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Assessing the impact of Determinants on Digital Competence of Accounting and Auditing Students in Hanoi, Vietnam

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Abstract

Vietnam's economy is undergoing an intensive digital transformation, in which the development of digital technology and artificial intelligence has created profound changes in all socio-economic sectors. In the field of accounting - auditing, the digitization and automation of professional operations have changed the quality requirements of human resources. In that context, digital competence becomes a key factor to improve learning efficiency and meet professional requirements. Therefore, researching the digital competence of accounting - auditing students is necessary, contributing to establishing a foundation for building university education programs and applying them to recruitment practices. The research employed a quantitative research method, using data collected from a survey of 286 students. The purpose of the research is to evaluate the factors that affect the digital competence of accounting - auditing students at universities in Hanoi. The analysis results indicate that external environmental factors have the strongest impact on digital competence, followed by attitudes, cognition and skills, universities, lecturers and students' technological conditions. These findings provide an experimental basis for building a digital competence framework for learners and propose practical implications to improve students' digital competence, supporting students in learning and better preparing for their future careers.

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1. Introduction

In the current context of digital transformation, owning digital competence is extremely important and beneficial for students in both their academic pursuits and future professional careers. Shaimaa *et al*. (2025) [42] argue that digital competence is not only a useful tool in learning, but also contributes to promoting motivation and interaction in a digitized environment. In contemporary labor markets, digital competence is no longer considered a supplementary skill; rather, it has become a core requirement expected by employers from the recruitment stage onward. However, a large proportion of university students today still maintain a passive learning method, along with training programs at universities that are still heavy on theory, lacking modules related to digital technology and data analysis, and insufficient alignment with emerging technologies currently applied in business practices, causing students to lack opportunities to practice digital skills. Furthermore, according to the Accounting - Auditing Strategy to 2030 approved by the Prime Minister under Decision No. 633/QD-TTg dated May 23, 2022, digital transformation in the field of accounting is one of the important goals, creating a more urgent requirement for improving digital competence for students. Nevertheless, many students majoring in accounting and auditing at universities are not adequately equipped with the knowledge and skills to meet this requirement. These issues raise critical questions regarding the effectiveness of current training programs and the need to adjust the training content in the direction of improving digital competence for students in order to

better meet the requirements of the learning environment and the labor market.

Many previous studies have pointed out the factors that affect each individual's digital competence. Hye Jeong Kim *et al.* (2018) [25] (Kim *et al*., 2018) [25] argue that students who have a positive attitude, actively learn about digital technology as well as are encouraged by their families to use technology will become more flexible and confident when applying them in learning. Research by Hippe *et al*. (2022) [36] shows that students' digital competence is improved when students have an interested attitude and actively use digital technology every day, in addition, modern pedagogical methods and digital skills assessment at school are also important factors in promoting students' digital competence. The factors of gender, academic year, living area and experience in digital skills were found to have a significant impact on students' perception of their digital competence (Yu Zhao *et al*., 2021) [41]. However, previous studies were conducted on student samples from many different majors, with limited research specifically focusing on students majoring in accounting and auditing. Therefore, a more comprehensive examination of the factors influencing the digital competence of accounting - auditing students is warranted.

2. Literature review

2.1. Research on the Components of Digital Competence

Digital competence is increasingly regarded as one of the core competencies essential for learners in the context of digital transformation in education and society. Identifying the components of digital competence plays a crucial role in guiding teaching and learning practices, as well as in developing human resources that meet the demands of the contemporary era. Consequently, numerous studies at both national and international levels have focused on clarifying the concept, structure, and influencing factors of learners' digital competence across different educational levels and contexts.

Hatlevik *et al*. (2015) [1] argue that digital competence is not only about the ability to use technology but also includes the ability to exploit, process information, and reflect responsibly. Based on the analysis of data from high school students in Norway, the authors identify digital competence as comprising several components such as technical skills, information skills, communication - collaboration, content creation, and digital safety - responsibility, while also pointing out the significant influence of academic achievement, personal orientation, and family background. In Vietnam, Nguyen Tan Đai *et al*. (2019) [7] surveyed the digital technology competence of university students and showed that the measurement model of digital competence is compatible with international standards, although there are still limitations regarding sample size and the scope of the components. From the perspective of the working environment, Oberlander *et al*. (2020) [18] developed a digital competence framework encompassing multiple dimensions, emphasizing the multidimensional nature and practical applicability of digital competence in the context of the modern labor. In the field of higher education, Do Van Hung *et al*. (2022) [12] proposed a digital competence framework tailored to Vietnamese students in online learning environments, encompassing components ranging from technological knowledge and digital tool usage skills to self-directed learning, creativity, and digital responsibility. Additionally, Nguyen Thi Xiem *et al*. (2023) [6], in their study of Vietnamese upper secondary school students, indicated that digital competence comprises multiple components related to learning, career, and digital ethics, while emphasizing the necessity of integrating digital competence development throughout the entire educational process. From there, the authors propose the need to further refine a digital competence framework that is aligned with the domestic educational context, expand the scope of research, and strengthen solutions for developing learners' digital competence in modern learning environments.

