The Effect of Organizational Factors and Social Influence on the Digital Fluency of Accounting Students

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Abstract. Businesses and organizations have already integrated information and communications technology into their everyday work cycle, one of these technologies is Software-as-a-Service based cloud accounting applications, this makes digital fluency in the 21st century paramount for accounting students getting ready to dive into the working environment. The objective of this study is to prove the effect of organizational factors and social influence on the digital fluency of accounting students. This paper uses the quantitative method of data collection using electronic questionnaires, the data is then processed and observed using the Partial Least Squares Structural Equation Modelling (PLS-SEM) with the SmartPLS application. We have discovered through the study that organizational factors do, have a significant influence on behavioral intention, and how that intention significantly affects the actual use of SaaS, which in turn, has also a favorable influence on accounting students' propensity for digital fluency. The findings of this study can be used for other related literature as a benchmark, and to also push organizations and universities to provide necessary help and resources for accounting students to become more digitally fluent in the 21st century through the use of SaaS.

1 Introduction

The rise of information and communications technology (ICT) has made digital fluency in the 21st century extremely pertinent [1]. In the era of the fourth industrial revolution, technology has become an indispensable part of our society, from the mobile devices we hold in our hands, to computers used by organizations. Technology has made it easier for organizations to organize and process data [2]. Data is an essential component in analyzing information, which can be used by organizations in assisting them in their business processes. [3] stated that many professional services firms have been transformed by advances in ICT but none more so than those in the public accounting industry. Previously a slow-moving and conservative industry, public accounting underwent significant transformations at the tuSrn of the millennium, owing largely to rapid changes in the business environment.

ICT allows businesses to become more competitive [4], where organizations use the software as their medium in processing data, which can help speed up their performance both in terms of completing tasks or compiling data needed by the organization. This software has different features and user experiences specific to the corresponding software application [5]. There are more than 150 well-known software products in the world, most of which are aimed at huge corporations [6]. He also mentioned that accounting software has become a crucial part of all types of business as accounting software programs help manage finances more effectively. As a result, there is an increasing demand for accountants to be able to operate this accounting software, one of the accounting software technologies used for the sake of this research is cloud accounting, more specifically, the use of Software-as-a-service (SaaS) in the context of accounting.

The cloud accounting system is a cloud-based application that is used over the internet by the end user and has the main purpose of processing financial data [7]. Cloud accounting is a service, where instead of buying and installing the software on a desktop, it is used via the internet using cloud computing [8]. According to the National Institute of Standards and Technology (NIST) report on cloud computing written by [9], SaaS is a system where a consumer is given the ability to use the provider's apps that are hosted on a cloud architecture. The apps can be accessed via a thin client interface, such as a web browser, or a program interface, via a variety of client devices. Apart from restricted user-specific application configuration choices, the customer does not manage or control the underlying cloud infrastructure, which includes network, servers, operating systems, storage, or even individual application capabilities. Typically, cloud accounting is delivered as a SaaS [7], and it is usually referred to as an "on-demand software" and is priced on a pay-per-use basis [8]. [10] mentioned that

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organizations could implement technological innovations, but the effectiveness of these innovations ultimately rests upon the usage of the newly implemented technology by the employees of the organization. However, in the context of digital fluency, especially in the 21st century, modern ways of acquiring information must also be accounted for.

Studies show that individual innovations not only rely on individual attitudes and behavior, but also rely on organizational policies, approaches, and actions [10]. He also stated that organizations must create facilitating conditions, such as the level and type of assistance they provide to individuals, the availability of training and support are examples of these facilitating conditions. This variable is also present in the organizational context of the Technology Organization Environment (TOE) framework created by [11], which evaluates variables such as business scope, management structure, and organizational readiness, as well as issues concerning the availability of resources needed for managerial support [12].

Organizational factors are extremely important for employees. However, in the context of young accounting students such as interns, Social factors have to also be considered. Social influence is one of the variables that exist in the Unified Theory of Acceptance and Use of Technology (UTAUT) model constructed by [13]. Previous studies [14] did not include a subjective norms component in TAM since it was one of the TRA's least known components [15]. However, with such a young and impressionable demographic, social factors become one of the more determining factors in this research. In addition to that, the UTAUT model, when compared to other theories and models, gives a better comprehension of the variation in behavioral intention [16].

There is a difference between the definition of digital literacy and digital fluency. The functional definition of digital literacy is a set of abilities that permits the user to efficiently operate and use technology [17]. [18] and [19] stated that among the many definitions that exist, digital fluency can be broadly defined as the ability of a user to reformulate, assess, and learn emerging technologies. [20] reasoned that digital fluency elevates one's understanding of key concepts that can help generate learning and use of new technologies available. Based on the definition alone, it can be said that there is a significant relationship between the act of using technologies and digital fluency. However, [21] argue that knowing how to utilize ICTs does not imply that one can use them fluently. A research done by [18], has proven that use of technology has some influence on digital fluency, however, empirical and primary data still needs to be collected for the sake of validity and objectivity of the results.

