

# Factors Affecting Information Technology Skills of Students Specializing Accounting - Auditing

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## Abstracts

As we all know, the 4th industrial revolution (Industry 4.0) has brought many great applications to all areas of society. Therefore, it can be seen that mastering information technology (IT) skills will help improve work efficiency, reduce costs, increase global cooperation, thereby gaining competitive advantages (Mamahani, 2006). IT skills are not only important for worker, but also for students, this is one of the necessary skills. The objective of this study is to find out the current situation and evaluate the application of IT skills of students majoring in accounting and auditing at the university of economics in Hanoi in order to meet Industry 4.0, through a survey of 200 students and applying the method of calculating the mean value, the researchers has shown the influence of the factors. This is also the basis for the researchers to propose some recommendations to help students majoring in accounting - auditing improve and enhance their IT skills to create a convenient learning environment as well as open up job opportunities in the future.

**Keywords:** *IT (information technology), skills, accounting and auditing*

## 1. Introduction

As we all know, the 4th industrial revolution (Industry 4.0) has brought many great applications to all areas of society. Therefore, it can be seen that mastering information technology (IT) skills will help improve work efficiency, reduce costs, increase global cooperation, thereby gaining competitive advantages (Mamahani, 2006). IT skills are not only important for worker, but also for students, this is one of the necessary skills.

Today, to have a stable income and open job opportunities, students need to cultivate themselves not only intellectually but also in terms of skills, especially IT skills. That capacity needs to be trained and developed daily and hourly to improve and enhance each student's IT level.

Experiencing the complicated development of the covid epidemic, affecting the whole world in all aspects: life, economy, and society,... large enterprises and organizations have faced challenges and they cannot work directly, instead working online is a reasonable and effective choice. It can be said that the IT skills of workers are becoming more and more necessary. Training and educational institutions at that time also had to deploy online learning to maintain and disseminate knowledge. Piccoli et al., (2001) conclude that *"This further confirms that IT skills have had a significant influence on teaching and learning effectiveness"*.

Currently, the application of office computing and IT by students in general and students majoring in accounting - auditing in particular still faces many limitations. Specifically, employers also only rate the proficiency of accounting and auditing staff's computer literacy at an average of 5.35/7 (Binh et al., 2019). In addition, students majoring in accounting-auditing at economic universities in Hanoi city rated this skill proficiency as 3.78/5 (Binh, 2017). The reason may be due to students' lack of proper awareness and lack of proficient IT skills training, training programs, lack of support from the school or the constant change of the Industry 4.0 era. There are more and more appearances of modern technologies, equipment and machines, as well as software with practical applications in other professions in general and specialized in accounting - auditing in particular.

Therefore, in addition to proficiently using common office computer skills, it is also necessary to cultivate more skills in using software applications, ..v.v.. Especially for students majoring in accounting - auditing, IT skills mean that they must be proficient in using complex specialized software and application software. This study will focus on understanding the factors affecting the IT skills of students. The main object of the research is accounting - auditing students at the economic universities in Hanoi. The research results are the basis to

propose some recommendations to help students understand the impact of factors on their IT skills and improve their proficiency in this skill.

## 2. Literature review

Information technology (IT) is a branch of engineering that uses computers and computer software to convert, store, protect, process, transmit, and collect information, this is a great achievement of the current scientific and technological revolution (Nguyen Thi Yen, 2016). In Vietnam, according to the Government's Resolution 49/CP issued on August 4, 1993 on IT development, stating: "*IT is a collection of scientific methods, modern technical means and tools - mainly computer and telecommunications engineering - in order to organize, exploit and effectively use the rich and potential information resources in all fields of human and social activities*". IT is a technical discipline that includes modern scientific and technological methods established on computers and computer software to distribute and process data, simultaneously, it is also used to exchange and store that data in many different forms to meet the needs of people today and this is also the bridge between people and modern technology.

Information Technology Skills are the ability to use computers and computer software to convert, store, protect, process, transmit and collect information (Phan Ngoc, 2021). This skill can be described as follows: Proper use of ICT (Information & Communications Technologies) equipment to perform specific tasks; identifying the components of the basic ICT system; being able to use learning support software in different organizing and storing data in different storages, at the device and on the network. In general, IT skills are the skills to use or perform proficiently one or a series of office computer applications; learning tools; remote meeting software (zoom, google meet, trans,...); software for storing and processing data (cloud, debased on basis of knowledge (knowledge or experience). The use of professional IT skills, not only brings higher job opportunities but also can help people solve work quickly and efficiently.

