

A REVIEW ON CYBER ENTREPRENEURSHIP IN MALAYSIA: PAST, PRESENT AND FUTURE

Hazrina Hasbolah¹, Salini Aina Mamat², Zailani Abdullah³, Syamsuriana Sidek⁴

^{1,2,3,4}Faculty of Entrepreneurship and Business, Universiti Malaysia Kelantan, Pengkalan Chepa, 16100, Kota Bharu, Kelantan, Malaysia.

E-mail: ¹hazrina.h@umk.edu.my, ²salini.a16d025p@siswa.umk.edu.my, ³zailania@umk.edu.my, ⁴suriana@umk.edu.my

Received: 14 March 2020 Revised and Accepted: 8 July 2020

ABSTRACT— Cyber entrepreneurship is a relatively new frontier in the entrepreneurship field that utilizes the internet of things in doing business, which is shifting from the traditional way. However, there is a lack of systematic review of cyber entrepreneurship research in previous studies. Most of the studies focus on cyber entrepreneurship as targeted current career and employment for human capital sustainability. Few systematic reviews have been carried out on the future impacts of cyber entrepreneurship among Malaysian cyber entrepreneurs. This paper sets out to analyse the existing literature review outlining early issues, reveal trends, and identify research gaps towards the future impact of cyber entrepreneurship in the Malaysian context. A total of 55 articles addressing the cyber entrepreneurship which were published between the year 2011 and 2019 were analysed, guided by a systematic review of the Web of Science, Scopus and Google Scholar database and the PRISMA statement. Further review of these paper articles resulted in main items example cyber entrepreneurship, digital entrepreneurship, online entrepreneurship, social entrepreneurship, and e-entrepreneurship. This study also highlights several recommendations for conducting a quantitative study as well as to depth specific. Thus, a typical systematic review technique was used for guiding the analysis within the perspective of cyber entrepreneurship to use technologies as well as enable them to examine complementary searching such as snowballing searching and citation tracking.

KEYWORDS—Systematic review, cyber entrepreneurship, economic development, entrepreneurship, new frontier

I. INTRODUCTION

Entrepreneurship activities are forecasted to boost global economic development, as it is one of the major drivers of the socioeconomic development that has been broadly acknowledged by researchers and practitioners [1]. Currently, based on the Global Entrepreneurship Monitor report in 2018, the total early-stage entrepreneurial (TEA) activities increased significantly in the year 2015, from 2.9 % up to 21.6% within a year. Meanwhile, in Malaysian economic context, Gross Domestic Product (GDP) per capita revealed that economic development increased from RM16, 729 in 2012 up to RM296.2B in the year 2017 [2].

Prior to the mid-2000s, the innovation in entrepreneurship among businesses has already started across enterprises, retail business and small business with a small boundary technologies [3]. In the current new economy, Information technology not only have helped to detect new business opportunity and innovations [30] but also, changed the traditional practices of doing business, the means of dealing with potential customers and suppliers, as well as taking advantage of the powerful information tools on a much broader scale. Furthermore, it seems that ICT entrepreneurs are almost overtaking all traditional entrepreneurs. The evidence of ICT entrepreneurship development can be clearly seen from successful entrepreneurs in the Western countries example, in the United States where the most well-known business entities like Google, Yahoo, Amazon, and eBay are founded and rapidly growing at an immense rate. The difference of traditional entrepreneurship activities with new technologies is seen in the context of, how they face income difficulties, lack of training and capital, and other difficulties in their interactions and financial fund [4].

The movement towards new technologies in entrepreneurship began in the 2000s, when the innovations in communication, as well as the promotion of products and services via phone and media communication, become more apparent. Since then, the entrepreneurship activities, preferably through various electronic platforms became more imperative. New technologies are also cultivating new entrepreneurial forms, including cyber entrepreneurship. Information technology promotes a new form of entrepreneurship also known as cyber-entrepreneurship. Cyber entrepreneurship is a new era of economic growth and development. Cyber-

entrepreneurship is an extended version of entrepreneurship where the cyber platform is the new method of doing business. The cyber entrepreneurship is solely using information technology and the internet as a stage for operating business [5]. It is still in an emerging phase because the entrepreneurial process of opportunity exploration and exploitation [31] is not well understood; it is said to be still an understudied phenomenon. Thus, cyber entrepreneur development is one of the fundamental solutions for economic development and globalization. Developing necessary resources among emerging cyber entrepreneurs tends to have a great impact on the economic growth.

