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Entrepreneurship and Digital Competencies Among Higher Education Students

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ABSTRACT

The technological and digital transformation era has changed the entrepreneurial sector into a digital industry. Local research and studies from other developing countries highlight that digital entrepreneurship education is still emerging, with uneven effectiveness. Therefore, this descriptive study aims to identify the perception of entrepreneurship and digital competencies among final-year students at Universiti Putra Malaysia (UPM). Furthermore, the study also seeks to identify differences in the perception of entrepreneurship and digital competencies among final-year UPM students based on demographic factors. 192 respondents were selected using clustered random sampling from six faculties. This quantitative study used a Likert-scale questionnaire. Data were collected and analyzed using the IBM SPSS software to examine frequencies, percentages, means, and standard deviations. The study results showed that the perception levels of entrepreneurship and digital competencies among final-year UPM students were moderate. Additionally, the results indicated a significant difference in digital competency perception between male and female students. However, perceptions of entrepreneurship competency did not show significant differences between male and female students. Students need to be exposed to entrepreneurial and digital knowledge to encourage them to engage in entrepreneurial activities after graduation, in line with the Industrial Revolution 4.0.

Keywords: Digital entrepreneurial competency, communication, interpersonal, intercultural interaction

INTRODUCTION

Entrepreneurship is one of the sectors that support the economic development of a country. Government-sponsored entrepreneurship programs are effective in attracting graduates to start their businesses. Graduates benefit from these initiatives as their skills, knowledge, and income increase while contributing to the nation's economy. Individuals with entrepreneurial skills may undertake tasks that have the potential to enhance the position of an organization.

To ensure work efficiency, graduates must understand and recognize their digital capabilities. Graduates should be motivated to produce realistic outcomes that align with life's needs and aspirations by emphasizing a combination of basic education and entrepreneurial expertise. The number of unemployed graduates in 2021 was higher than in 2019, with 165,200 individuals. Most graduates who have completed their studies do not take the initiative to advance themselves. In 2024, the unemployment rate was 3.3%; in 2025, it is projected to be around 3.0%. This indicates a healthy labor market with steady improvements (Department of Statistics Malaysia, 2025).

Information Technology, such as the internet, is crucial in realizing the government's goal of the Industrial Revolution 4.0. This study was conducted to obtain information and answer questions regarding the perception of digital entrepreneurial competency levels among final-year students at Universiti Putra Malaysia. The study provides insights into students' views on digital entrepreneurial competency and readiness to contribute to the workforce.

Entrepreneurship involves independent and disciplined behavior, transitioning from old habits to new ones. Technical expertise, management abilities, and talent are essential in entrepreneurship, and these are key characteristics of entrepreneurial competency (Juhaidah & Dalbir, 2020).

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Entrepreneurs must practice digital entrepreneurship to produce and transform digital artifacts through firms or digital artifact platforms (Puad & Bakhtiar, 2019).

DIGITAL ENTREPRENEURSHIP IN THE ERA OF GIG AND DIGITAL ECONOMY

In recent years, digitalization has expanded beyond all expectations. The global gross domestic product (GDP), valued between USD 3.6 trillion and USD 12.3 trillion, was estimated to constitute 4.5% to 15.5% of the digital economy in 2017. This reflects the size and importance of the digital economy. Most countries invest in the digital economy to become more inclusive, efficient, and innovative. Countries such as Finland, Singapore, and Thailand have implemented long-term plans and policies to reap the benefits while protecting themselves from the digital economy's threats (Malaysia Digital Economy Blueprint, 2021).

As stated in Malaysia's Budget 2020, the digital economy platform has been identified as a key pillar given special attention by the government to encourage economic growth in the new economy and digital era. This demonstrates the government's commitment to ensuring inclusive economic growth, benefiting all citizens, especially the younger generation. The 12th Malaysia Plan includes the government. This highlights the government's commitment to ensuring that its youth can earn a sustainable livelihood (Ali & Buang, 2018; Muda, 2020).

Studies have shown that digital platforms are among the most debated aspects and influences on digital entrepreneurship (Diandra & Azmy, 2020). Digital platforms have transformed how markets compete and disrupted many traditional business structures. Common examples include how Netflix replaced Blockbuster and how Amazon disrupted established bookstores, such as Borders (Naude & Liebregts, 2020; Vanesaar et al., 2021).