Numerous studies have shown that digital fluency and digital literacy have significant impacts on the use of technology [21, 22, 19]. However, few studies have explored the effects of technology use towards the digital fluency of accounting students. Digital fluency has been considered a vital skill for individuals to become successful in the digital age [19], and accountants across the globe are no exception, especially accounting students, who generally have less experience working in an organization and are more likely to be influenced by their colleagues compared to full-fledged accountants. For this reason, further research needs to be done, using organizational factors and social influence as the independent variables, behavioral intention and actual use as the moderating variables, and digital fluency as the dependent variable of the study, we conducted an empirical research of organizational factors and social influence, and how they effect the digital fluency of accounting students.

1.1 Objectives

Research on exploring the differences between digital natives and digital immigrants written by [18], where extensive literature research was conducted, constructed a conceptual model of digital fluency, and suggests that organizational factors and social influence are two of the four deciding factors in creating a sense of opportunity and behavior intention to use technology, in the context of this research, we substituted technology with cloud accounting, more specifically SaaS-based accounting applications, as we are mainly focusing on accounting students as the subjects. Based on that, this research paper aims to determine the effects of an organization's behavior, and the various social aspects of an individual toward the use of cloud-based accounting software on the digital fluency of accounting students, and to create a valid structural framework of digital fluency of accounting students.

2 Hypothesis Development

[23] stated that beyond behavioral intentions, organizational factors such as facilitating conditions can also predict behaviors. Meaning that even with high levels of the intention of the individual, if objective obstacles are present, behaviors are less likely to arise. In an organization, it is imperative to provide training for its employees, as employees are one of the deciding factors in an organization's success [24]. Management support is also one of the more crucial aspects of facilitation for employees, with [25] stating that top management support provides both support and allocation of resources such as software and hardware support for the employees. [26] also voiced that management accounting has a relationship with information technology once it has surpassed implementation barriers, and that therefore, the intermingling between accounting and information technology is important. Thus, organizational factors such as training, management, and information technology support have considerable influence on behavioral intentions to use technology and innovations, in this case, the use of SaaS in the context of cloud accounting. Therefore, it can be hypothesized that:

H1. Organizational Factors have a positive effect on the behavior intention to use SaaS.

An employee's adoption of innovation is affected by their social environment, and others' innovations in the employee's social environment are likely to have a

significant impact on the employee's growth. The amount to which members of a group in a social context may affect one another's conduct in adopting an understanding is referred to as social influence [10]. Existing research has mostly focused on the psychological variables that influence users' decision to continue. Users' intention to continue is, however, more than a psychological process; it is also a social process influenced by the information and knowledge gained from the social environment [27]. Social influence is one of the key factors in affecting the usage of innovation in The Unified Theory of Acceptance and Use of Technology (UTAUT) structure model. [13] stated that social influence is a significant predictor of technology use. Social influence can be defined as the impact of a group on system usage [10], this can influence system use either positively, or negatively. Previous research shows that an individual that uses innovations can influence the decision-making of other individuals, since innovations may raise their image and social status [28]. [29] stated that social influence may affect an individual through their colleagues and senior managers. [18] also stated that social influence from family, peers, and superiors contributes to the growth of technological skills. The social cognitive theory written by [30] stated that external elements, personal motivation, and behavior all operate for the sake of humans to learn and gain knowledge. This means that colleagues, family, friends, and superiors have somewhat of an influence on the use of new technologies and innovation. Therefore, it can be hypothesized that:

H2. Social Influence has a positive effect on the behavior intention to use SaaS.

[31] stated that behavioral intention is "a person's subjective probability that he or she will perform some behavior". [32] stated that there is significant influence between behavioral intention and university students' actual use of software. [33], also implied in their study that in order for a university student to increasingly use technology, their attitude and behavior towards said technology has to be high, this indicates that there is a correlation between behavior intention and actual usage of technology. [34] also stated in his study that behavioral intention does indeed have significant influence on actual use of technology. Moreover, the key dependent element of UTAUT, as well as other basic models, schemes, and theories studying an individual's behavioral intention toward the adoption or usage of existing technologies, is behavioral intention [35]. Therefore, the behavior of an individual can influence the decision to choose and to use the technology [18, 10], in this case, the SaaS application used by an individual. The hypothesis that we can raise from the statement is:

H3. Behavioral Intention has a positive effect on the Actual Use of SaaS.