In recent years, the interest in entrepreneurship activities via new technology so called “cyber” that by means of the internet of things has increased remarkably. In general, the cyber entrepreneurship as the new approach is prominently basic of entrepreneurial self-efficiency for the future to strengthen the need for human capital development [6]. It seems relatively new and still at a developing stage, both in practice and in terms of research. Nevertheless, this new technology in entrepreneurship is showing a positive sign in improving employment growth, hence indirectly improving the poverty rate in the community. According to statistic report in 2019, which stressed on the community, the impact of change on unemployment where there is a positive relationship which demands for a new technological approach towards employment into ‘job-creator’ [7]. According to this new approach, increasing the development job creator is one of the prerequisites for future economic development. In fact, an estimate from International Data Corporation (IDC) Asia Pacific indicates that sales revenue generated by online commerce stood at US\$ 15 million in 1998, which was expected to grow to US\$ 46 million within a year, and further to US\$ 1.57 billion in 2003, mainly due to the ever-growing number of computers and internet service providers within the country since the 1990s [32].

Therefore, this paper aims to review the existing literature on cyber entrepreneurship and indicate gaps in the research as well as potentially fruitful extensions of current lines of study, specifically to understand the present and the future of cyber entrepreneurs in Malaysia.

II. LITERATURE REVIEW

A. Cyber Entrepreneurs vs Cyber Entrepreneurship

William Gibson first used the term “Cyber” via his novel “Neuromancer” indicated as a place where the businesses are conducted and represent a vast network of computer and telecommunication lines. Meanwhile, the term Cyber entrepreneur comes from the combination of cyber and entrepreneur in which those who are doing business by creating a firm that is essentially founded upon electronic commerce, including functions that support the information and commercial transaction exchanges, and whose main activities are based on exploiting networks using Internet technologies, intranets, and extranets [8]. This is supported by [9], who stated that electronic commerce has evolved towards the internet and the Web, and it is an open communication and transaction that is accessible, as well as particularly providing growth opportunities to entrepreneurial firms.

On the other hand, cyber entrepreneurship refers to the process of a cyber entrepreneur going through a transformation from one version extended to form the other type of entrepreneurship practicing, where the new method of doing business practices purely the Internet platform. Nevertheless, it is still regarded as an emergent phase, where more is to be explored and investigated concerning the phenomenon and element of the venture creation process [9, 33,34]. The cyber entrepreneurship is a step or another way to promote or sell any particular product or services by means of the Internet technology or an electronic brochure that is well known as the home page on the Internet [10] and it is a new source of development and growth of the economy [35].

B. The Evolution of Cyber Entrepreneurship in Malaysia

The modern concept of entrepreneurship activities was introduced from the time when we enter the 21st century. It started with who introduced the integrated concept of entrepreneurship as a dynamic process of vision, creation and change, which is meant to say that consistently grow through the emerging of new models and shape entrepreneurship parallel with the vast evolution of information technologies and networks [36]. The evolution seems to nurture more Internet-based entrepreneurship or appropriately called cyber entrepreneurship (CE).

Parallel to other developing countries, Malaysia is also keen on moving towards the 4th Industrial revolution in which the advanced technologies alters the traditional way of doing business into the advanced technology-based approaches and applications. Presently, in order to support the evolution of new information technology adaptation, the Malaysian government has initiated various activities and programs related to the information technology business in promoting e-commerce business [14]. As reported in Internet User Survey 2018 held by the Malaysian Communications and Multimedia Commission, the percentage of online shoppers among Malaysian Internet users have generally increased from 48.8% in 2016 to 53.3% in the year 2018. This shows that

the positive trend of e-commerce market in Malaysia with the e-commerce gross value added, contributed 6.3% of the nation’s gross domestic product (GDP) in 2017.