2.2. Research on Factors Influencing Digital Competence

Research both domestically and internationally consistently affirm that digital competence does not develop naturally but is influenced by a combination of individual, academic, technological, and social contextual factors.

Hatlevik *et al*. (2015) [1] surveyed 852 Norwegian students using the SEM model, indicating that digital competence is significantly influenced by family background, motivation, proficiency orientation, and academic achievement. The study emphasizes the existence of digital inequality due to social differences, while also showing that students with high academic achievement tend to use technology more effectively. Mai Anh Tho (2021) [5], based on a survey of 312 Vietnamese students, demonstrated that infrastructure, resources, individual awareness, and school policies are key factors driving digital competence, whereas academic management and the external environment play a supporting role. The results show that digital competence depends not only on individual skills but also on learning conditions and institutional support. Noorrizki *et al*. (2022) [8] found that smartphone use exerts a strong influence on young people's digital competence, whereas Internet use shows a significant effect only when combined with smart devices. Gender also makes a difference, with females having higher digital competence than males. Nguyen Ngoc Nam *et al*. (2023) [37], drawing on the DigComp 2.1 framework, identified four groups of influencing factors: (1) Awareness and attitudes; (2) Experience and frequency of technology use; (3) Support from lecturers and schools; (4) Digital learning environment. Among these, awareness and experience are the two most influential factors. According to the systematic review by Litiņa *et al*. (2023) [2], the factors influencing DC are classified into four groups: individual, academic, socio-economic, and digital citizenship, indicating that digital competence is a composite competence formed through the interaction between attitudes, skills, and context. In the field of accounting and auditing, Pham Tra Lam *et al*. (2024) [11] indicated that gender and the number of short courses significantly influence digital competence, whereas Weli *et al*. (2024) [13] identified age, family conditions, personal devices, and lecturers' level of ICT integration as important determinants. Pham Thi Chiem *et al*. (2025) [10] identified four groups of factors: awareness, access to technology, usage experience, and support from the school, while emphasizing the role of personalization in digital education. Pham Tra Lam *et al*. (2025) [4] showed that among accounting and auditing students, ICT knowledge and personal characteristics are the two internal factors exerting the most pronounced influence on DC, whereas attitudes and confidence do not have a direct impact. From a faculty perspective, Ozan & Özarslan (2025) [9] indicated that self-efficacy, access to technology, perceptions of digital education, and managerial culture are closely associated with

digital competence. A synthesis of studies shows that digital competence is simultaneously influenced by awareness, attitudes, technological experience, infrastructural conditions, learning environments, institutional support, and social factors.

This confirms that the development of digital competence for students, particularly accounting - auditing students, should be approached in a systematic and multidimensional manner, integrating individual efforts with educational policies.

3. Research hypothesises and proposed model

3.1. Theoretical Foundations

Technology Acceptance Model - TAM

The Technology Acceptance Model - TAM was developed by Fred Davis (Texas Industrial University) in the 1980s, providing a theoretical framework to predict technology usage intention and explain the psychological factors that govern actual usage behavior. TAM focuses on two key constructs:

- **Perceived Usefulness - PU:** reflects the extent to which users believe that using a technology enhances their job performance and work efficiency, thereby directly influencing technology acceptance.
- **Perceived Ease of Use - PEOU:** refers to the degree to which a technology is perceived as easy to operate and does not require complex skills; consequently, the technology is considered more useful and indirectly increases PU.

Abdul Khafit *et al*. (2021) [17] applied TAM to measure e-learning usage among accounting students at Universitas Negeri Malang (Indonesia), concluding that perceived usefulness (PU), perceived ease of use (PEOU), along with self-confidence and subjective norms, have a significant impact on e-learning adoption. In a different direction, Abdo-Salloum *et al*. (2025) [15] integrated TAM with the concept of self-efficacy to assess accounting students' technological readiness. The results indicated that the combination of PU and PEOU serves as a key driver in AI adoption, contributing to narrowing the gap between industry practical requirements and academic knowledge, thereby ensuring that accounting graduates possess the necessary competencies in the AI era.

