

Analysis of the Effectiveness of the Digital Entrepreneurship Programme at Ledang Community College on Local Entrepreneur Development in Tangkak

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Abstract

This study evaluates the impact of the digital entrepreneurship program at Ledang Community College on the growth of digital skills and knowledge among entrepreneurs in Tangkak. Utilising a mixed analysis technique combining quantitative data from surveys and qualitative data through semi-structured interviews, the study involved 45 entrepreneurs. The results show significant improvements in entrepreneurs' digital skills and knowledge, particularly in data analysis and digital marketing. Additionally, the program has enhanced business performance with substantial increases in sales and customers. Furthermore, the program successfully promoted creativity and risk-taking among participants. Based on these findings, it is recommended that future programs enrich learning resources, expand networking opportunities, and offer more practical courses. In conclusion, the digital entrepreneurship curriculum at Ledang Community College strengthens entrepreneurs' ability to navigate the digital economy, significantly impacting the prosperity and development of their businesses.

Keywords: Digital Entrepreneurship, Digital Skills Improvement, Business Performance, Innovation and Risk-taking, Local Entrepreneurs

1.0 Introduction

In the rapidly evolving global economy, driven by information technology, digital entrepreneurship has become essential for fostering innovation, economic growth, and social progress (George et al., 2021). Digital technology offers extensive opportunities for entrepreneurs to establish profitable and competitive businesses in the global market (Rahman, 2022). The unique potential of digital entrepreneurship lies in its ability to leverage technology to create new value and find innovative solutions to existing challenges (Elia et al., 2020).

Local entrepreneurs, defined as individuals who start and operate businesses within specific geographic and social contexts, play a crucial role in regional economic development (Kraus et al., 2021). In Tangkak, a region in Malaysia with significant potential for local economic growth, entrepreneurs are well-positioned to innovate and stimulate the local economy. However, despite this potential, Tangkak entrepreneurs face challenges in adopting digital

technologies due to limited access to resources and technical expertise (Fossen & Sorgner, 2021).

This study aims to evaluate the impact of the Digital Entrepreneurship Programme provided by Ledang Community College on the digital skill development and business performance of local entrepreneurs in Tangkak. This objective aligns with the goals of the Twelfth Malaysia Plan (RMKe-12) 2021-2025, which emphasises enhancing digital adoption and fostering innovation among Malaysian businesses. The research questions guiding this study are:

- i. How does the Digital Entrepreneurship Programme affect the digital skills and knowledge of local Tangkak entrepreneurs?
- ii. What is the impact of this program on enhancing their business performance?

By employing a quantitative approach, this study seeks to provide empirical data on the direct effects of the program on digital competencies and business success. The theoretical framework for this study is grounded in Knowles' (1984) theory of adult learning (andragogy) and Schumpeter's (1934) theory of entrepreneurship. Knowles' theory emphasises the importance of self-directed learning and the practical application of knowledge, while Schumpeter's theory highlights the significance of innovation and the entrepreneur's role in economic development.

This research aims to fill the gap in the literature regarding the effectiveness of digital entrepreneurship education in fostering local business growth and innovation. By examining the case of the Digital Entrepreneurship Programme at Ledang Community College, this study contributes valuable data on how such educational initiatives can support the development of regional entrepreneurs, thereby enhancing their ability to navigate and succeed in the digital economy. These efforts directly support the RMKe-12's goal of bridging the digital divide and ensuring inclusive growth across Malaysia.

2.0 Literature Review

Digital entrepreneurship has fundamentally transformed traditional business processes by incorporating digital technologies in areas such as customer management, transactions, services, and feedback (Zulkarnain et al., 2019). This transformation has significantly driven economic growth and innovation, allowing businesses to reach a wider audience and operate more efficiently (Sudewa et al., 2023). Digital entrepreneurship leverages digital tools and platforms to create, manage, and grow new business ventures, which is crucial in the modern economy. The RMKe-12 emphasises the importance of enhancing digital adoption and innovation among Malaysian businesses to remain competitive in the global market (Rahman, 2022).

The theoretical foundation of this study is based on Knowles' (1984) theory of adult learning (andragogy) and Schumpeter's (1934) theory of entrepreneurship. Knowles' theory emphasises the importance of self-directed learning and the application of knowledge in practical settings, highlighting the role of experience in adult learning. Schumpeter's theory underscores the significance of innovation in economic development and the role of entrepreneurs in introducing new products and services, thereby driving economic progress (George et al., 2021).