At the present time, in Malaysia, the emergence of online business has sparked a phenomenon when it comes to the rise of the popular fashion brands either through the websites, apps, marketplace or social media such as Bella Ammara, Zawara, Marshmallow scarf and many other well-known brands. This was reinforced by [14] findings, where Internet-based entrepreneurship is gaining popularity as a way of creating wealth and acquiring wealth in various aspects of the world today. As such, they are well-known as entrepreneurs who are very active and productive in promoting products through the Internet, and even branded as the catalyst for the economic development of a country.

Based on the data collected by the Department of Statistic Malaysia in year 2017 [18] (TABLE I), the adaptation of the information technologies, the internet usage and web presence usage among the Malaysian entrepreneur noticeably still at lower percentage record, especially amongst the east coast states like Kelantan 46.5%, 32.1%, 11.5% each, Terengganu 51%, 36.8%, 13.7% and Pahang 64.8%, 47.2% and 18.9%.

TABLE 1. CYBERPRENEURSHIP TO USE TECHNOLOGIES ADAPTATION PRACTICES AMONG MALAYSIAN BUSINESS

States	ICT usage in business	Internet usage in business	Web presence usage in business
	%	%	%
Total	73.5	61.7	28.5
Johor	74.7	60.6	24.1
Kedah	59.3	45.6	17.8
Kelantan	46.5	32.1	11.5
Melaka	73.6	64.8	35.9
Negeri Sembilan	50.4	38.8	14.9
Pahang	64.8	47.2	18.9
Perak	64.9	48.9	19.0
Perlis	52.7	42.0	16.9
Pulau Pinang	87.0	80.4	34.9
Sabah	58.5	43.4	17.1
Sarawak	63.0	49.2	20.7
Selangor	87.9	78.5	43.1
Terengganu	51.0	36.8	13.7
W.P. Kuala Lumpur	90.7	82.5	40.7
W.P. Labuan	63.9	53.1	24.4
W.P. Putrajaya	83.9	76.9	36.3

Source: Department of Statistics Malaysia (2017)

III.METHODOLOGY

The methodology section discussed the method that was chosen to retrieve articles related to cyber entrepreneurship, which uses the internet of things technologies. Indeed, most of the selected articles were reviewed from the sources of Scopus, Direct Science, and Google Scholar. The systematic review process involved three stages mainly; searching databases, visualizing, and lastly analyse the data and content precisely.

C. Searching the Academic Database Resources

In order to conduct an academic database resource search, quality of article paper is the basic consideration for the selection of quality publications [15]. Three well-known publication database resources in English were focused namely Scopus, Direct Science, and Google Scholar. The selections of these databases were done due to

its wider coverage of journals and the standard of quality. The phrase “cyber entrepreneur*”, “digital entrepreneur*”, “online entrepreneur*”, “social entrepreneur*” and “e- entrepreneur*” were used as the keywords for the search in the named database resources.

Due to the variability in peer- review systematic process, undefined journal and proceeding papers were eliminated. As a result, a total of 1,209 papers were identified, comprised of 23 from Scopus database resource and 1189 from others (see TABLE II).

TABLE 2. THE INCLUSION AND EXCLUSION CRITERIA

Databases	Keywords used
Scopus	TITLE-ABS-KEY ("Cyber* entrepreneur*" OR "online entrepreneur*" OR "e-entrepreneur*" OR "digital entrepreneur*" OR "social entrepreneur*" OR "perniagaan digital") AND ("adopt* technology*" OR "digital technology*")
Science Direct	"Cyber entrepreneurship" OR "online entrepreneurship" OR "e entrepreneurship" OR "digital entrepreneurship" OR "social entrepreneurship" OR "perniagaan digital")
Google Scholar and Others	"Cyber entrepreneurship" OR "online entrepreneurship" OR "e entrepreneurship" OR "digital entrepreneurship" OR "social entrepreneurship" OR "perniagaan digital")

Source: Developed by researchers for this study.