The entrepreneurship curriculum and teaching strategies can influence students' development. More comprehensive and practical changes are needed to ensure that students' entrepreneurial ambitions are sustained among those pursuing entrepreneurship education in the future. There is a strong correlation between educational approaches and students' intentions to start their businesses. This demonstrates how curriculum strategies in entrepreneurship education can stimulate students' entrepreneurial tendencies (Iklima et al., 2020; Yusof & Jamaluddin, 2017).

The entrepreneurship sector holds promising prospects, which have been highlighted as a potential career path for providing employment to graduates and reducing national unemployment rates. However, research reveals that efforts have been made to integrate entrepreneurship as a professional field through indicators that focus on entrepreneurship as a career and efforts to establish firms (Ojonugwa et al., 2023; Sarmila et al., 2021). Students participate in activities designed to enhance their entrepreneurial competencies, develop entrepreneurial proposals, and engage in entrepreneurial activities under the guidance of supervisors or entrepreneurial mentors. They also receive evaluations at the end of the program (Omar et al., 2021; Sudapet et al., 2022).

Most accounting students in Malaysia reported that taking accounting courses has enhanced their critical thinking and problem-solving skills. Improvements in communication, ethics, morals, professional skills, leadership, and entrepreneurial skills follow. Next are lifelong learning, information management, and team-building skills (Arifin et al., 2020; Zainal & Yong, 2020). Based on research findings, it was determined that students' perceptions are contrary to current market trends, which are moving toward digital entrepreneurship. Digital entrepreneurship is becoming increasingly popular, competition is intensifying, and an increasing number of users are involved (Kurmanov et al., 2022). This is seen as a result of growing consumer awareness of the digital market alongside digital adoption, which has increased customer trust in business models (Paz et al., 2020; Perifanou, & Economides, 2019).

Azlie et al. (2022) state that digital entrepreneurs recognize and capitalize on opportunities from the Internet, mobile technology, or digital media. They must identify and seize opportunities based on technological understanding. Digital Literacy (DL) refers to a person's understanding, attitude, and capacity to use digital resources effectively. Individual characteristics have a significant impact on the acquisition, analysis, and production of digital information. The ability to learn is a key component in integrating digital technologies, showing how they are incorporated into interactions. Cognitive literacy involves thinking critically, handling complex issues, and sharing knowledge while learning new things.

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Entrepreneurs must apply sound judgment to encourage opportunistic initiatives and enhance cognitive growth. Learning to manage and resolve conflict is a component of socio-emotional development.

The model in Figure 1 is based on the concepts and principles of attribution theory, entrepreneurial self-efficacy (ESE), and the need for achievement. Entrepreneurship research has also gained significant attention for ESE. High ESE can, in turn, raise standards for achieving set goals. Entrepreneurs are driven by a desire to achieve and act based on their knowledge of what leads to desired outcomes while being influenced by self-confidence in their entrepreneurial skills. Digital entrepreneurs must cultivate motivation to achieve while identifying causal factors in the market, which is increasingly shaped by technology.