Unified Theory of Acceptance and Use of Technology – UTAUT

The Unified Theory of Acceptance and Use of Technology (UTAUT) was developed by Venkatesh *et al*. (2003) with the aim of examining technology acceptance using a more unified approach. This model integrates eight prior models based on the common perspective of investigating user acceptance of new information systems.

The model comprises the following core components: Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI), and Facilitating Conditions (FC).

Fachrurrozie *et al*. (2025) [43] employed the UTAUT model to investigate students' behavior in using AI in accounting classrooms. The findings revealed that PE and EE are two critical factors contributing to behavioral intention; ICT experience and ICT competence also influence AI usage behavior. Similarly, the study by Han (2025) [16], which surveyed undergraduate accounting students in China, utilized the UTAUT model to predict AI usage intention. The results showed that SI has both direct and indirect effects through behavioral intention on AI usage.

Theory of Planned Behavior – TPB

The Theory of Planned Behavior (TPB) was developed by Ajzen in 1991 as an extension of the Theory of Reasoned Action (TRA) proposed by Fishbein and Ajzen (1975). This theory posits that an individual's behavior is not random but is influenced by intention, and the stronger the intention, the higher the likelihood of performing the behavior. Intention is determined by three main factors:

- **Attitudes:** refer to an individual's positive or negative evaluation of a specific behavior prior to performing it.
- **Subjective Norms:** represent perceived social pressure to perform or not perform a behavior.
- **Perceived Behavioral Control:** reflects an individual's perception of the ease or difficulty of performing a behavior and whether the behavior is subject to control or obstacles.

Weli *et al*. (2024) [13] applied the Theory of Planned Behavior in their study to elucidate the influence of social factors (personal characteristics, family, and campus environment) on the digital competence of accounting–auditing students. Specifically, personal attitudes toward ICT application often vary by gender and age group (Torres-Díaz *et al*., 2016; Vassilakopoulou *et al*., 2021) [44, 45], thereby affecting readiness for digital competence development. Subjective norms reflect social pressure influencing individual behavior (Ajzen, 2020; Sussman *et al*., 2019) [46], which often originates from the family as the closest environment to students.

3.2. Research Hypothesizes

Drawing on the literature review, the research team formulates the following research hypotheses:

***Cognition and Skills positively influence the digital competence of Accounting–Auditing students.**

Understanding and the ability to master technology, information, and data are regarded as important foundations for the formation and development of students' digital competence. Numerous domestic and international studies indicate that technological skills and cognition exert a significant influence on students' learning capacity and adaptability within digital educational environments. Hatlevik (2015) [1] emphasizes that technological knowledge and thinking enable students to enhance their ability to analyze and evaluate information and data, thereby effectively supporting the learning process in digital environments. In addition, studies by Ningxin Ma & Prasert Ruannakarn (2024) [14] and Anne Marie Eloff (2016) [22] indicate that students with higher levels of ICT knowledge and usage tend to access digital learning resources and learning support tools more effectively, thereby improving their academic outcomes. For Accounting - Auditing students, studies by Nasu *et al*. (2019) [35] and Verni Juita (2022) [24] show that proficiency in technology and data processing skills enhances the ability to analyze, evaluate, and manipulate information - core skills of the profession.

Accordingly, the research team proposes hypothesis H1: *Cognition and Skills have a positive impact on the digital competence of Accounting - Auditing students in Hanoi.*

***Students' attitude positively influences the digital competence of Accounting–Auditing students.**

A positive attitude toward learning and the application of technology is regarded as a foundational factor in the development of students' digital competence. Hatlevik *et al*. (2015) [1] argue that students with a mastery-oriented attitude toward technology tend to engage more proactively in the use of digital tools, thereby enhancing their ability to process and analyze data as well as learning effectiveness. Similarly, studies by Pham Tra Lam & Dau Thi Kim Thoa (2024) [11] and Volkan Öngel *et al*. (2022) [33] confirm that attitudes, beliefs, and technology acceptance play a crucial role in promoting effective technology use and the development of digital competence. For Accounting - Auditing students, a favorable attitude toward technology contributes to the enhancement of information searching, processing, and analysis skills aligned with professional requirements. In addition, Tina Štemberger and Sonja Čotar Konrad (2021) [30] also indicate that students with a positive attitude toward technology tend to be more confident and proactive in digital learning, thereby showing that an open attitude toward technology is a critical condition for fostering sustainable digital competence in a digitized educational environment.

