

THE FACTORS AFFECTING STUDENTS' INTENTION TO PARTICIPATE IN TRAINING AND DEVELOPMENT PROGRAMS ON DIGITAL AND TECHNOLOGICAL SKILLS AT CAN THO UNIVERSITY OF TECHNOLOGY

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Abstract: *This study investigates the factors affecting students' intention to participate in training and development programs on Digital and Technological skills at Can Tho University of Technology. Using a survey of 339 students, the study employs reliability testing, exploratory factor analysis (EFA), and Partial Least Squares Structural Equation Modeling (PLS-SEM) to analyze the data. The results reveal that Cost and Time, Expected Benefits, and Learning Environment significantly and positively impact students' intention to participate, while Perceived Importance of Digital Skills, Confidence in Learning Digital Skills, and Support from University and Family show no statistically significant effects. The model explains 59.1% of the variance in students' intention to participate, demonstrating a strong explanatory capacity. This study contributes to the understanding of factors influencing training participation and provides actionable insights for educational institutions in the digital age.*

Keywords: *Can Tho University of Technology, digital skills, intention to participate, technological skills, training.*

I. Introduction

In the context of the rapidly advancing Fourth Industrial Revolution, digital and technological skills have become indispensable across all areas of social life. Particularly for university students, those who will soon enter the labor market, equipping and enhancing digital and technological skills is a prerequisite to meeting the demands of future employers.

According to the 2023 World Economic Forum report, 85% of jobs

will require basic digital skills by 2030. However, a 2022 survey by the Ministry of Education and Training revealed that only about 35% of university students in Vietnam have participated in training or development programs on digital and technological skills. This highlights a significant gap between market demands and the current state of students' digital skills.

At Can Tho University of Technology, which trains thousands of technical students annually, participation in digital and technological skill training

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programs remains a challenge. According to the university's internal statistics, as of the end of 2023, only 502 students had enrolled in digital and technological skill courses, despite the majority recognizing the importance of these skills for their future. This raises questions about the factors influencing students' decisions to participate in such training programs. Therefore, the study titled "*Factors Affecting Students' Intention to Participate in Digital and Technological Skill Training Programs at Can Tho University of Technology*" has been conducted.

II. Theoretical Framework and Literature Review

2.1. Literature Review

Research on the factors influencing students' intention to participate in university digital and technological skills training programs is vital for improving the quality and diversity of educational activities. Understanding students' intentions is a key determinant of university development. Studies have shown that positive attitudes toward learning and perceived career benefits from digital and technological skills training are critical factors driving students' participation intentions. For example, Venkatesh et al. (2003) found that performance and effort expectancy significantly shape intentions to adopt new technologies. Similarly, Lin and Lu (2010) studied university students' attitudes toward learning digital skills and revealed that intrinsic motivation and self-efficacy positively impact participation intentions. According to Wang et al. (2015), peer and family influence plays a significant role in students' decisions to enroll in digital skills training programs. Students are more likely to participate when they see friends or family members joining, as this creates a sense of comfort and motivation. Hung et al. (2010) highlighted the importance of online

learning communities in encouraging students to join courses related to digital and technological skills. Cost and affordability are also critical determinants, as shown in Tan and Teo's (2000) research. Students often consider financial issues and support mechanisms such as scholarships or tuition fee reductions can be significant motivators. Altbach et al. (2009) emphasized the importance of institutional support programs, noting that teaching quality, study materials, and academic support services are crucial in promoting students' participation intentions. Additionally, access to technology and learning resources is a decisive factor. Selwyn (2007) found that students are less likely to join courses if they lack access to devices or stable Internet connectivity. Moore and Kearsley (2011), in their study on online learning, pointed out that a robust technological infrastructure and a conducive learning environment increase students' intentions and ability to participate in online digital skills courses. Cultural factors also play a role, as Hofstede (2001) demonstrated in his research on cultural dimensions. Acceptance of technology and learning behaviors vary by cultural context, influencing participation intentions differently across countries or regions.