Subsequently, the review was conducted by the “PRISMA Statement” as described by [16] where preferred reporting item for Metadata analysis checklist and systematic analysis was completed. The “PRISMA Statement” allows the strict examination of keywords or terms related to cyber entrepreneurship and the Internet of thing technologies adoption reviews.

The reviewer carefully reads the titles, abstracts, and keywords of papers to eliminate duplicate paper and related research discussing technology issues or those not related study in simultaneity. Through this process, about 1154 papers were eliminated. As a result, a total of 55 papers were reserved for a much focused content analysis.

D. Analysis the data abstraction and contents

The remaining papers were assessed and further analysed. Efforts mainly focused on related specific studies that respond to the objective of the current paper. While, the data were extracted by reading through the abstract first, followed by the paper articles (in-depth) to identify appreciate items or variables. A quantitative analysis approach was performed using content analysis to identify items related to cyber entrepreneurship. The author’s list was organized according to the sub-topic discussed in each publication, shows in TABLE IV.

IV. FINDINGS AND DISSCUSSION

The systematic review of 55 papers resulted in a list of authors and the common topics related to cyber entrepreneurship adaptation practices from the past, present, and for the future discussion recommendation. Results showed that the topics discussed revolve around cyber entrepreneurship, online entrepreneurship, e-entrepreneurship, digital entrepreneurship, social entrepreneurship, and digital entrepreneurship to adapt technologies (see TABLE IV).

The findings provide a comprehensive analysis of the current adaptation practices utilised by cyber entrepreneurs. Indeed, in line with the objectives which focus on cyber entrepreneurs, only articles concentrated on the respective subject matter were selected as in TABLE III .

TABLE 3. THE INCLUSION AND EXCLUSION CRITERIA

Criterion	Eligibility	Exclusion
Access type	Open Access and other	No
Year	Between 2011 -2019	<2010
Subject Area	Business, Management and Accounting, Social Science, Multidisciplinary	Engineering, Medicine, Psychology, Science
Document type	Journal (Research Article), Book	Undefined, Conference Paper
Keywords	Keywords Technology Results	Book Series, book, conference proceeding
Countries/ territory	All countries	No
Source type	Journals	Non-journal
Language	English	Non-English

Source: Developed by researchers for this study.

A total of 17 studies focused much on digital entrepreneurship [17], 16 studies concentrated on cyber entrepreneurship [10,11,13], 16 studies focused on digital technologies [19, 37] eight studies on online entrepreneurship [38, 39,40], five studies on e-entrepreneurship [20,21] Ghoul et al., (2016) three studies on social entrepreneurship [41] Muhamad, N.S et al., (2013)[19]. According [22], new vast network information technologies, especially internet of thing and internet technologies are the sources of new venture of entrepreneurship platform such as e-entrepreneurship [22,23] and new frontier vast network cyber entrepreneurship [9].