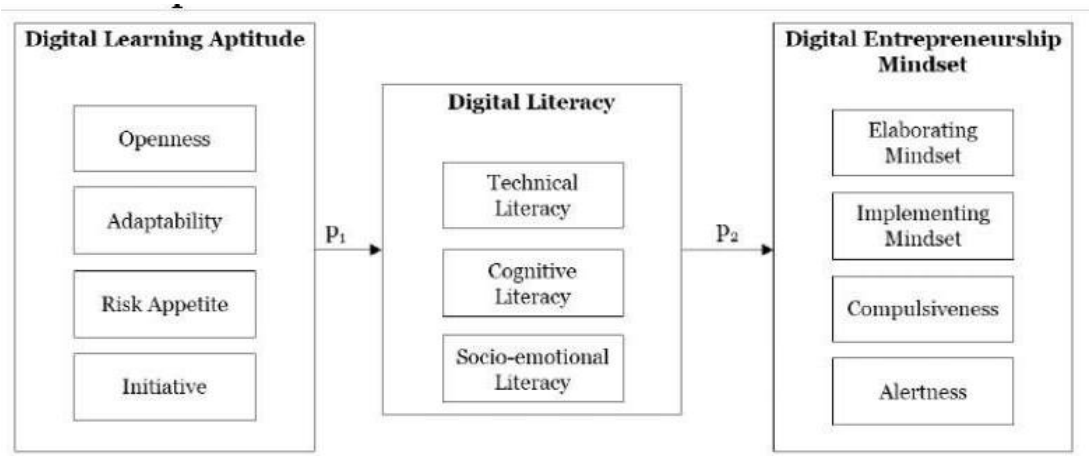

Figure 1. Conceptual model of digital entrepreneurship

This study aims to identify the perceptions of entrepreneurship and digital competencies among final-year students at Universiti Putra Malaysia. It also then identifies the perceptions of entrepreneurship and digital competencies levels according to gender, highest education level, and faculty.

METHODOLOGY

The research design selected by the researchers is a quantitative descriptive study using a questionnaire. The questionnaire method was chosen as the research instrument. The researchers prepared several questions using a questionnaire, and respondents were allowed to answer the research questions. A Google Forms link was prepared to ensure that respondents answer the research questions voluntarily, saving time and allowing them to provide feedback at their convenience. This provides an opportunity and platform for respondents to express their opinions regarding entrepreneurship and digital competencies.

IBM SPSS Statistics software was used to analyze the data, presenting the results in terms of percentage, frequency, mean, and standard deviation. Section A requires respondents to provide information about their demographics. Sections B, C, D, and E employed a Likert scale with five response options, where respondents were required to select only one answer for each item, indicating their opinions or views. Based on a five-point Likert scale ranging from 1 to 5, respondents indicated their level of agreement, ranging from "Strongly Disagree" to "Strongly Agree."

FINDINGS AND DISCUSSION

Demography

The results based on respondents' demographic data is presented in Table 1. Out of the 192 respondents in this study, 61 (31.8%) were male respondents and 131 (68.2%) were female respondents. Furthermore, each respondent had a highest level of education, with 58 respondents (30.2%) having completed Foundation studies, 54 respondents (28.1%) were Matriculation graduates, 55 respondents (38.6%) were Malaysian Higher School Certificate (STPM) graduates, and 25 respondents (13.1%)

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were Diploma holders. Six faculties were involved in this study. A total of 32 respondents (16.7%) were from the Faculty of Agriculture, 32 respondents (16.7%) from the Faculty of Human Ecology, 32 respondents (16.7%) from the Faculty of Engineering, 32 respondents (16.7%) from the Faculty of Educational Studies, 32 respondents (16.7%) from the Faculty of Science, and 32 respondents (16.7%) from the Faculty of Modern Languages and Communication.

Table 1. Respondent demographics (N=192)

Demography	Frequency	Percentage (%)
Gender		
Male	61	31.8
Female	131	68.2
Highest Education Background		
Foundation studies	58	30.2
Matriculation	54	28.1
Malaysian Higher School Certificate (STPM)	55	38.6
Diploma	25	13.1
Faculty		
Faculty of Agriculture	32	16.7
Faculty of Human Ecology	32	16.7
Faculty of Engineering	32	16.7
Faculty of Educational Studies	32	16.7
Faculty of Science	32	16.7
Faculty of Modern Languages and Communication	32	16.7

Level of Entrepreneurship Competency

Based on the analysis in Table 2 below, the item with the highest mean score at a moderate level is "I can supervise other employees in my organization." (Mean = 4.27, Standard Deviation = 0.65), where 97 respondents (50.52%) agreed, and 75 respondents (39.06%) strongly agreed, compared to only one respondent (0.52%) who disagreed. This analysis suggests that respondents believe an entrepreneur must be firm in monitoring the quality of work delivered by employees.

On the other hand, the item "I can manage in uncertain business situations" recorded the lowest mean score, which is low (Mean = 2.97, Standard Deviation = 0.89). A total of 82 respondents (42.71%) were unsure, 52 respondents (27.08%) strongly disagreed, 44 respondents (22.92%) agreed, and only eight respondents (4.17%) strongly agreed. This analysis indicates that respondents remain uncertain about whether entrepreneurs can effectively manage businesses in unpredictable and high-risk situations.