In Vietnam, Nguyen (2020) identified that teaching quality, faculty support, and course affordability are key factors influencing students' decisions to participate in digital skills training programs. Her research also emphasized the importance of perceived career benefits as a motivating factor for students. Overall, the literature suggests that factors such as attitudes toward learning, perceived benefits, peer influence, institutional support, and technological infrastructure all play significant roles in shaping students' intentions to participate in digital and technological skills training. Addressing these factors holistically can

help universities design more effective programs that meet students' needs and expectations.

2.2. Theoretical Framework

Digital and technological skills training refers to the process of providing knowledge, skills, and competencies in digital technologies, enabling learners to apply digital tools and methods in work and daily life. Digital skills development involves enhancing or updating existing knowledge and skills to meet the new demands of technology and the labor market (Mayer, 2021).

Experiential Learning theory encompasses two main aspects: the learning cycle and practical application. The learning cycle includes four stages: concrete experience, reflective observation, abstract conceptualization, and active experimentation. The practical application emphasizes that learning digital and technological skills must be integrated into real-world scenarios to achieve optimal effectiveness (Mezirow, 2000).

Developed by Ajzen (1991) as an extension of the Theory of Reasoned Action (TRA, Ajzen & Fishbein, 1975), TPB posits that behavior can be predicted or explained by intentions (motivations) to perform that behavior. Intentions are assumed to reflect the factors influencing

behavior and are defined as the degree of effort individuals are willing to exert to perform the behavior (Ajzen, 1991). TPB states that human behavior is predicted by intentions, which are influenced by attitudes toward the behavior, subjective norms, and perceived behavioral control. These intentions and perceived behavioral control account for significant variations in actual behavior.

Proposed by Davis (1989), the Technology Acceptance Model (TAM) explains users' acceptance of new technologies. It can be applied to understand intentions to participate in digital and technological skills training programs.

Technology Innovation Diffusion Model Developed by Rogers (1962), this model explains how individuals adopt and apply technological innovations. Factors such as compatibility, trialability, and observability influence participation intentions for digital and technological skills training.

III. Research Methodology

3.1. Research Model

Based on the theoretical framework of participation intention in training and development, along with the empirical research models reviewed earlier, the theoretical research model of this study is constructed as follows:

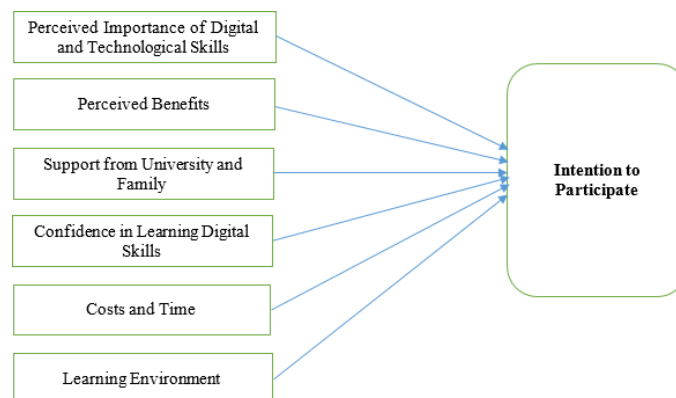


Figure 1. Proposed research model

Source: Author's compilation, 2024.

Measurement Scales:

The measurement scale for the intention to participate in digital and technological skills training programs is developed based on a synthesis of related studies. The author inherits and modifies factors within the scale to align with the content and characteristics

of the new research context. Additionally, qualitative research findings are incorporated to supplement certain observed variables tailored to the conditions at Can Tho University of Technology. The observed variables in these scales are presented in Table 1 below.