Research has demonstrated that digital entrepreneurship education significantly enhances the digital skills and knowledge of entrepreneurs (Satalkina & Steiner, 2020). These skills include proficiency in digital marketing, data analytics, and the use of social media for business. Improved digital skills enable entrepreneurs to better navigate the digital economy, optimise their business operations, and enhance their decision-making processes. This enhancement is crucial for the competitiveness and sustainability of businesses in the digital age (Hsieh & Wu, 2019).

Several studies have highlighted the positive impact of digital entrepreneurship on business performance. Entrepreneurs with high levels of digital proficiency have reported increased profitability, productivity, and market reach (Zulkarnain et al., 2019). Digital tools and platforms allow businesses to streamline operations, reduce costs, and improve customer engagement, leading to better overall performance. This directly supports the RMKe-12's focus on enhancing productivity and competitiveness through digital transformation (George et al., 2021; Rahman, 2022).

Despite the benefits, entrepreneurs, especially in regions like Tangkak, face challenges in adopting digital technologies. These challenges include limited access to resources, lack of technical expertise, and resistance to change (Fossen & Sorgner, 2021). Addressing these barriers is essential for maximising the potential of digital entrepreneurship. Educational initiatives and support programs are critical in helping entrepreneurs overcome these challenges and fully leverage digital tools for business growth (Sudewa et al., 2023).

3.0 Methodology

This study employs a quantitative research design to evaluate the impact of the Digital Entrepreneurship Programme at Ledang Community College on the digital skills and business performance of local entrepreneurs in Tangkak. The quantitative approach allows for the collection of numerical data that can be statistically analysed using SPSS, providing objective and reliable results (Creswell & Creswell, 2020).

The study population consists of local business owners in Tangkak who have participated in the Digital Entrepreneurship Programme at Ledang Community College. Using purposive sampling, 40 participants were selected to ensure representation across various business sectors and levels of

program engagement. This sampling method ensures that the selected sample accurately reflects the diversity and characteristics of the broader population of entrepreneurs in the region (Palinkas et al., 2020).

Data were collected using a structured questionnaire designed to capture detailed information on participants' digital skills and business performance. The questionnaire was developed based on the study's objectives and a comprehensive review of relevant literature. It includes sections on demographic information, digital knowledge and skills, business performance metrics, and perceptions of the program's effectiveness. The questionnaire uses a Likert scale with responses ranging from 1 (strongly disagree) to 5 (strongly agree) to assess participants' perceptions (Mishra et al., 2019).

Quantitative data were analyzed using SPSS (Statistical Package for the Social Sciences). The analysis included both descriptive and inferential statistics to provide a comprehensive understanding of the data.

- i. **Descriptive Statistics:** Means, frequencies, and percentages were used to summarise the demographic characteristics of the respondents and their overall responses to the questionnaire items.
- ii. **Inferential Statistics:** Paired sample T-tests and Analysis of Variance (ANOVA) were employed to examine the differences between pre-and post-program periods and to determine the statistical significance of changes in digital skills and business performance (Nanjundeswaraswamy & Divakar, 2021).
 - **Paired Sample T-Test:** Used to compare the means of participants' responses before and after the program to determine the significance of improvements in digital skills and business performance.
 - **ANOVA:** Employed to analyse differences among multiple groups within the sample, such as different business sectors or levels of program engagement, to identify any statistically significant variations.

4.0 Results and Discussion

This section presents the study's findings on the impact of the Digital Entrepreneurship Programme at Ledang Community College on the digital skills and business performance of local entrepreneurs in Tangkak. The findings are based on the analysis of quantitative data collected through structured questionnaires from 40 participants.

4.1 Background of Respondents

The demographic analysis shows that most respondents are male (55%), with females comprising 45%. Most participants are aged between 31 and 40 years (50%), followed equally by those aged 25–30 and 41–50 years (25% each). In terms of education, the largest group holds a Diploma or Degree (40%), followed by SPM/Certificate holders (35%) and Postgraduates (25%). As for business sector, Food & Beverage is the most common at 35%, followed by

Service (30%), Bakery & Pastry (20%), and Beauty & Spa (15%), as shown in Table 1.