Accordingly, the research team proposes hypothesis H2: *Attitude has a positive impact on the digital competence of Accounting - Auditing students in Hanoi.*

***Students' technological conditions positively influence the digital competence of Accounting–Auditing students.**

Students' technological conditions are understood as the ability to access and use technological devices such as computers, smartphones, and Internet connectivity, as well as the frequency and purpose of using technology in learning. A study by Geogre Barboutidis *et al*. (2023) [20] indicated that device ownership and the level of information technology usage have a clear impact on components of digital competence such as information processing, communication – collaboration, and problem-solving. The study by Weli *et al*. (2024) [13] also pointed out the existence of a digital divide, showing that students who frequently use ICT (computers, the Internet, digital applications) have a higher level of digital competence development. Similarly, research by Pritika Reddy *et al*. (2023) [29] emphasized that regular access to and use of technology plays a crucial role in narrowing the digital competence gap and promoting the comprehensive development of learners.

Accordingly, the research team proposes hypothesis H3: *Students' technological conditions are a factor influencing the digital competence of accounting and auditing students in Hanoi.*

*** Lecturer support positively influences the digital competence of Accounting–Auditing students.**

In the context of the accelerating digital transformation in education, lecturers are not only knowledge transmitters but also mentors, supporters, and promoters of students to apply digital technology effectively and confidently. Studies by Litina *et al*. (2022), Weli *et al*. (2024), and Ozan *et al*. (2025) [2, 13, 9] consistently demonstrate that lecturers' digital competence contributes significantly to improving not only digital competence but also academic achievements of students. Lecturers with a high level of digital competence are better positioned to creatively integrate digital tools into teaching practices, thereby fostering more supportive learning environments that motivate students to actively explore and practice digital technologies. In addition, lecturers also help students cultivate the skills to exploit, evaluate, and systematize information in the digital environment, while guiding students to share, interact, and communicate in accordance with the rules of conduct and legal standards (Vuorikari *et al*, 2022) [38].

Accordingly, the research team proposes hypothesis *H4: Lecturer support positively influences the digital competence of Accounting–Auditing students*

***University policy positively influences the digital competence of Accounting–Auditing students.**

Numerous previous studies have shown that university policies exert a significant influence on digital competence within educational environments. Studies by Guzmán-Simón *et al*. (2017) [23] and Nguyen Thi Hong Lam *et al*. (2023) [6] demonstrate the impact of institutional curricula on students' digital competence, thereby underscoring the need to implement the systematic integration of digital competence across the entire undergraduate curriculum. In addition, the study by Diwen Dong (2025) [21] indicates that participation in digitally integrated extracurricular learning activities has a positive effect on learners' digital self-efficacy and motivation for online learning. The findings of Tokovska *et al*. (2022) [32] also demonstrate that students who participate in mandatory digital skills courses provided by the university demonstrate higher levels of digital competence. Accordingly, universities with clear digitalization strategies can significantly enhance students' digital competence. Furthermore, the creation of an educational environment that encourages the practical application and experimentation with digital technologies in teaching and learning enables students to better leverage available opportunities for digital competence development (Morgan *et al*., 2022; Pagaldai *et al*., 2025) [27, 34].

Accordingly, the research team proposes hypothesis H5: *University policy positively influences the digital competence of Accounting–Auditing students in Hanoi.*

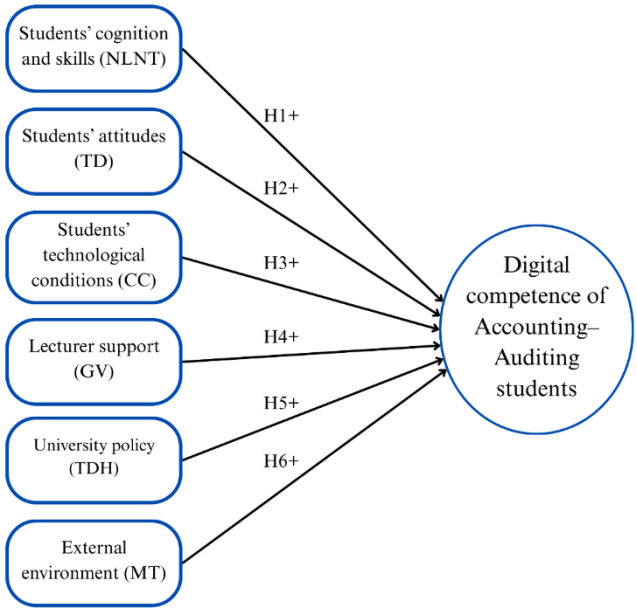
***The external environment positively influences the digital competence of Accounting–Auditing students.**