Information technology skills have been studied for many years in both the world and Vietnam by such as Picoli et al., (2001); Medlin, Dave, & Vannoy (2001); Caruso and Salaway (2007); K. Lee and Mirchandani (2010); Salini Rosaline & J. Reeves Wesley (2017); Acemoglu and Restrepo (2017); Karacay 2018; Galanek et al. (2018); Acemoglu and Restrepo (2018); ACCA (2019); ILO (2019); Mahdi Moradi (2020); M Akhtar A.A (2021); MS c, NCS. Vu Thi Thanh Binh (2018); L.T.T.Thuy et al (2019); L.T. Han (2019); Vu Thi Thanh Binh (2019); Vu Thi Thanh Binh, Tran Thi Nga (2021);... These studies all refer to the factors affecting students' information technology skills with 5 main factors: Awareness, knowledge and practice, program training, and advancement in science and technology.

### \* *Awareness of IT skills:*

The ever-changing business and technology environment requires professional IT skills (Medlin, Dave, & Vannoy, 2001). Advances in science and technology are dramatically changing and shaping the world where university students are the subject of research (Caruso and Salaway, 2007). In addition, the development of Internet technology has a significant impact on student learning in IT skills training in universities (Picoli et al., 2001).

Regarding the importance of IT skills, K. Lee and Mirchandani (2010) used a questionnaire to survey 70 IS managers representing 21 companies in the Midwest United States. The study shows the growing importance of IT skills and aims to suggest essential IT skills preparation for current and future information systems professionals and educators. The results of this study will help students and educational institutions understand the IT needs in the current and future labor market.

### \* *Knowledge and practice:*

A study by Galanek et al. (2018) examined data on 64,536 students from 130 institutions in 9 countries and 36 US states. The research results show that all students have access to technology that promotes student success. The use of the e-learning system is popular in educational institutions and student satisfaction, most students express their love for the e-learning environment, and students spend 1- 4 hours of online learning per day.

From there, the study makes several recommendations such as providing students with basic technology, ending the ban on Internet use in the classroom, and improving the quality and coverage of wifi on campus. At the same time, it helps to increase students' interest in using IT, and continuing education enhance insight

into tools and improves IT problem-solving skills. It can be seen that learning and practicing the IT environment helps to improve students' IT skills and raise the level of satisfaction with the learning environment.

**\* Education programs:**

In the learning environment, Piccoli et al. (2001) Preliminary study and evaluation of the effectiveness of basic IT skills training in demonstrating the effectiveness of virtual learning environments (VLEs). Research results show that there is no significant difference in the learning outcomes of students in the traditional environment and the VLE. The results of these studies also have important contributions to the current implementation of IT in online learning.

Caruso and Salaway (2007) collected data online to improve academic performance and enhance students' IT skills; based on qualitative data analysis, in-depth interviews with 50 groups of students; Based on data collected through a survey of 4,752 students obtained from 65 organizations based on longitudinal analysis. Research by Caruso and Salaway (2007) shows the use of IT skills and experiences of university students when using IT in courses. At the same time, the study also pointed out the importance of teaching staff in IT education; awareness of the use of IT in courses; and the impact of IT on student learning outcomes in courses.

**\* Advances in science and technology:**

According to previous studies by ACCA (2019), Audit and Technology, it is highly estimated that globally there will be about 400 million jobs displaced (MGI, 2017). However, history should not ignore the lesson that the introduction of new technology will eventually create new jobs (Galanek, J. D. et al, 2018).

As technology is conceptualized as replacing human labor in tasks that used to do even jobs reserved for more educated people (Galanek, J. D. et al, 2018). Strong, proactive worker training and retraining efforts, and immediate action, are essential for problem-solving, as well as consideration of policy issues related to current work arrangements and non-standard future (ILO, 2019; Galanek, J. D. et al, 2018). The impact of technology on jobs and workers is varied and complex, requiring workers to be up-to-date with new IT skills or else they will gradually become obsolete and then automatically become obsolete. Technology was born to increase worker productivity (Galanek, J. D. et al, 2018). Thereby, with the advent and rapid change of new software or applications today, employees must have professional IT skills as well as adaptability to be able to meet the needs of customers. stated request.