Table 1. Scale description

No.	Items	Statements	Source
I	PIDS	Perceived Importance of Digital Skills	
1	PIDS1	I perceive digital skills as essential for my studies and future career.	
2	PIDS2	Improving my digital skills will make me more competitive in the job market.	Davis (1989); Fishbein and Ajzen (1975); Venkatesh et al. (2003);
3	PIDS3	New technologies are important for my success in both studies and career.	
4	PIDS4	I believe that digital skills will enhance my learning and work efficiency.	
5	PIDS5	I need to learn more digital skills to keep up with the developments in my profession.	
II	EB	Expected Benefits	
6	EB1	Attending training courses will make it easier for me to find a job.	Davis (1989); Venkatesh et al. (2003); Lin and Lu (2010);
7	EB2	The digital skills I learn will help me increase my income.	
8	EB3	I expect to develop professionally after attending these courses.	
9	EB4	The training courses will boost my confidence in both learning and work.	
10	EB5	I hope these courses will open up opportunities for career advancement in the future.	
III	SSF	Support from School and Family	
11	SSF1	My family always encourages me to participate in digital skills training courses.	Venkatesh et al. (2003); Hung et al. (2010); Wang et al. (2015)
12	SSF2	The school provides comprehensive information about digital skills training and development courses.	
13	SSF3	I receive financial support from my family to attend training courses.	
14	SSF4	The school creates favorable conditions for me to learn additional digital skills.	
15	SSF5	Both my family and the school support my efforts to improve my digital skills.	
IV	CLDS	Confidence in Learning Digital Skills	
16	CLDS1	I am confident that I can learn new digital skills without difficulty.	Bandura (1986); Compeau and Higgins (1995)
17	CLDS2	I feel comfortable working with new technologies.	
18	CLDS3	I can easily apply the digital skills I have learned to practical work.	
19	CLDS4	I am confident that I can keep up with modern technological trends.	
20	CLDS5	I believe that I have the ability to overcome challenges in learning digital skills.	

No.	Items	Statements	Source
V	CT	Cost and Time	
21	CT1	The cost of attending training courses is an obstacle for me.	
22	CT2	The long duration of study makes it difficult for me to participate in training courses.	Tan and Teo (2000);
23	CT3	I have sufficient finances to attend digital skills training courses.	Altbach et al. (2009)
24	CT4	I can balance my time between studying and my current job while attending training courses.	
25	CT5	I am willing to invest time and money to attend digital skills courses.	
VI	LE	Learning Environment	
26	LE1	The learning environment at my school provides good support for learning digital skills.	
27	LE1	The equipment and facilities at my school meet the needs for learning digital skills.	
28	LE1	The instructors and support staff at my school help me easily acquire knowledge about digital skills.	Selwyn (2007); Moore and Kearsley (2011)
29	LE1	I feel that the learning environment is very favorable for learning digital skills.	
30	LE1	The learning resources at my school are sufficient and useful for learning digital skills.	
VII	ITP	Intention to Participate	
1	ITP1	I intend to participate in digital skills and technology training courses in the future.	
2	ITP2	I am willing to invest time in attending digital skills and technology courses.	Ajzen (1991); Davis et al. (1989)
3	ITP3	I believe that attending digital skills and technology training courses will benefit my future career.	

Source: Author's compilation, 2024.

3.2. Analytical Methods

The study employs several analytical methods:

Reliability Testing: The reliability of the measurement scale is tested using Cronbach's alpha coefficient.

Exploratory Factor Analysis (EFA): This method is used to identify the factors influencing the intention to participate in digital and technological skills training programs.

Partial Least Squares Structural Equation Modeling (PLS-SEM): This approach is applied to estimate the degree of impact of the variables on students' intention to participate in digital and technological skills training programs at Can Tho University of Technology.

PLS-SEM is a multivariate analysis method suitable for exploring relationships between variables and evaluating the impact of factors on intentions or behaviors. It is particularly useful for studies with small sample sizes or complex research models.

3.3. Research Data

According to Nguyen (2011), the minimum sample size for EFA is 50, with a recommended observation-to-variable ratio of 5:1, meaning five observations per observed variable. Given that the study involves 33 observed variables, a minimum sample size of 165 observations is required. However, to ensure higher reliability and representativeness, the author surveyed 340 students currently studying at the university. The results collected 339 valid survey forms.

