Although this study found specialisations in entrepreneurship aligned with cultural, cross-disciplinary and technological topics, this study strongly suggest focussed EEP offerings in emerging fields to produce entrepreneurs of the future (in contrast to future entrepreneurs), associated with Internet of Things (IoT), drones, artificial intelligence (AI), industrial revolution (IR) 4.0, 5G, et cetera.

Conclusion

Embedding entrepreneurship in education makes multiple contributions to the scholarship and study of EE and advancement of EEPs. This is the first study using emergent enquiry into the status of EE and EEP offerings by Malaysian public and private HEIs, against the backdrop of

macro level context of Malaysian government institutions related to entrepreneurship. First, this study identified significant government institutional support for EE in Malaysia. Second, this study identified a growing Malaysian body of knowledge regarding the scholarship of entrepreneurship. Third, building on the above contributions, this study examined EEP offerings at Malaysian public and private HEIs. Overall, this study found a moderate offering of EEPs across 86 HEIs in Malaysia, despite sparse offering of EEPs amongst HEIs in the bottom half of Table 1.

This is encouraging as a guiding coalition, particularly regarding the significance of government institutional support for entrepreneurship, EE and EEPs. This study provides inferences for HEIs to identify their relative position in EEPs and to enhance their EEPs. One may assume that the top 10 HEIs are dominant in the quest to become entrepreneurial universities. This study suggests further research within the Malaysian context, first on quality and impact of EE and EEPs, followed by alignment of HEIs to the quest of Malaysian Government's entrepreneurship agenda.

The limitations and implications of this study are associated with the nascent archetype regarding iterative open-ended inquiry to provide inference on the status of EE in Malaysia. To inquire into the current status of EEP offerings in Malaysian public and private HEIs, data were collected by browsing official websites of HEIs. As this study presents findings from official websites of HEIs, data was subject to availability and accuracy of online information and documents. However, limitations have been mitigated with telephone and email inquiries and other sources of information.

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