### **3. Research Methods**

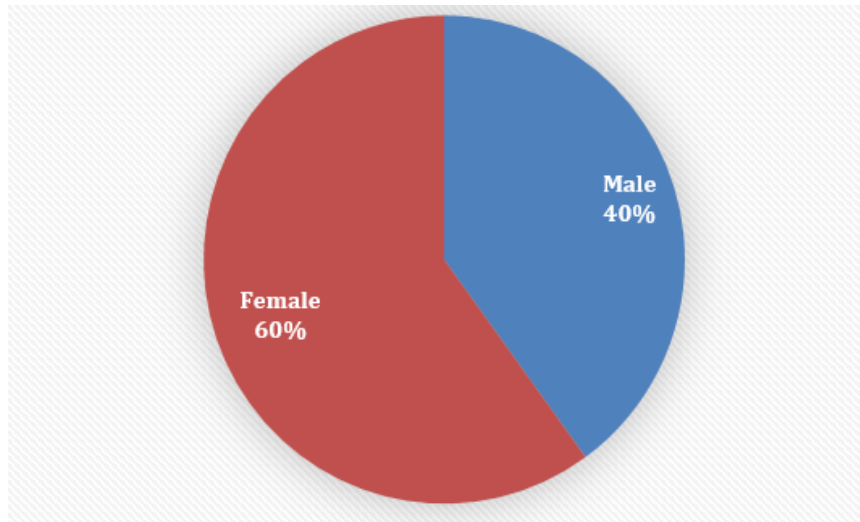
The survey subjects of this study are full-time students majoring in accounting - auditing from economic universities in Hanoi city: The University of Commerce, Academy of Finance, Banking Academy, National Economics University,... is conducted through survey questionnaires. The questionnaire includes Likert-type items (from 1 = "strongly disagree" to 5 = "strongly agree") to measure 4 independent variables and the dependent variable – IT skills.

According to Hair et al 2006 (Tran Van Quy & Cao Hao Thi, 2009), the general rule for the minimum sample size in EFA exploratory factor analysis is 5 times the number of observed variables and the number of samples suitable for the analysis. Multivariate regression is also 5 times the number of observed variables. The group has given 15 observed variables for 4 independent variables, so the minimum sample size will be 75. However, it is also suggested that the minimum number of samples is 10 times (x) the number of variables. The sample size in this study is  $n = 200$ , which meets the standard for the research model. The study used a random sampling method to select the sample.

### **4. Research results**

#### **4.1. Demographic characteristics**

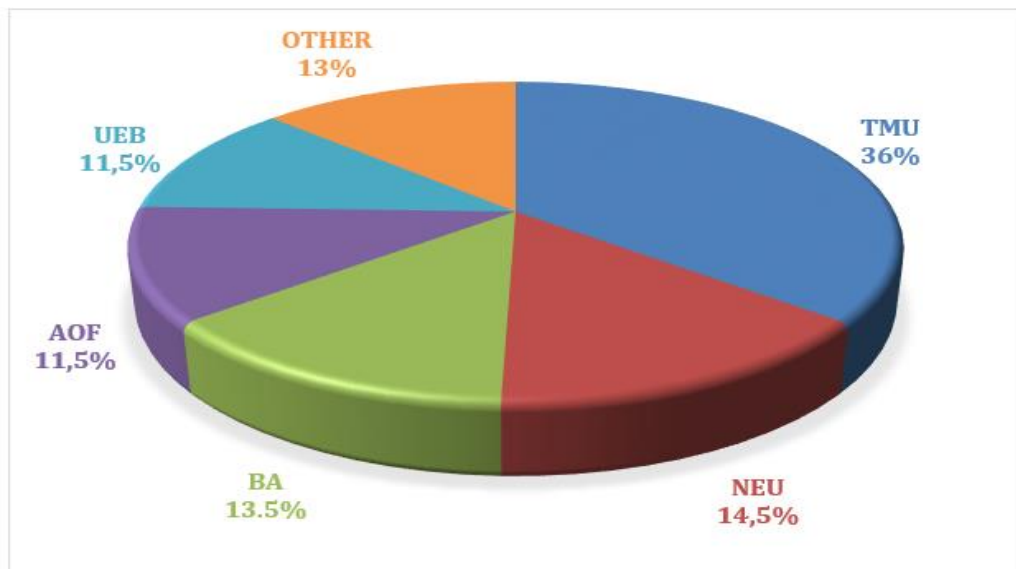
##### **1. Gender**



**Figure 1. Data characteristics of survey participants on gender**

Out of the total of 200 research samples, there are 120 female students (accounting for 60%) and 80 male students (accounting for 40%). Accordingly, the number of female students is 40 more than the number of male students.