IV. Results and Discussion

4.1. Reliability and Convergent Validity Testing of Observed Variables

Table 2. Reliability and Convergent Validity Testing

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
CLDS	0.941	0.942	0.955	0.809
CT	0.876	0.891	0.916	0.734
EB	0.900	0.903	0.926	0.714
ITP	0.909	0.910	0.943	0.846
LE	0.944	0.948	0.957	0.818
PIDS	0.893	0.896	0.921	0.701
SSF	0.929	0.930	0.946	0.779

Source: Data analysis results from a survey of 339 students, 2024.

The reliability test results using Cronbach's Alpha coefficient indicate that the factors CLDS, CT, EB, ITP, LE, PIDS, and SSF all have Cronbach's Alpha values greater than 0.7, suggesting high internal consistency among their observed variables. Additionally, the Composite Reliability (CR) values are also above 0.7, ensuring the reliability of these factors.

The Average Variance Extracted (AVE) values exceeding 0.5 demonstrate the convergent validity of the observed variables within each factor. This implies that the observed variables effectively represent the factor they belong to. Hence, all factors meet the requirements for reliability and convergent validity, indicating that the observed variables are measured reliably and have a strong relationship with their respective factors.

Furthermore, the discriminant validity is confirmed as the observed variables have high loadings on their respective factors, ensuring distinctiveness among the factors.

Additionally, the observed variables have Variance Inflation Factor (VIF) values below 5, indicating an acceptable level of multicollinearity within the model.

On the other hand, the overall fit of the model is presented in Table 3 below.

According to Henseler et al. (2014), an SRMR value of less than 0.08 indicates

a good model fit with the observed data, while an NFI value approaching 0.9 suggests that the overall fit of the model is acceptable. The results in Table 3 show that SRMR = 0.045 and NFI = 0.859, which are within acceptable levels. Therefore, the model demonstrates a good fit with the research data.

Table 3. Overall Model Fit Testing

	Saturated Model	Estimated Model
SRMR	0.045	0.045
d_ULS	1.065	1.065
d_G	0.784	0.784
Chi-Square	1552.949	1552.949
NFI	0.859	0.859

Source: Data analysis results from a survey of 339 students, 2024.

4.2. Analysis of Path Coefficients

This section examines the path coefficients between the independent factors (EB, SSF, CLDS, CT, LE, PIDS) and the dependent variable (ITP).

The results in Table 4 demonstrate the path coefficients of each independent factor on the dependent variable:

- Factor CLDS -> ITP: The path coefficient is 0.120, but the P-value is 0.088 (greater than 0.05), indicating no statistical significance. Therefore, the impact of *self-confidence in learning digital skills* on the intention to participate in training is negligible and statistically insignificant.

Table 4. Path Coefficients Between Independent and Dependent Factors

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
CLDS -> ITP	0.120	0.114	0.071	1.706	0.088
CT -> ITP	0.342	0.348	0.070	4.894	0.000
EB -> ITP	0.257	0.261	0.086	2.996	0.003
LE -> ITP	0.241	0.238	0.077	3.144	0.002
PIDS -> ITP	-0.030	-0.029	0.077	0.393	0.694
SSF -> ITP	-0.055	-0.056	0.086	0.644	0.520
ITP			R Square		R Square Adjusted
	0.591		0.584		

Source: Data analysis results from a survey of 339 students, 2024.

- Factor CT -> ITP: The path coefficient is 0.342 (strong positive effect) with a P-value of 0.000 (less than 0.05), indicating strong statistical significance. Thus, *cost and time* have a significant positive impact on the intention to participate. This suggests that cost and time are critical factors in determining students' participation intentions.

- Factor EB -> ITP: The path coefficient is 0.257 (positive impact) with a P-value of 0.003 (less than 0.05), indicating statistical significance. Therefore, *expected benefits* have a positive and significant impact on the intention to participate, making it a key factor influencing students' decisions.