TABLE 4. COMMON TOPICS OF CYBERPRENEURSHIP RESEARCH

No.	Author	Year	Cyberpreneurship Research: Past, Present and Future					
			CE	OE	EE	DE	SE	DT
1.	Wibhawa, B.	2019					/	/
2.	<u>Ilina, I., Zharova, E., Turginbayeva, A., Agamirova, E., Kamenskiy.</u>	2019						/
3.	Martinez Dy, A.	2019				/		
4.	Boellstorff, T.	2019				/		
5.	Chang, S. H., Shu, Y., Wang, C. L., Chen, M. Y., & Ho, W. S.	2019	/					
6.	Song, A.K.	2019				/		
7.	Zaheer, H., Breyer, Y., Dumay, J., Enjeti, M.	2019						/
8.	Lehmann, J., Rosenkranz, C.	2018				/		
9.	Tumbas, S., Berente, N., Vom Brocke, J.	2018				/		
10.	Haarhaus, T., Geiger, J.-M., Liening, A.	2018				/		
11.	Tumbas, S., Berente, N., Vom Brocke, J.	2018						/
12.	Antonio Ghezzi, Angelo Cavallo,	2018				/		/
13.	Arvidsson, V., Mønsted, T.	2018				/		
14.	Boojihawon, D.K., Ngoasong, Z.M.	2018				/		
15.	Mamat, S. A., Abdullah, Z., Ismail, W. A. A. Z. W., Muhammad, S., & bin Samsudin, M. R.	2018	/					
16.	Satish Nambisan, Robert A. Baron,	2018				/		/
17.	Lian, J. W., & Yen, D. C.	2017		/				
18.	Nambisan, S.	2017				/		
19.	Rahmawati, M.	2017	/					
20.	Leong, C., Pan, S.L., Liu, J.	2016				/		
21.	Tufte, T.	2016						/
22.	Fleacă, E.	2016				/		
23.	Ans Kolk, François Lenfant,	2016						/
24.	Babry, A., & Mehmood, B.	2016	/	/				
25.	Bapat, J.	2016	/					
26.	Hodalska, M., Ghita, C., & Bapat, J.	2016		/				
27.	Hosu, I., Iancu, I.	2016				/		
28.	Shabbir, M. S., & Shariff, M. (2016). R., Faisal, M., & Shahzad, A.	2016	/					
29.	Wang, Y. S., Lin, S. J., Yeh, C. H., Li, C. R., & Li, H. T.	2016	/					
30.	Yu, T. K., & Chao, C. M.	2016	/					
31.	Batool, H., Rasheed, H., Malik, M. I., & Hussain, S.	2015		/	/			
32.	Chepurensko, A.	2015						/
33.	Ghani, W. S. D. W. A., Khidzir, N. Z., Guan, T. T., & Daud, K. A. M. 2015,2018	2015	/					
34.	Ghoul, W.A.	2015		/				
35.	Soumaya Ben Letaifa,	2015						/
36.	Tumbas, S., Berente, N., Seidel, S., Vom Brocke, J.	2015				/		
37.	Gupta, A.	2014					/	/
38.	Kelestyn, B., Henfridsson, O.	2014				/		
39.	Ukpere, C.L., Slabbert, A.D., Ukpere, W.I.	2014				/		
40.	Alain Fayolle, Francisco Liñán,	2014		/				
41.	Masínová, V., & Svandová, Z. 2012,2014	2014	/		/			
42.	Mulyaningsih, H.D., Yudoko, G., Rudito, B.	2014						/
43.	Narang, Y., Narang, A., Nigam, S.	2014		/				
44.	Rauth Bhardwaj, B	2014			/			
45.	Muhamad, N.S., Adham, K.A.	2013					/	/
46.	Sun, W.-W., Cai, N.	2013					/	/
47.	Bhadviya, P., & Joshi, A.	2013	/		/			
48.	Bhardwaj, B. R., Wahi, S., & Deshmukh, A. R.	2013	/		/			
49.	Özdemir, O.G.	2013		/				
50.	Wahee, S. J., Bhardwaj, B., & Deshmukh, A. R. 2013,2014,2015	2013	/					
51.	Ismail, N., Jaffar, N., Khan, S., & Leng, T. S.	2012	/					
52.	Abdullah, A. H. (2011, November).	2011	/					
53.	Badaruddin, M. N. B. A., Arokiasamy, L., & Yusoff, H. 2011,2012,2015**	2011	/					2633
54.	Esmaceli, Hadi.	2011						/
55.	Hafezieh, N., Akhavan, P., Eshraghian, F.	2011						/

Notes: CE = Cyber Entrepreneurship, OE= Online Entrepreneurship, EE= E-Entrepreneurship, DE= Digital Entrepreneurship, SE= Social Entrepreneurship, PE= Perniagaan Digital, DT= Digital Technology.
 Keywords="Cyber entrepreneurship" OR "online entrepreneurship" OR "e entrepreneurship" OR "digital entrepreneurship" OR "social entrepreneurship"
 Source: Developed by researchers for this study.