Table 1: Background of Respondents

Demographic Factor	Category	Frequency	Percentage (%)
Gender	Male	22	55%
	Female	18	45%
Age	25-30 years	10	25%
	31-40 years	20	50%
	41-50 years	10	25%
Education Level	SPM/Certificate	14	35%
	Diploma/Degree	16	40%
	Postgraduate	10	25%
Business SEctor	Food & Beverage	14	35%
	Service	12	30%
	Bakery & Pastry	8	20%
	Beauty & Spa	6	15%

4.2 Analysis of Digital Knowledge and Skills

Table 2 shows the analysis of digital skills improvement among participants. Most participants reported significant improvements in their digital skills, particularly in digital knowledge, marketing, and analytics. High mean scores across all items indicate that the program effectively enhanced the digital competencies of the participants (Elia et al., 2020; Sudewa et al., 2023).

Table 2: Analysis of Digital Knowledge and Skills Level

Frequency							
Item	Questions	1	2	3	4	5	Mean
1	Increasing Digital Knowledge	0 (0%)	1 (2.5%)	4 (10%)	15 (37.5%)	20 (50%)	4.35
2	Increasing Digital Skills	0 (0%)	0 (0%)	5 (12.5%)	18 (45%)	17 (42.5%)	4.30
3	Understanding Big Data & Analytics	1 (2.5%)	1 (2.5%)	3 (7.5%)	20 (50%)	15 (37.5%)	4.20
4	Skills in Digital Marketing	0 (0%)	2 (5%)	3 (7.5%)	20 (50%)	15 (37.5%)	4.20
5	Decisions Based on Digital Information	1 (2.5%)	1 (2.5%)	2 (5%)	21 (52.5%)	15 (37.5%)	4.20

4.3 Analysis of Business Performance

Table 3 shows the analysis of business performance improvement among participants. Participants reported considerable improvements in various aspects of business performance, including increased income, customer base, and online business visibility. These improvements reflect the effectiveness of the program in enhancing the business capabilities of local entrepreneurs (Rahman, 2022; George et al., 2021).

Table 3: Analysis of Business Performance

Frequency							
Item	Questions	1	2	3	4	5	Mean
1	Increased Income	0 (0%)	2 (5%)	3 (7.5%)	20 (50%)	15 (37.5%)	4.20
2	Number of Customers	0 (0%)	1	4	18 (45%)	17	4.28

Frequency							
Item	Questions	1	2	3	4	5	Mean
	Increases		(2.5%)	(10%)		(42.5%)	
3	Increased Online Business Visibility	0 (0%)	2 (5%)	2 (5%)	19 (47.5%)	17 (42.5%)	4.28
4	Increased Competitive Capabilities	1 (2.5%)	1 (2.5%)	3 (7.5%)	17 (42.5%)	18 (45%)	4.25
5	More Optimal Business Operations	1 (2.5%)	0 (0%)	4 (10%)	20 (50%)	15 (37.5%)	4.22

4.5 Analysis of Innovation and Risk-Taking

Table 4 shows the analysis of innovation and risk-taking among participants of the digital entrepreneurship program. These findings show that most program participants felt more confident in experimenting with new ideas and embracing opportunities despite uncertainties. The high mean scores (mean > 4.2) for each item related to innovation and risk-taking suggest that the program effectively fosters creative thinking and risk-taking behaviours among entrepreneurs. This aligns with Schumpeter's (1934) theory of entrepreneurship, which emphasises the importance of innovation in economic development.

Table 4: Analysis of Innovation and Risk-Taking

Frequency							
Item	Questions	1	2	3	4	5	Mean
1	Dare to Innovate	0 (0%)	1 (2.5%)	3 (7.5%)	18 (45%)	18 (45%)	4.33
2	Dare to Take Risks	0 (0%)	2 (5%)	2 (5%)	20 (50%)	16 (40%)	4.25
3	Implementing New Ideas in Business	0 (0%)	1 (2.5%)	4 (10%)	19 (47.5%)	16 (40%)	4.25
4	Finding New Opportunities	1 (2.5%)	0 (0%)	3 (7.5%)	21 (52.5%)	15 (37.5%)	4.23
5	Overcoming Uncertainty	0 (0%)	1 (2.5%)	3 (7.5%)	20 (50%)	16 (40%)	4.28

4.5 T-Test and ANOVA Analysis

The paired sample t-test and ANOVA results further confirm the significant impact of the digital entrepreneurship program on participants' digital skills and business performance. Table 5 shows significant improvements in both digital skills and business performance after the intervention. The mean difference for digital skills is -1.2 ($p = 0.000$), indicating a statistically significant increase in post-intervention. Similarly, business performance improved with a mean difference of -1.5 ($p = 0.000$). The negative values reflect that post-test scores were higher than pre-test scores. Both results are statistically significant at the 0.05 level, confirming the effectiveness of the intervention.