The external environment includes factors outside the individual student, such as family, peers and society, educational institutions, and the labor market, which directly and indirectly influence the formation and development of digital competence. Studies by Kim (2018) [25] and Li (2022) [26], among others, show that family and parental support positively affect students' attitudes, readiness, and ability to use technology. In addition, socio-economic factors such as parents' educational level, occupation, and income create significant differences in digital competence (Weli *et al*., 2024) [13]. Beyond the family, the academic and social environment plays an important role in either promoting or constraining digital competence. School policies, curricula, opportunities for hands-on practice with technology, and classroom culture are closely associated with the development of students' digital skills (Sanita Litiņa *et al*., 2023) [2]. Access to courses, digital resources, online workshops, and social networks helps expand learning spaces, enhance self-directed learning, and facilitate the updating of new knowledge (Poh Kiong Tee *et al*., 2024; Nguyen Van Thuy *et al*., 2023) [19, 39]. At the same time, group learning activities, extracurricular activities, and part-time

employment enable students to transform theoretical knowledge into practical skills, thereby improving their confidence and ability to use technology (Evangelinos *et al*., 2015) [31]. Employers regard digital skills as a core criterion for the future workforce (Periáñez-Cañadillas *et al*., 2019) [28]. For accounting and auditing students, pressure from the professional environment requires them to master digital tools and specialized software in order to adapt and compete in the digital economy (Nguyen Van Thuy *et al*., 2023) [39]. Accordingly, the research team proposes hypothesis H6: *The external environment is a factor influencing the digital competence of accounting and auditing students in Hanoi.*

Proposed Research Model

Basing on those hypothesises above, we proposed a research model as follows:



Source: The authors' proposal

Fig 1: The Proposed Research Model

4. Research methodology

4.1.1. Data collection methodology

The data collection methods used in this study include literature review, interviews, and surveys. The two primary research methods employed in combination are qualitative and quantitative research methods.

- The qualitative research method is conducted through the analysis and synthesis of previous studies, along with structured in-depth interviews.
- The quantitative research method is executed via survey questionnaires examining the factors influencing the digital competence of accounting and auditing students in Hanoi, consisting of 6 main factors with 35 observed variables measured on a 5-point Likert scale. Over the data collection period, from September 29, 2025 to October 25, 2025, a total of 286 valid responses were collected through the survey link: https://forms.gle/Mepir9Tzg8GibA5VA. According to Tabachnick and Fidell's (1996) sample size formula, the minimum required sample size is 50 + 8 times the number of independent variables, giving this study a minimum threshold of 98. Therefore, with a sample of 286 valid responses, it can be concluded that the sample size is sufficient for the research analysis.

4.2. Data processing methodology

To ensure data accuracy, avoiding any errors, excess, or omissions during entry into the software, the authors employed several processing methods, including descriptive statistics, scale reliability testing (Cronbach's Alpha), exploratory factor analysis (EFA), correlation analysis, and regression analysis for hypothesis testing. The data collected from survey responses were processed using two software programs:

- **Microsoft Excel:** Used for aggregating and descriptively analyzing survey demographics and content.
- **SPSS 20.0:** Employed for reliability testing of scales and research hypotheses testing. Following these analyses, descriptive methods were used to interpret the statistical results obtained.

5. Results and Discussion

5.1. Results

5.1.1. Reliability Analysis (Cronbach's Alpha)

The reliability of the measurement scales was assessed using Cronbach's Alpha coefficients and corrected item–total correlations. A scale was considered reliable if its corrected item–total correlation exceeded 0.3 and its Cronbach's Alpha coefficient ranged from 0.6 to 1.0. Scales that met the reliability criteria were accepted and included in subsequent analyses. According to the results of the Cronbach's alpha reliability analysis, the independent variables Cognition and Skills, Attitude, Technological Conditions, Lecturer Support, University Policy, and External Environment, as well as the dependent variable Digital Competence, had Cronbach's Alpha values of 0.796, 0.823, 0.798, 0.863, 0.850, 0.828, and 0.765, respectively. All values were greater than 0.6, indicating that the scales were reliable.

Most observed variables exhibited corrected item–total correlations of greater than 0.3. However, one observed variable (CC2) had a corrected item–total correlation of 0.25, which did not meet the required criterion. Therefore, variable CC2 was removed from the model, and the reliability of the Technological Conditions scale was analyzed again. After removing this variable, the Cronbach's Alpha coefficient of the scale increased to 0.852, and all remaining observed variables had item–total correlation coefficients greater than 0.3, demonstrating the reliability requirements. Based on the results, this independent variable was retained for subsequent analysis.

5.1.2. Exploratory Factor Analysis

5.1.2.1. Exploratory Factor Analysis (EFA) for the independent variable

After conducting the reliability analysis using Cronbach's Alpha and removing the unsuitable items from the measurement scales, the study proceeded with Exploratory Factor Analysis (EFA). Table 5.1 presents the rotated component matrix.