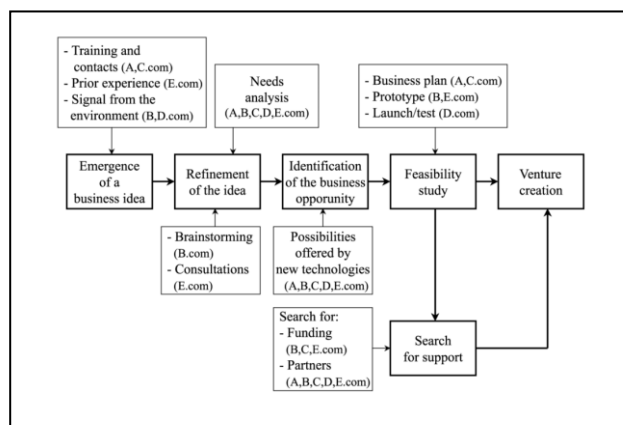
E. Past and Present Studies on Cyber Entrepreneurship in Malaysia

Apparently, there is limited research and study done purely discussing the term ‘cyber entrepreneurs’, as well as literature concerning the term, is comparatively new among the academicians. Supported by [5], the research in this area is still at the nascent phase, where only at the present time it started to capture the attention of many researchers.

Regarding the publication year of a common topic, between 2011 and 2019 (refer TABLE IV), seven (7) articles were published in 2019, nine (9) articles were published in 2018, three (3) articles were published in 2017, 11 articles were published in 2016, six (6) articles were published in 2015, eight (8) articles were published in 2014, six (6) articles were published in 2013, one (1) article was published in 2012 and four (4) articles were published in 2011, out of the total 55 articles.

F. Future Cyber Entrepreneurship in Malaysia

Following the pioneer studies completed on cyber entrepreneurship [9], it was found that future cyber entrepreneurship is a very important aspect. Apart from that, the cyber entrepreneurial process model provides the role for future cyber entrepreneurship and serves as a guide for cyber entrepreneurs. Subsequently, the emergence of business ideas, refinement of the ideas, identification of the business, feasibility study and the venture of business creation initiates [9] (see Fig. 1).



Source: Carrier, Raymond, & Eltaief (2004)

Fig. 1 Cyberentrepreneurial process Model

Nevertheless, the growth of business venture and economy greatly influences the global economic development. The studied the cyber entrepreneurial self-efficacy, intention, positive thinking and cultivating innovation to be significantly positive and moderate for future cyber entrepreneurship [11]. Both intrinsic and extrinsic components of cyber entrepreneurial motivations play a constructive role in the cyber entrepreneurship matter [12]. Therefore, future cyber entrepreneurship expansion in Malaysia is important and significant to economic development, poverty rate reduction, and community empowerment.

Moreover, the low entry cost and minimum capital requirement directly empowers, inculcates and attract the cyber entrepreneurs to venture into the cyber entrepreneurship activities. Nonetheless, there are limited research and study done purely discussing the term ‘cyber entrepreneurs’ alone, at the same time literatures concerning the term are comparatively new among many academicians. Supported [5], the research in this area is still at the nascent phase since only recently it started to capture the attention of many researchers in this particular area of study. On the other hand, there have been many studies referring to entrepreneurs who have started their business by utilizing the internet or information technology, and it was formed with a variety of terms, for example; e-entrepreneur, social entrepreneur, and techno- entrepreneur. Hence, it opens a wider and a golden opportunity for the researcher to dig into new research gaps as guidance and recommendation for future studies.

V. CONCLUSION

In a nutshell, the term “cyber entrepreneur” and “cyber entrepreneurship” can be concluded as any possible effort and venture benefiting, utilizing and applying the information technologies for the purpose of an entrepreneurial process which eventually gains profit. As far as concerned, the initiative and support of all parties, preferably government and private agencies are highly valued to play significant roles for the sake of the sustainability and growth of the economic wealth among cyber entrepreneurs.

ACKNOWLEDGMENT

Special thanks to the Short Term Research Grant Scheme (Code: R/SGJP/A0100/01270A/001/2019/00634) financing by Universiti Malaysia Kelantan for funding the research project. Special gratitude also goes to Professor Madya Dr. Zailani bin Abdullah from Universiti Malaysia Kelantan for mentoring this project.