Overall, higher education students possess a moderate level of entrepreneurship competency (M = 3.85, SD = 0.51). This suggests that while students demonstrate a reasonable understanding and ability in entrepreneurial skills, there is still room for improvement, particularly in specific areas. Supervisory ability (M = 4.27), communication with customers (M = 4.18), and persistence in achieving business goals (M = 4.16) scored among the highest, suggesting that students are confident in their interpersonal and leadership skills. Group collaboration (M = 4.21) and decision-making skills (M = 4.04) also scored highly, indicating that students are comfortable working with others and making important business-related choices. These results suggest that students are more inclined toward relational and executive competencies, which are essential for teamwork and business operations.

However, the lowest-scoring item was "capable of managing in uncertain business situations" (M = 2.97), which falls into the Low category. This indicates a lack of confidence or preparedness among students when dealing with unpredictable business environments—an essential skill in digital entrepreneurship. Taking initiative (M = 3.45) and managing organizational activities (M = 3.59) were moderate but closer to the lower end of the scale, suggesting students may require further development in proactiveness and internal business management. These findings imply that while students have a good foundation in entrepreneurship, particularly in communication, teamwork, and persistence, they may lack the agility and risk-taking mindset needed in today's dynamic digital business environment. This gap is particularly significant in the context of digital entrepreneurship, which requires adaptability, innovation, and proactive leadership.

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Table 2. Perception of the level of entrepreneurship competency (N=192)

Item	Mean (M)	Standard Deviation (SD)	Interpretation
I am capable of performing entrepreneurial tasks.	3.82	0.72	Moderate
I am interested in working in a group.	4.21	0.73	Moderate
I am capable of motivating the community.	3.72	0.69	Moderate
I am a person who can make decisions.	4.04	0.59	Moderate
I am responsible for managing business resources.	3.96	0.79	Moderate
I can manage my organizational activities.	3.59	0.78	Moderate
I am capable of managing in uncertain business situations.	2.97	0.89	Low
I am capable of taking initiative in business.	3.45	0.82	Moderate
I am persistent in achieving business goals.	4.16	0.77	Moderate
I can have discussions with customers.	4.18	0.69	Moderate
I can supervise other employees in my organization.	4.27	0.65	Moderate
Total entrepreneurship competency	**3.85**	**0.51**	**Moderate**

Level of Digital Competency

Based on the analysis in Table 3, the item that recorded the highest mean score with a moderate level was "I know the ins and outs of digital business." (Mean = 3.91, Standard Deviation = 0.87), where 109 (84.50%) respondents agreed and 42 (21.88%) respondents strongly agreed, compared to 13 (6.78%) respondents who disagreed and 3 (1.56%) respondents who strongly disagreed. This analysis indicates that most final-year students at UPM believe that digital knowledge can be applied to entrepreneurship and business.

The item "I know how to develop smart applications" recorded the lowest mean score, also at a moderate level (Mean = 2.59, Standard Deviation = 0.94), where 72 (37.50%) respondents disagreed and 21 (10.94%) respondents strongly disagreed, compared to 29 (15.10%) respondents who agreed and 4 (2.08%) respondents who strongly agreed. This analysis indicates that respondents perceive smart application development as not being the primary role of an entrepreneur.

The results from Table 3 indicate that the overall digital competency of the respondents is at a moderate level (M = 3.85, SD = 0.51). While this suggests a foundational familiarity with digital tools and concepts among higher education students, a deeper analysis reveals several critical issues that merit attention. A closer inspection reveals that students generally feel confident in surface-level digital tasks, such as "Understanding digital business concepts" (M = 3.91), "Managing digital information" (M = 3.80), and "Handling digital databases" (M = 3.18). These competencies are more closely aligned with digital literacy than digital entrepreneurship, suggesting that students may be more familiar with the consumption and basic management of digital technologies than with the creation or innovation of digital solutions.

In contrast, core entrepreneurial tech competencies are crucial in today's digital economy and scored the lowest: "Developing smart applications" (M = 2.59), "Designing product manufacturing systems" (M = 2.88), "Programming skills related to business" (M = 3.02). This disparity reveals a critical weakness in students' ability to transform ideas into viable digital products or services. These low scores suggest that most students lack the technical fluency and innovation capacity required to thrive as digital entrepreneurs. The data implies that students may be gaining theoretical understanding of digital entrepreneurship without sufficient opportunities to develop hands-on, practical skills. For example, knowing what digital business is does not necessarily equate to being able to build and manage a digital enterprise. This reflects a potential misalignment between academic programs and industry expectations, where students are equipped with conceptual frameworks but not with the operational competencies demanded by the digital market.