Table 5.1: Rotated Component Matrix

Scale Items	Component					
	1	2	3	4	5	6
GV6	.743					
GV5	.733					
GV2	.712					
GV4	.678					
GV3	.668					
GV1	.571					
TDH2		.801				
TDH5		.714				
TDH4		.705				
TDH1		.703				
TDH3		.665				
TD1			.751			
TD2			.725			
TD4			.704			
TD3			.660			
TD5			.657			
MT3				.736		
MT5				.693		
MT1				.665		
MT4				.659		
MT2				.647		
CC1					.789	
CC3					.730	
CC5					.687	
CC4					.672	
NLNT5						.724
NLNT4						.697
NLNT2						.677
NLNT3						.658
NLNT1						
Eigenvalues	10.639	2.491	1.569	1.470	1.320	1.219
Variance Explained (%)	35.462	8.302	5.229	4.900	4.399	4.062
Total Variance Explained (%)	62.354					
Kaiser-Meyer-Olkin (KMO)	.933					
Bartlett's Test of Sphericity	Approx. Chi-Square				4143.476	
	Df				435	
	Sig.				.000	

Source: SPSS's analysis

Exploratory Factor Analysis (EFA) was conducted using the Principal Component Analysis (PCA) extraction method with Varimax rotation on 30 observed variables. The initial results indicated that one item (NTNL1) had a factor loading below the recommended threshold of 0.5. Therefore, this item was removed, and EFA was re-conducted on the remaining 29 observed independent variables.

The results of the Kaiser–Meyer–Olkin (KMO) measure and Bartlett's Test of Sphericity demonstrated the adequacy of the data for factor analysis. The KMO value was 0.933, indicating excellent sampling adequacy. The Bartlett's Test of Sphericity was statistically significant ($p < 0.001$), suggesting sufficient correlations among the variables for factor analysis.

According to the EFA results, six factors were retained, consistent with the proposed research model. All extracted factors had eigenvalues greater than 1, and the total variance explained by these six factors was 62.354%. This result indicates that the extracted factors collectively accounted for 62.354% of the total variance, suggesting a satisfactory level of explanatory power.

5.1.2.2. Exploratory Factor Analysis (EFA) for the Dependent Variable

After completing the EFA for the independent variables, an additional EFA was conducted for the dependent variable, which included four observed variables. The results of this analysis are presented in Table 5.2.

Table 5.2: Rotated Component Matrix

Scale Items	Component	
NLS1	.782	
NLS2	.768	
NLS3	.757	
NLS4	.757	
Eigenvalues	2.350	
Total Variance Explained (%)	58.746	
Kaiser-Meyer-Olkin (KMO)	.768	
Bartlett's Test of Sphericity	Approx. Chi-Square	271.808
	df	6
	Sig.	.000

Source: SPSS's analysis

The results presented in Table 5.2 indicate that the KMO value was 0.768, and Bartlett's Test of Sphericity was statistically significant ($p < 0.001$). These results confirm that the data were suitable for exploratory factor analysis.

The EFA results revealed that a single factor was extracted, with an eigenvalue of 2.350, which exceeds the recommended threshold of 1. This factor accounted for 58.746% of the total variance, exceeding the minimum acceptable level of 50%. These findings indicate that the extracted factor explained 58.746% of the variance among the four observed items included in the analysis.

In addition, all factor loadings were greater than 0.5, indicating satisfactory factor loadings. Consequently, all measurement items of digital competence were retained for subsequent analyses.

5.1.3. Pearson Correlation Analysis

Once the measurement scales met the reliability and validity criteria, they were included in the Pearson correlation analysis. The purpose of this analysis was to investigate potential multicollinearity by examining strong intercorrelations among independent variables, as well as to identify any independent variables that did not exhibit a significant correlation with the dependent variable and were therefore excluded from the research model. Mean values were calculated for the observed items and used in the Pearson correlation analysis. The results are presented in the correlation matrix shown in Table 5.3.

Table 5.3: Correlations

		NLS	NLNT	TD	CC	GV	TDH	MT
NLS	Pearson Correlation	1	.606**	.641**	.647**	.641**	.585**	.715**
	Sig. (2-tailed)		.000	.000	.000	.000	.000	.000
	N	286	286	286	286	286	286	286
NLNT	Pearson Correlation	.606**	1	.503**	.506**	.454**	.404**	.441**
	Sig. (2-tailed)	.000		.000	.000	.000	.000	.000
	N	286	286	286	286	286	286	286
TD	Pearson Correlation	.641**	.503**	1	.538**	.415**	.299**	.499**
	Sig. (2-tailed)	.000	.000		.000	.000	.000	.000
	N	286	286	286	286	286	286	286
CC	Pearson Correlation	.647**	.506**	.538**	1	.512**	.487**	.511**
	Sig. (2-tailed)	.000	.000	.000		.000	.000	.000
	N	286	286	286	286	286	286	286
GV	Pearson Correlation	.641**	.454**	.415**	.512**	1	.573**	.553**
	Sig. (2-tailed)	.000	.000	.000	.000		.000	.000
	N	286	286	286	286	286	286	286
TDH	Pearson Correlation	.585**	.404**	.299**	.487**	.573**	1	.488**
	Sig. (2-tailed)	.000	.000	.000	.000	.000		.000
	N	286	286	286	286	286	286	286
MT	Pearson Correlation	.715**	.441**	.499**	.511**	.553**	.488**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	
	N	286	286	286	286	286	286	286