-Factor LE ->ITP:The pathcoefficient is 0.241 (positive impact) with a P-value of 0.02 (less than 0.05), indicating statistical significance. Thus, *learning environment* also has a positive and significant impact on participation intention, highlighting the role of the learning environment in students' decisions.

- Factor PIDS -> ITP: The path coefficient is -0.030 (negative impact), but the P-value is 0.694 (greater than 0.05), indicating no statistical significance. Therefore, the impact of *perceived importance of digital skills* on the intention to participate is negligible and statistically insignificant.

- Factor SSF -> ITP: The path coefficient is -0.055 (very small negative

impact), but the P-value is 0.520 (greater than 0.05), indicating no statistical significance. Thus, *support from the university and family* has an insignificant and negligible impact on students' intention to participate in training programs.

Additionally, the f^2 values for the factors Cost and Time, Expected Benefits, and Learning Environment range from 0.039 to 0.111, indicating that these factors play a significant role in students' intention to participate in training programs.

Moreover, the R^2 value is 0.591, meaning that 59.1% of the variation in the intention to participate in training is explained by the factors in the model.

V. Conclusion

Currently, participation in digital and technological skills training aligns with the national trend to adapt to the demands of learning and work in the era of digital transformation. This topic is gaining significant attention from experts, authorities, businesses, and the broader society. In Vietnam, the relationship between universities and businesses remains closely linked, from generating ideas and inventions to applications and product development. Among these, the human factor is prioritized as the most critical output of university training programs.

As a result, students must not only possess specialized knowledge but also enhance their soft skills. While

still in school, students should focus on developing digital and technological skills to meet academic and job market requirements after graduation.

The analysis of the intention to participate in digital and technological skills training among students at Can Tho University of Technology highlights that Cost and Time, Expected Benefits, and Learning Environment are key factors influencing students' decisions. Therefore, the university should prioritize optimizing costs and time and improving the learning environment to encourage students to engage in digital and technological skills training programs.

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CÁC NHÂN TỐ ẢNH HƯỞNG ĐẾN Ý ĐỊNH THAM GIA ĐÀO TẠO, BỒI DƯỠNG VỀ KỸ NĂNG SỐ VÀ CÔNG NGHỆ CỦA SINH VIÊN TRƯỜNG ĐẠI HỌC KỸ THUẬT - CÔNG NGHỆ CẦN THƠ

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Tóm tắt: Nghiên cứu này tìm hiểu các yếu tố ảnh hưởng đến ý định tham gia các chương trình đào tạo và phát triển kỹ năng số và công nghệ của sinh viên tại Trường Đại học Kỹ thuật - Công nghệ Cần Thơ. Thông qua khảo sát 339 sinh viên, nghiên cứu sử dụng phương pháp kiểm định độ tin cậy, phân tích nhân tố khám phá (EFA) và phân tích mô hình cấu trúc tuyến tính bình phương nhỏ nhất (PLS-SEM) để phân tích dữ liệu. Kết quả cho thấy các yếu tố Chi phí và Thời gian, Lợi ích mong đợi và Môi trường học tập có tác động tích cực và đáng kể đến ý định tham gia của sinh viên, trong khi các yếu tố Nhận thức về tầm quan trọng của kỹ năng Số, Tự tin trong việc học các kỹ năng Số và Sự hỗ trợ từ Nhà trường và gia đình không có ý nghĩa thống kê. Mô hình giải thích được 59,1% sự biến thiên trong ý định tham gia của sinh viên, thể hiện khả năng giải thích mạnh mẽ. Nghiên cứu này đóng góp vào việc hiểu rõ các yếu tố ảnh hưởng đến ý định tham gia đào tạo và cung cấp các gợi ý thực tiễn cho các cơ sở giáo dục trong thời đại số.

Từ khóa: Đại học Kỹ thuật - Công nghệ Cần Thơ, đào tạo, kỹ năng số, kỹ năng công nghệ, ý định tham gia.

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