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Table 3. Perception of the level of digital competency (N=192)

Item	Mean (M)	Standard Deviation (SD)	Interpretation
I understand the ins and outs of digital business.	3.91	0.87	Moderate
I understand the ins and outs of business in information technology.	3.64	0.83	Moderate
I am skilled in programming related to business.	3.02	0.97	Moderate
I am capable of designing product manufacturing systems.	2.88	1.00	Moderate
I know how to develop smart applications.	2.59	0.94	Moderate
I understand the methods for obtaining copyright and licensing in digitization.	3.06	1.02	Moderate
I can manage databases digitally.	3.18	0.93	Moderate
I can manage information digitally.	3.80	0.85	Moderate
Total digital competency	**3.85**	**0.51**	**Moderate**

Differences of Entrepreneurship and Digital Competencies According to Gender, Education and Faculty

Table 4 below presents the differences in entrepreneurship and digital competencies among higher education students, categorized by gender, educational level, and faculty. The findings reveal distinct patterns for each type of competency, with some notable implications. For entrepreneurship competency, the results indicate no statistically significant differences across gender ($p = 0.35$), education level ($p = 0.61$), or faculty ($p = 0.06$). This suggests that both male and female students perceive themselves as having similar levels of entrepreneurial ability. The lack of variation by education level suggests that prior academic background—whether from the Foundation studies, Matriculation, STPM, or Diploma streams does not significantly influence students' self-assessed entrepreneurship competency. Interestingly, although the difference by faculty did not reach statistical significance, the p-value ($p = 0.06$) is relatively close to the conventional threshold of 0.05. This may suggest that students from different faculties are exposed to varying levels of entrepreneurial learning opportunities or environments, warranting further investigation with a larger sample or more focused analysis.

In contrast, findings related to digital competency show statistically significant differences based on gender ($p = 0.02$) and faculty ($p = 0.01$), but not by education level ($p = 0.80$). The significant difference in digital competency between male and female students may reflect existing gender disparities in access to or familiarity with digital technologies. Male students may have greater exposure to digital tools or feel more confident engaging with digital tasks, a pattern that aligns with broader literature on gender and technology use. This finding underscores the importance of addressing digital equity in higher education, ensuring that female students receive equal opportunities to develop critical digital skills.

Additionally, the significant difference across faculties suggests that students' field of study influences digital competency. Faculties with a stronger emphasis on technology, engineering, or applied sciences may offer more digital training and practice, thereby enhancing students' competence in these areas. Conversely, students from non-technical faculties may have fewer opportunities to engage with digital systems, which can result in lower competency levels.

Overall, these findings suggest that while entrepreneurial skills appear to be uniformly developed across demographic and academic categories, digital competencies vary more substantially, particularly by gender and faculty affiliation. This suggests a need for targeted interventions to promote digital literacy across all disciplines and among underrepresented groups, ensuring equitable skill development in the digital era.

Table 4. Differences in entrepreneurship and digital competencies (N=192)

Competency	Gender			Education			Faculty		
	t	df	p-value	F	df	p-value	F	df	p-value
Entrepreneurship	0.94	190	0.35	0.61	3,188	0.61	2.14	5,186	0.06
Digital	2.37	190	0.02*	0.04	3,188	0.80	7.07	5,186	0.01*

Note. Significant difference at alpha 0.05

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CONCLUSION AND IMPLICATIONS

The study's findings show a moderate score for students' perceptions of entrepreneurial competency levels, digital competency levels, communication, interpersonal, and intercultural interaction skills, and self-development and security competencies among final-year students at Universiti Putra Malaysia. The results indicate satisfactory achievement of entrepreneurship courses offered in the academic programs for final-year students at Universiti Putra Malaysia. The findings also reveal that final-year students at UPM believe entrepreneurs are responsible for inspecting and monitoring the quality of work employees perform. Moreover, the results show that final-year students recognize the importance of digital knowledge for entrepreneurs. The study also indicates that entrepreneurs should possess noble character and positive moral values. Furthermore, the students demonstrate responsibility for their well-being. This study suggests that the prospects of entrepreneurship courses must be fully understood, especially in the digital context, so that students can grasp and master entrepreneurial knowledge and skills both directly and indirectly within the digital entrepreneurship landscape.