Source: SPSS's analysis

The results in table 5.3 show that the significance values of the Pearson correlation coefficients fall below the 0.05 threshold ($p < 0.001$), indicating that all independent variables have statistically significant linear relationships with the dependent variable. Specifically, "University Policy" demonstrates the lowest level of correlation ($r = 0.585$), whereas "External environment" exhibits the highest correlation ($r = 0.715$).

5.1.4. Multiple Linear Regression Analysis

5.1.4.1. Model Fit Assessment

A multiple linear regression analysis was conducted with six independent variables, including NLNT, TD, CC, GV, TDH, and MT, to examine the overall adequacy of the proposed research model. The results of the model fit assessment are presented in Table 5.4.

Table 5.4: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.856[a]	.733	.728	.31314	2.000
a. Predictors: (Constant), MT, KN, TDH, TD, CC, GV					
b. Dependent Variable: NLS					

Source: SPSS's analysis

The results of the multiple linear regression analysis indicate that the model has an R^2 of 0.733 and an adjusted R^2 of 0.728. Since the adjusted R^2 is lower than R^2, the adjusted R^2 value is used to evaluate the model fit in order to avoid overestimating the explanatory power of the model (Hoang and Chu, 2005).The adjusted R^2 value of 0.728, meaning that the six independent variables included in the regression affects 72.8% of the change in the dependent variable, the remaining 27.2% is due to factors outside the model and random error.

Furthermore, the Durbin–Watson coefficient = 2.000, which falls within the acceptable range of 1.5 to 2.5, indicating that the model does not violate the assumption of first-order autocorrelation (Yuhua Qiao, 1999) [40].

Table 5.5: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	75.214	6	12.536	127.843	.000[b]
	Residual	27.357	279	.098		
	Total	102.572	285			
a. Dependent Variable: NLS						
b. Predictors: (Constant), MT, NLNT, TDH, TD, CC, GV						

Source: SPSS's analysis

The ANOVA results indicate that the regression model is statistically significant *($F = 127.843$, $p < 0.001$)*, suggesting that the independent variables jointly have a significant effect on the dependent variable and that the regression model is fit.

5.1.4.2. Hypothesis Testing

The regression results are summarized in Table 5.6 below:

Table 5.6: Correlation coefficient

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.119	.144		.831	.407		
	NLNT	.144	.036	.158	4.046	.000	.624	1.603
	TD	.207	.036	.229	5.689	.000	.591	1.693
	CC	.112	.034	.138	3.270	.001	.536	1.866
	GV	.131	.038	.148	3.485	.001	.531	1.882
	TDH	.128	.034	.152	3.765	.000	.589	1.698
	MT	.283	.039	.304	7.347	.000	.557	1.796
a. Dependent Variable: NLS								

Source: SPSS's analysis

The regression results indicate that all independent variables have significance levels (Sig.) below 0.05, suggesting that these variables are statistically significant at the 5% level, corresponding to a confidence level of 95%. In addition, the variance inflation factor (VIF) values for all independent variables are below 2, indicating that the regression model does not experience multicollinearity. All regression coefficients are positive, implying that the independent variables exert a positive effect on the dependent variable. From table 5.6, we obtain the standardized multiple linear regression equation:

$$NLS = 0.304*MT + 0.229*TD + 0.158*NLNT + 0.152*TDH + 0.148*GV + 0.138*CC$$

Hypothesis H1 proposes that students' cognition and skills influence the digital competence of Accounting–Auditing students in Hanoi. The regression results show a positive and statistically significant standardized coefficient ($\beta = 0.158$, $p < 0.001$). Holding other factors constant, a one-unit increase in students' cognition and skills is associated with a 0.158-unit increase in digital competence. Therefore, hypothesis H1 is accepted.

Hypothesis H2 proposes that students' attitude positively influences the digital competence of Accounting–Auditing students in Hanoi. The regression results show a positive and statistically significant standardized coefficient ($\beta = 0.229$, $p < 0.001$). Holding other factors constant, a one-unit increase in students' cognition and skills is associated with a 0.229-unit increase in digital competence. Therefore, hypothesis H2 is accepted.