VI. REFERENCES

- [1]. Edwards-Schachter, M., García-Granero, A., Sánchez-Barrioluengo, M., Quesada-Pineda, H., & Amara, N. (2015). Disentangling competences: Interrelationships on creativity, innovation and entrepreneurship. *Thinking Skills and Creativity*, 16, 27-39
- [2]. Global Entrepreneurship Monitor. (2018). *Global Entrepreneurship Monitor (GEM) 2017/2018*.
- [3]. Krueger, N. F., Reilly, M. D., & Carsrud, A. L. (2000). Competing models of entrepreneurial intentions. *Journal of Business Venturing*, 15(5–6), 411–432. [https://doi.org/10.1016/S0883-9026\(98\)00033-0](https://doi.org/10.1016/S0883-9026(98)00033-0)
- [4]. Muzafar, W. N. (2017). *Perniagaan Internet Siri1*. Grup Buku Karangkrak Sdn Bhd.
- [5]. Badaruddin, M. N., Mohamad, Z. Z., Awee, A., Mohsin, F. H., & Kadir, S. A. (2015). Cyber entrepreneurship ecosystem: proposed concept paper.
- [6]. Newman, A., Obschonka, M., Schwarz, S., Cohen, M., & Nielsen, I. (2019). Entrepreneurial self-efficacy: A systematic review of the literature on its theoretical foundations, measurement, antecedents, and outcomes, and an agenda for future research. *Journal of Vocational Behavior*, 110(October 2017), 403–419. <https://doi.org/10.1016/j.jvb.2018.05.012>
- [7]. Statistics of Graduates in the Labour Force Malaysia. (2019). *Jabatan perangkaan malaysia*.
- [8]. Champeaux, J., & Bret, C. (2000). *La cyberentreprise*. Dunod, Paris.
- [9]. Carrier, C. & Raymond, L. Cyberpreneurship: A multiple case study. *International Journal of Entrepreneurial Behaviour & Research*, 10(5), 349-363, 2004.
- [10]. Rahmawati, M. (2017). Pengaruh Penggunaan Cyberpreneurship Sebagai Media Pemasaran dalam Dunia Bisnis. *Jurnal Sistem Informasi*, (1), 26–33.
- [11]. Chang S.-H., Shu Y., Wang C.-L., Chen M.-Y. & Ho W.-S., Cyberentrepreneurship as an innovative orientation: Does positive thinking moderate the relationship between cyber-entrepreneurial self-efficacy and cyber-entrepreneurial intentions in Non-IT students?, *Computers in Human Behavior* (2019),
- [12]. Wang, Y. S., Lin, S. J., Yeh, C. H., Li, C. R., & Li, H. T. (2016). What drives students' cyber entrepreneurial intention: The moderating role of disciplinary difference. *Thinking Skills and Creativity*, 22, 22-35.
- [13]. Mamat, S. A., & Abdullah, Z. (2018). A Conceptual Development Of Cyberpreneurs Intention Among Higher Education Students. *International Journal of Digital Information and Wireless Communications (IJDWC)*, 8(March), 203–208.
- [14]. Chan, K. L. G., Selvadurai, S., Hamid, B. D. H. A., & Nurdin, G. (2015). Women Online Entrepreneurship And Social Environment In Malaysia: Some Preliminary Findings. *e-Bangi*, 12(3).
- [15]. Clark, V. L. P., & Creswell, J. W. (2015). *Understanding Research: A Consumer 's Guide (Second)*.
- [16]. Shaffril, H. A. M., Krauss, S. E., & Samsuddin, S. F. (2018). A systematic review on Asian's farmers' adaptation practices towards climate change. *Science of the Total Environment*, 644, 683–695. <https://doi.org/10.1016/j.scitotenv.2018.06.349>
- [17]. Boellstorff, T. (2019). The opportunity to contribute: disability and the digital entrepreneur. *Information Communication and Society*, 22(4), 474–490. <https://doi.org/10.1080/1369118X.2018.1472796>
- [18]. Department of Statistics Malaysia. (2017). *Ekonomi Census 2016 Usage Of ICT By Business And e-Commerce*.
- [19]. Wibhawa, B. (2019). IBEKA's social service delivery model in Indonesia's micro-hydro power. *Human Systems Management*, 37(4), 387–397. <https://doi.org/10.3233/HSM-171628>