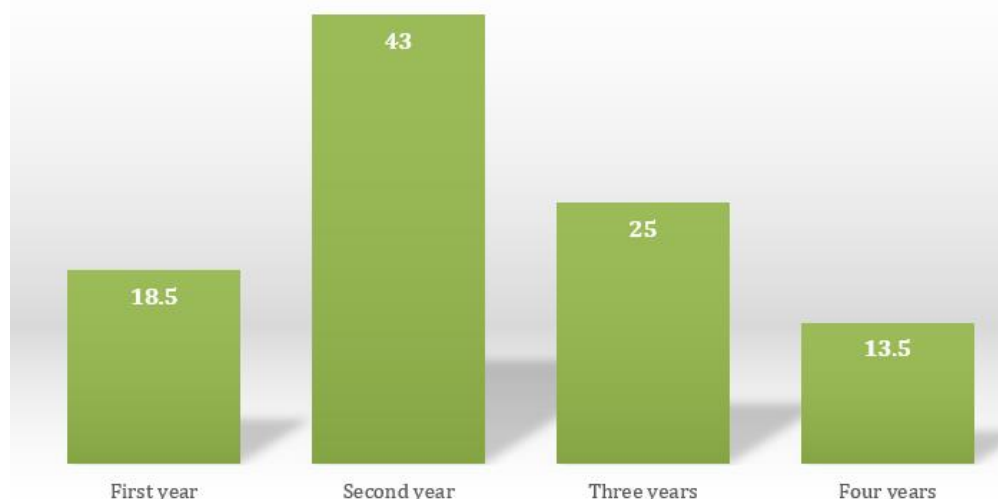
**2. School**



**Figure 2. Data characteristics of university students participating in the survey**

The results that the authors have collected after the investigation show that the students mainly come from ThuongMai University (36%), followed by schools such as the Banking Academy, the National Economics University, the Academy of Finance, and the University of Economics - VNU. This shows that the distribution of survey questionnaires at universities of economics in Hanoi city is quite wide and even. Thereby, the statistics table also aims to show the certain interest and importance of IT skills for students of other majors in general and majoring in accounting and auditing in particular.

**3. Students of the year**



**Figure 3. Data characteristics of students participating in the survey by years**

Based on the data obtained, it is found that most of them are sophomores (43%), and this is probably the right time to familiarize themselves and improve their IT skills. Because then, students have enough time to attend courses at school, but at the same time, they also have access to and practice in class thanks to the support of lecturers and friends. The lowest percentage obtained by the survey questionnaire is in the fourth year (13.5%) but that does not mean that IT skills are not important for them because by the fourth year, almost all students have just started school, and working, so taking surveys from these students is lower than that of freshmen, sophomores, and third years.

## 4.2. Results of analysis of observed variables

### 4.2.1. Science and technology elements

**Table 1: Statistics of science and technology factors**

	N	Sum	Mean	Variance
I see the constant change in technology that requires the professionalization of students' IT skill	200	711	3.55	.700
I see a change in hardware systems and software applications that change students' IT skills	200	727	3.64	.796
I see advances in science and technology that require students to adapt to IT learning and practice	200	722	3.61	.792

*Source: Summary of data processing results*

Science and technology progress has the highest coefficient in the model, which is the component that has the strongest impact on students' IT skills. Thereby, students' perceptions are rated as good or better such as I see that the continuous technology change requires the professionalism of students' IT skills (GPA 3.55). I see a change in hardware systems and software applications that change students' IT skills (GPA 3.64). I see advances in science and technology that require students to adapt to IT learning and practice (GPA 3.61). All of the above criteria are highly appreciated by students. These are the criteria that each student needs to promote in the future.

### 4.2.2. Knowledge and practice of information technology skills

**Table 2: Statistics on knowledge and practice of IT skills**

	N	Sum	Mean	Variance
I regularly attend IT courses	200	773	3.86	.931
I regularly spend time practicing my IT skills	200	795	3.98	.909
I actively self-study and practice IT skills	200	741	3.70	.420
I actively create a group to learn and share IT skills	200	776	3.88	.900

Source: Summary of data processing results

The factor of knowledge and practice of IT skills with the second highest coefficient in the model, is the component that has the second strongest impact on students' IT skills: I regularly attend IT courses (middle score) average 3.86). I regularly spend time practicing my IT skills (GPA of 3.98). I actively self-study and practice IT skills (GPA of 3.70). I actively created a group to learn and share IT skills (GPA 3.88). Therefore, students need to improve their knowledge and practice of IT skills to meet the increasing learning needs and improve their IT skills.