Hypothesis H3 proposes that students' technological conditions positively influence the digital competence of Accounting–Auditing students in Hanoi. The regression results show a positive and statistically significant standardized coefficient ($\beta = 0.138$, $p = 0.001 < 0.05$). Holding other factors constant, a one-unit increase in students' cognition and skills is associated with a 0.138-unit increase in digital competence. Therefore, hypothesis H3 is accepted.

Hypothesis H4 proposes that lecturer support positively influences the digital competence of Accounting–Auditing students in Hanoi. The regression results show a positive and statistically significant standardized coefficient ($\beta = 0.148$, $p = 0.001 < 0.05$). Holding other factors constant, a one-unit increase in students' cognition and skills is associated with a 0.148-unit increase in digital competence. Therefore, hypothesis H4 is accepted.

Hypothesis H5 proposes that university policy positively influences the digital competence of Accounting–Auditing students in Hanoi. The regression results show a positive and statistically significant standardized coefficient ($\beta = 0.152$, $p < 0.001$). Holding other factors constant, a one-unit increase in students' cognition and skills is associated with a 0.152-unit increase in digital competence. Therefore, hypothesis H5 is accepted.

Hypothesis H6 proposes that the external environment positively influences the digital competence of Accounting–Auditing students in Hanoi. The regression results show a positive and statistically significant standardized coefficient ($\beta = 0.304$, $p < 0.001$). Holding other factors constant, a one-

unit increase in students' cognition and skills is associated with a 0.304-unit increase in digital competence. Therefore, hypothesis H5 is accepted.

5.2. Discussion

The quantitative results show that the external environment is the most influential factor affecting the digital competence of Accounting–Auditing students, followed by students' attitudes, cognition and digital skills, university policy, lecturer support, and personal technological conditions. These findings indicate that the formation and development of digital competence among Accounting–Auditing students is a continuous and cumulative process, originating from personal factors, cultivated and improved within the educational environment, and subsequently consolidated through practical application and real-world experience. Personal factors such as students' cognition and attitudes, play a foundational role in the formation and development of digital competence, motivating students to proactively seek learning opportunities and to invest time and financial resources to enhance their digital skills. Student possess and access to adequate software, digital devices and tools for learning, research and digital content creation facilitate time efficiency, improve work performance, and contribute positively to the development of students' digital competence. The education environment and lecturer support facilitate students' effective access to technological infrastructure and digital learning resources. In addition, support from family and friends, combined with self-directed learning and practical experience through group work and part-time employment, further strengthens students' digital competence. Furthermore, the digitalization of the labor market and increasingly stringent recruitment requirements in the Accounting–Auditing profession motivates Accounting–Auditing students to enhance their digital competence to remain competitive in future employment.

6. Conclusion

The findings of this study enhance students' awareness and provide guidance for shaping positive attitudes toward the development of digital competence. Moreover, the results help students gain a clearer understanding of the relationships between internal factors and external contextual factors, including cognition and skills, attitudes, access to technological devices, the educational environment, and the external environment, in the process of forming and developing digital competence. Among these factors, attitude represents an initial determinant that facilitates students' adaptation to technological advancements and artificial intelligence, thereby promoting an open learning mindset and sustained efforts toward digital competence development. A clear and accurate awareness of personal competence allows students to effectively self-evaluate, recognize their strengths and weaknesses, and select suitable learning approaches. As a result, students' learning capacity is enhanced, contributing to the sustainable development of digital competence. These findings are consistent with previous studies conducted by Mai *et al.* (2021), Sanita Litina *et al.* (2023), Nguyen *et al.* (2023), and Ozan *et al.* (2025) [5, 2, 37, 9].

The study also provides valuable insights for educational institutions, universities, and lecturers into students' digital competence. Based on these findings, an important practical implication is that educational environments should place stronger emphasis on the integration of theory and practice, particularly by incorporating learning activities that allow students to actively and effectively apply the digital skills they have acquired. Strengthening practical exercises, incorporating digitally integrated courses into the formal curriculum, and promoting extracurricular activities will enable students not only to consolidate their knowledge but also to enhance their ability to apply digital technologies in both academic learning and professional practice. In addition, when instructors have a clear understanding of the difficulties, constraints, and limitations that students commonly encounter in accessing and using digital tools, the support they provide can be more timely and effective. Consistent with the study by Weli Imbiri *et al.* (2024) [13], the results indicate that integrating digital competence into teaching practices and fostering a positive and equitable learning environment contribute to guiding and promoting the comprehensive development of students' competencies in digitally transformed learning environments.

7. References

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