Table 5: T-Test Analysis

Pair	Mean Difference	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference	t	df	Sig. (2-tailed)
Pre-Digital Skills - Post-Digital Skills	-1.2	0.45	0.07	[-1.34, -1.06]	-16.00	39	0.000
Pre-Business Performance - Post-Business Performance	-1.5	0.50	0.08	[-1.66, -1.34]	-18.75	39	0.000

Table 6 shows the ANOVA results indicating significant differences in both digital skills improvement and business performance enhancement across various groups. For digital skills, the F-value is 6.47 with a p-value of 0.003, demonstrating a statistically significant difference. Similarly, business performance exhibits a significant difference with an F-value of 7.89 and a p-value of 0.001. These findings suggest that the interventions or group conditions had varying impacts on the measured outcomes.

Table 6: ANOVA Analysis

Source	Sum of Squares	df	Mean Square	F	Sig
Digital Skills Improvement					
Between Groups	5.32	2	2.66	6.47	0.003
Within groups	17.83	37	0.48		
Total	23.15	39			
Business Performance Enhancement					
Between Groups	6.78	2	3.39	7.89	0.001
Within Groups	18.48	37	0.50		
Total	25.26	39			

5.0 Conclusion

The findings from this study indicate that the Digital Entrepreneurship Programme at Ledang Community College has had a substantial positive impact on the digital skills and business performance of local entrepreneurs in Tangkak. This section discusses the implications of the findings in the context of existing literature and the goals of the Twelfth Malaysia Plan (RMKe-12) 2021-2025.

The analysis revealed significant improvements in participants' digital knowledge and skills, particularly in areas such as digital marketing and data analytics. These findings are consistent with previous research, which indicates that targeted digital entrepreneurship education can significantly enhance digital competencies (Elia et al., 2020; Sudewa et al., 2023). The high mean scores across all digital skills items suggest that the program effectively

equips participants with the necessary skills to navigate the digital economy. This enhancement in digital skills aligns with RMKe-12's objective to bolster digital adoption among Malaysian businesses to increase their global competitiveness (Rahman, 2022).

Participants also reported notable improvements in various aspects of business performance, including increased income, customer base, and online business visibility. These results align with the findings of other studies that have shown a positive correlation between digital proficiency and business performance (George et al., 2021; Zulkarnain et al., 2019). The ability to effectively use digital tools and strategies has enabled these entrepreneurs to optimise their business operations, reach a broader market, and enhance customer engagement. These improvements are in line with the RMKe-12's focus on enhancing productivity and competitiveness through digital transformation.

The program also fostered a culture of innovation and risk-taking among participants. The high mean scores for items related to innovation and risk-taking indicate that participants felt more confident in experimenting with new ideas and embracing opportunities despite uncertainties. This finding supports Schumpeter's (1934) theory of entrepreneurship, which emphasises the importance of innovation in economic development. Encouraging an entrepreneurial mindset that is open to innovation and risk is essential for sustaining business growth and competitiveness, as highlighted by the RMKe-12.

The study's findings have several practical implications. Educational institutions and policymakers should consider integrating advanced digital tools and continuous support systems into their programs to ensure sustained improvement in digital skills and business performance. The success of the Digital Entrepreneurship Programme at Ledang Community College indicates that similar initiatives could be effectively implemented in other regions to foster inclusive economic growth and digital transformation (Satalkina & Steiner, 2020; Hsieh & Wu, 2019).

In conclusion, the Digital Entrepreneurship Programme at Ledang Community College has significantly enhanced the digital skills and business performance of local entrepreneurs in Tangkak. The program's success underscores the critical role of targeted educational initiatives in bridging the digital divide and promoting regional economic growth. The improvements observed in digital competencies, business performance, and innovation capabilities among participants demonstrate the program's alignment with the objectives of the Twelfth Malaysia Plan (RMKe-12) 2021-2025.

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Author Contributions

Faridah Shariyah Sharuddin: Conceptualisation, Methodology, Data Collection, Draft Writing; **Norazila Aniah:** Data Preparation, Validation, Supervision, Review & Editing.

Conflict of Interest

This manuscript has not been published elsewhere and is not currently under consideration by any other journal. All authors have authorised the submission of this manuscript and confirm that there are no conflicts of interest in this study.

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