In terms of curriculum design and pedagogy, students generally perceive themselves to possess moderate levels of both entrepreneurship competency ($M = 3.85$) and digital competency ($M = 3.23$). However, specific items such as "managing uncertain business situations" ($M = 2.97$) and "developing smart applications" ($M = 2.59$) show lower scores, highlighting gaps in high-order entrepreneurial and digital skills. This suggests that higher education institutions (HEIs) should revise their curricula to include more experiential learning, problem-solving activities, and project-based modules that simulate real-world business and digital challenges, particularly those involving uncertainty and the integration of technology.

Moreover, in terms of skills development, students demonstrated a limited ability in technical digital areas, such as programming, application development, and product system design. These are core competencies in the digital economy era. Higher Education Institutions (HEIs) need to offer workshops or micro-credentials focusing on industry-relevant digital tools, such as coding (Python, JavaScript), low-code/no-code app development platforms, data analytics, and UI/UX design, to enhance their students' employability and entrepreneurial potential in digital domains.

Significant differences in digital competency were found based on gender ($p = 0.02$) and faculty ($p = 0.01$), but not for entrepreneurship competency. Male students and those from technology-oriented faculties tend to rate themselves higher in digital skills. This highlights the issue of equity and inclusiveness, as a gender and disciplinary divide exists in digital exposure. Institutions must adopt inclusive strategies—for instance, integrating mandatory digital literacy modules across all faculties, promoting women-in-tech initiatives, and ensuring equal access to technology resources and support.

In terms of educational policy and industry collaboration, the overall moderate level of entrepreneurship and digital competencies, alongside the demographic profiles, suggests that even at the university level, many students are not fully industry-ready, particularly in digital entrepreneurship fields. Policymakers and university leaders should enhance collaboration with industry partners to create more internships, mentorships, and digital entrepreneurship labs that bridge the gap between theory and practice. The National Entrepreneurship Policy (NEP 2030) and Malaysia Digital Economy Blueprint (MyDIGITAL) should be used as guiding frameworks for this alignment.

The data reveal subtle variations and suggest that potential faculty-specific or gender-specific factors may influence competency development. There is a need for longitudinal and qualitative studies to understand the underlying causes of these disparities. Higher Education Institutions (HEIs) should also monitor and evaluate the impact of newly implemented entrepreneurship and digital skills programs using both quantitative and qualitative Key Performance Indicators (KPIs) (e.g., startup creation rate, digital portfolio development).

The findings also provide important insights when viewed through the lens of Digital Entrepreneurship Theory which emphasizes the roles of digital artifacts, platforms, and infrastructure in shaping entrepreneurial behavior and opportunities in the digital age. The overall moderate level of entrepreneurship competency indicates that students generally perceive themselves as having the necessary entrepreneurial attributes—such as responsibility, decision-making ability, persistence, and communication. These characteristics align with the individual traits required for opportunity recognition and value creation, as highlighted in digital entrepreneurship theory. However, the lower

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score in managing uncertain business situations suggests a gap in adaptability, which is a key aspect of thriving in fast-changing digital environments.

The digital competency results reflect a more nuanced challenge. While students show moderate understanding of digital business and information systems, they report relatively low skills in crucial areas like application development, programming, and system design. These are essential components of digital artifacts and digital infrastructure in theory. The inability to fully utilize or create such artifacts limits the students' capacity to engage in innovative digital entrepreneurship. In essence, students may be aware of digital opportunities but lack the technical proficiency to act on them

RECOMMENDATIONS

The findings underscore the urgency for higher education institutions in Malaysia to strengthen both entrepreneurship and digital education through inclusive, industry-aligned, and skill-targeted strategies. Failing to address these gaps may result in graduates who are ill-prepared for the challenges of the Fourth Industrial Revolution (IR 4.0) and the digital entrepreneurial landscape.

REFERENCE

Ali, R., & Buang, N. A. (2018). Kompetensi keusahawanan sebagai mediator kesediaan penerapan elemen keusahawanan dalam kalangan pensyarah institusi pendidikan guru. *Jurnal Pendidikan Malaysia. 1*(1), 123-130.

Arifin, N. F., Rahman, R. S. A. R. A., & Othman, N. (2020). Tahap personaliti big six dan hubungan dengan kecenderungan keusahawanan digital dalam kalangan pelajar kolej komuniti. *Jurnal Pendidikan Malaysia. 45*(1), 101-110.