- [20]. Batool, H., Rasheed, H., Malik, M. I., & Hussain, S. (2015). Application of partial least square in predicting e-entrepreneurial intention among business students: evidence from Pakistan. *Journal of Innovation and Entrepreneurship*, 4(1), 6.
- [21]. Fayolle, A., & Liñán, F. (2014). The future of research on entrepreneurial intentions. *Journal of Business Research*, 67(5), 663–666. <https://doi.org/10.1016/j.jbusres.2013.11.024>
- [22]. Illés, B. C., Dunay, A., & Jelonek, D. (2015). The entrepreneurship in Poland and in Hungary. Future entrepreneurs education perspective. *Polish Journal of Management Studies*, 12(1), 48–58.
- [23]. Matlay, H., & Westhead, P. (2005). Virtual Teams and the Rise of e-Entrepreneurship in Europe. *International Small Business Journal*, 23(3), 279–302. <https://doi.org/10.1177/0266242605052074>
- [24]. Song, A. K. (2019). The Digital Entrepreneurial Ecosystem—a critique and reconfiguration. *Small Business Economics*. <https://doi.org/10.1007/s11187-019-00232-y>
- [25]. Alam, S. S., & Noor, M. K. M. (2009), "ICT Adoption in Small and Medium Enterprises: an Empirical Evidence of Service Sectors in Malaysia", *International Journal of Business and Management*, Vol. 4 No. 2, pp. 112–125
- [26]. Baharuddin, M. N., & Ariokiasamy, L. (2010). Initiating cyber entrepreneur in higher education in Malaysia. In *Proceedings of Regional Conference on Knowledge Integration in ICT* (p. 583).
- [27]. Eduardo, Z. T. (2006). E-entrepreneurship and ICT Knowledge. *Journal of Entrepreneurial Management*, 20(1): 320-338
- [28]. Dy, A. M. (2019). Levelling the playing field? Towards a critical-social perspective on digital entrepreneurship. *Futures*, 102438. <https://doi.org/10.1016/j.futures.2019.102438>
- [29]. Waddell, D., Singh, M. and A. Musa, 2006. Entrepreneurial Opportunities on the Internet. In: *Entrepreneurship and Innovations in E-business in E-Business and Integrative Perspective*. F. Zhao (Ed.). IGI Global, Hershey, PA., pp: 179-306.
- [30]. Malone T, R Laubacher. The dawn of the e-lance economy. *Harvard Bus. Rev.* 1998; 76(5):145–152.
- [31]. Shane S, & Venkataraman S. The promise of entrepreneurship as a field of research. *Academy of management review* 2000;25(1):217-226.
- [32]. Khatibi A, Haque A, & Karim K. "E-Commerce: A study on Internet shopping in Malaysia", *Journal of Applied Sciences* 2006; 6(3):696–705.
- [33]. Jiwa S, Lavelle D, & Rose A. Netpreneur simulstion: Enterprise creation for the online economy. *International Journal of Retail & Distribution Management* 2004;32(12):137-150.
- [34]. Martin LM and Wright LT. "No Gender in cyberspace? Empowering entrepreneurship and innovation in female-run ICT small firms", *International Journal of Entrepreneurial Behaviour and Research* 2005;11(2):162-178.
- [35]. Ismail N, Jaffar N, Khan S, Leng TS. Tracking the cyber entrepreneurial intention of private universities students in Malaysia. *International Journal of Entrepreneurship and Small Business* 2012;17(4):538-546.
- [36]. Kuratko DF, Hodgetts RM. *Entrepreneurship: theory, Process, Practice*. (Mason,OH: South-Western);2004.
- [37]. Zaheer H, Breyer Y, Dumay, J and Enjeti M. "Straight from the horse's mouth: founders' perspectives on achieving 'traction' digital start-ups", *ComputersHuman Behavior* 2018; 1-13.
- [38]. Babry A, & Mehmood B. Cyber-entrepreneurship: Exploratory study of pure-dot-coms in Lahore, Pakistan. *International Journal of Economics and Empirical Research* 2016; 4(6):285-298.