#### 4.2.3. The Training Program

Table 3: Statistics of training program elements

	N	Sum	Mean	Variance
The school regularly organizes training programs with modules on IT skills for students.	200	801	4.01	.457
The teaching method of the lecturer is suitable for the students' IT skills	200	767	3.84	.852
The school's facilities ensure quality and meet the needs of learning and practicing IT	200	775	3.88	.884
The school regularly organizes talks, seminars, and courses on IT skills	200	782	3.91	.906

Source: Summary of data processing results

The training program factor has the third highest coefficient in the model and is the third most influential component on students' IT skills. This proves that the training program is gradually meeting the needs of students. Therefore, to further improve students' IT skills in the coming time, a training program is also set out. The score of the training program is as follows: The teaching method of the lecturer is suitable for the students' IT skills (GPA of 3.84). The school's facilities ensure quality and meet the needs of learning and practicing IT (GPA 3.88). The school regularly organizes talks, seminars, and courses on IT skills (GPA 3.91).

#### 4.2.4. Awareness of information technology skills

Table 4: Statistics of cognitive factors on IT skills

	N	Sum	Mean	Variance
I find IT skills very important in learning	200	773	3.86	.931
I find IT skills can help ease the burden in my career	200	795	3.98	.909

I find IT skills to save working time	200	741	3.70	.420
I find IT skills bring more career opportunities	200	776	3.88	.900

*Source: Summary of data processing results*

The perceived factor of IT skills has the lowest coefficient in the model, which is the component that has the weakest impact on students' IT skills: I find IT skills very important in learning (GPA 3.86). I see IT skills can help ease the burden in the career (GPA 3.98). I find IT skills to save work time (GPA 3.70). I see IT skills offer more career opportunities (GPA 3.88). Therefore, students need awareness of IT skills to help students better understand IT skills.

This is completely consistent with the reality of today's students, when the progress in science and technology is increasing, students need to change quickly to catch up with the general trend and adapt well to the changes. that changed. At the same time, knowing and practicing skills also helps students gain a deeper understanding of IT, find out how to handle it quickly, and create efficiency. In addition, good facilities also facilitate the development of IT skills for students and students need to have the right awareness to gain new perspectives on how important and necessary IT skills are,... help me bring many benefits in study and work.

Besides, students majoring in accounting - auditing are trained by many reputable universities, providing a lot of important knowledge to IT skills to help students gain a large amount of understanding. The different teaching of the lecturer also brings about diversity in the student's understanding and perception of IT. However, students also need to hone their IT skills outside such as in supplementary IT skills classes or the working environment and improve their sense of self-study and teamwork so that students' IT skills can be improved. members will improve significantly and quickly.

## 5. Conclusion and recommendations

From the results of the research model regression, it is shown that it is necessary to have solutions to stimulate students' understanding and adaptation to the continuous change in technology to help students become proficient in IT skills. Therefore, the group has proposed some solutions to improve the proficient use of IT skills of students majoring in accounting - auditing to create open opportunities and improve understanding of Industrial revolution 4.0 for students. students to train high-quality human resources to provide society as follows:

*Firstly*, students need to try harder to learn new knowledge, and always update new applications and software because the specificity of IT is always changing very quickly. The knowledge about changes in hardware systems and software applications should also be disseminated regularly to students right from the time they are in school. At the same time, students also need to adapt and absorb new advances quickly to be able to keep up with the daily and hourly changes in science and technology.

*Secondly*, students need to actively enroll in and play a key role in IT courses on and off campus. In addition, students need to maintain spending time practicing their existing skills and increase the frequency of practicing new IT skills through available applications, software, or Websites. Besides, students can also create study groups with friends or lecturers to share the IT skills needed during their studies or can serve for work in the classroom in the future.

*Thirdly*, leaders of training institutions need to innovate and organize seminars on Industry 4.0 for lecturers and students of the university to raise awareness about the importance of IT application. Besides, universities specializing in accounting and auditing need to equip students with IT skills when building training plans such as Excel, Powerpoint, Google Docs, or accounting software as well as other software. work remotely. Training institutions specializing in accounting and auditing should also add training programs related to IT skills used in majors such as Blockchain, and cloud so that students can have faster and clearer access to them, creating opportunities for students to understand and apply flexibly in the future working environment.

*Fourth*, students need to be proficient in computer applications; support online, and distance learning; tools to exchange and store data (cloud, drive, ...) so that we can understand and realize the important value of IT skills. Students also need to learn and gradually approach new applications and technologies related to their major.

However, the research results still have some limitations as follows: limited scope, subjects, and time to conduct the study, along with the fact that the questionnaire is not complete, the new study was conducted on students majoring in accounting - auditing at universities of economics in Hanoi but has not done it with

students majoring in accounting - auditing with a broader scope and scale. Therefore, in the future, the authors wish to complete the questionnaire, expand the survey object and scope to have more accurate analytical results, and give more practical recommendations to improve the survey results to create high-quality human resources to provide to society.

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