Azli, J., Ishak, A., R., & Azmi, A. (2022). Ekonomi digital: Inisiatif dan strategi pemulihan ekonomi oleh kerajaan pasca covid 19. *Journal of Islamic, Social Economics and Development (JISED). 7*(44), 136-152.

Department of Statistics Malaysia. (March 10, 2025). *Online services. Department of Statistics Malaysia.* https://www.dosm.gov.my/portal-main/online-services?data=6

Diandra, D., & Azmy, A. (2020). Understanding definition of entrepreneurship. *International Journal of Management, Accounting and Economics. 7*(5), 235-241.

Hasim, N. H. N., Hameed, L. B. M., & Omar, F. I. (2021). *Kesan penyertaan digital terhadap pemerkasaan usahawan B40 semasa pandemik covid-19: Satu kajian rintis.* Proceedings of 8th International Research Management and Innovation Conference. 24-32.

Iklima, H., A., R., Marry, T., P., Sung, T., P., Ahmad, S., A. (2020). *Persepsi pelajar terhadap pendidikan keusahawanan: Kajian terhadap pelajar program keusahawanan.* 4th International Conference on Social Science, Humanities and Technology. 119-125.

Juhaidah, A., H., & Dalbir, S. (2020). Teori kompetensi: Ulasan dari perspektif kemahiran digital. *Malaysian Journal of Information and Communication Technology. 5*(1), 1-23.

Kurmanov, N., Aliyeva, Z., Kabdullina, G., & Mutaliyena, L. (2020). Digital entrepreneurship competencies among student: Methodological aspects of the maturity level and development program making. *Journal of Entrepreneurship Education. 23*(2).

Malaysia Digital Economy Blueprint. (2021). *Unit Perancang Ekonomi, Jabatan Perdana Menteri.* https://www.epu.gov.my/sites/default/files/2021-02/rangka-tindakan-blueprint-ekonomi-digital-Malaysia.pdf

Muda, W. M. W. (2020). *Ekonomi gig dan masa depan anak muda.* Terengganu Strategic & Integrity Institute (TSIS). https://www.tsis.my/wp-content/uploads/2020/04/Ekonomi-Gig-dan-Masa-Depan-Anak-Muda.pdf

Naude, W., & Liebregts, W. (2020). *Digital entrepreneurship research: A concise introduction.* Institute of Labor Economics.

Ojonugwa, A., Puad, M. H. M., Omar, M. K., Kang, E. K. M. S., & Joy, Y. (2023). *Empowering students of vocational agricultural education through entrepreneurship in edible insect production in Nigeria.* International Graduate Research in Education Seminar 2023 Proceedings, Universiti Putra Malaysia, Malaysia. Retrieved from http://conference.upm.edu.my/greduc

eISSN: 2462-2079
http://doi.org/10.47836/injet.11.2.09

Omar, M. K., Ali, N. S. M., Puad, M. H. M., Yaakub, M. & Zakaria, A. (2021). Enabling employment for people with disability (PWD): Readiness, commitment, and disposition of Malaysian employers. *International Journal of Entrepreneurship and Management Practices (IJEMP), 4*(15), 1-22.

Perifanou, M., A., & Economides, A., A. (2019). *The digital competence action framework.* 12th annual International Conference of Education, Research and Innovation. 11109-11116.

Puad, M. H. M. & Bakhtiar, A. N. A. (2019). *The influence of gender, career exposure and self-concept factors towards employability skills among students in entrepreneurial development and graduate marketability program.* Proceedings of the International Conference on Educational Research and Practice (ICERP) 2019, Putrajaya, Malaysia. Retrieved from www.icerp.upm.edu.my

Sarmila, M. S., Zaimah, R., & Syafiqah, M. S. (2021). Kesediaan graduan memilih keusahawanan sebagai bidang kerjaya. *Malaysian Journal of Society and Space. 17*(4), 17-29.

Vanesaar, U., Malleus, E., Arro, G., & Toding, M. (2021). *Entrepreneurship competence model for supporting learner's development at all educational levels.* Administrative Science.

Yusof, N. & Jamaluddin, Z. (2017). Pembangunan kebolehpasaran siswazah: Tindakan universiti dan cabaran yang dihadapi. *Jurnal Personalia Pelajar. 20*(1), 15-32.