Digital fluency is a broad term that is commonly used, however, [19] defined it as an individual's ability to properly use digital technologies, and the ability to process information. This definition can be attributed to the continuous growth of technology, where digital technology continues to adapt to the needs of the public [36]. [37] stated in his research findings that for someone (educator) to explain a digital program, they must first be digitally proficient. As a result, if an educator must be digitally proficient to process a program, a professional worker must also be able to have these abilities to compete in today's technology-driven world, which in turn will improve their digital fluency. [38] also stated that digital literacy is the ability of someone to use a certain technology and that digital fluency is a step beyond that, where an individual can produce things of significance with said technology. [22] stated that academics should focus on digital fluency rather than digital literacy in this age because practically everyone has access to information technology, this is the case because he reasoned that it is becoming increasingly difficult to find someone who has never used a computer. According to [39] Subjects can only be classified as being digitally fluent individuals if they can use a combination of different digital technologies. From the definition alone, it can be said that for a user to be digitally fluent, they must possess the technical know-how of using technologies first. The following is a hypothesis that may be drawn from the preceding statement:

H4. Actual Use of Technology (SaaS) has a positive effect on Digital Fluency.

3 Research Method

This study is a quantitative research, where quantifiable and statistical data is collected. The sampling that is used in this research is the purposive sampling technique. The primary data is collected using online electronic surveys using Google Forms as the instrument, and the target population for this research is accounting students from universities in Jabodetabek (Jakarta-Bogor-Depok-Tangerang-Bekasi) that are undergoing or has finished their internship in businesses and firms. For this research, the sample size is calculated using the Lemeshow Formula. Using this formula allows the researchers to determine the sample numbers needed despite the large and unquantified population of the study.

The sample number (n) is calculated as follows:

$$n = \frac{Z^2\, p(1-p)}{e^2}$$
$$n = \frac{1.96^2\,.\,0.5(1-0.5)}{0.1^2}$$
$$n = \frac{3.8416\,.\,0.25}{0.01}$$
$$n = \frac{0.9604}{0.01}$$
$$n = 96.04$$

Rounding n up will give it 100 as the sample number for the study. The items of the survey are scaled using the Likert Scale, from 4 presented as strongly agree, to 1 presented as strongly disagree. The criteria of the respondents have also been determined, which are: (1) Is a student of the faculty of economics and business at Universities in Jabodetabek, and has taken accounting

courses, (2) The individual has done or is currently undergoing an internship, and (3) The individual has used or is currently using, a SaaS-based cloud accounting application.

4 Data Analysis

The data collected is then analyzed and calculated with the Partial Least Squares Structural Equation Modeling (PLS-SEM). Below is the structural model of the research.

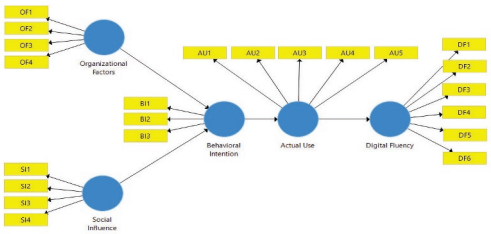

Fig. 1 Structural Model of Research (Source: Authors, 2022)

PLS-SEM is designed to predict statistical models and is structured to provide causal explanations [40]. The data that is collected will be analyzed using the coefficient of determination (R^2), and effect size test (F^2). As for hypothesis testing, the individual parameter significance test (T-test) will be conducted. Reliability tests, as well as convergent and discriminant validity, will also be carried out. Consistency reliability will be measured using Cronbach's Alpha, rho_A, and Composite Reliability. Convergent validity will be evaluated using the Average Variance Extracted (AVE) metric, and the discriminant validity will be tested using the Heterotrait-monotrait Ratio (HTMT) proposed by [41]. The construct measures of the variables are detailed in the table below.

Table 1. Construct measures (Source: Authors, 2022)

Organizational Factors

OF1	Training on SaaS usage is meeting my requirements	[42]
OF2	Top management support provides most of the necessary help and resources	[43]
OF3	Top management supports and encourages the use of SaaS	
OF4	Top management provides good access to various types of software	

Social Influence

SI1	I anticipate I will use SaaS because of the proportion of co-workers who use this tool	[44]
SI2	I anticipate that my organization will support the use of SaaS	
SI3	I anticipate people who influence my behavior will think that I should use SaaS	
SI4	If I use SaaS, my co-workers will perceive me as competent	

Behavioral Intention

BI1	I am motivated to use SaaS	[34]
BI2	I recommend using SaaS	
BI3	I am very likely to use SaaS	

Actual Use

AU1	Technologies used in SaaS in corporations are easy to be used	[33]
AU2	Technologies used in SaaS in corporations are more flexible including a wide range of individual preferences and abilities.	
AU3	I think accountants get more productive work done when using SaaS	
AU4	I think every accountant generally has fast internet access to use SaaS	[34]
AU5	I think every accountant generally has a good environment to use SaaS	

Digital Fluency

DF1	I can quickly pick up new features from different SaaS	[21]
DF2	I often explore the new features of SaaS	
DF3	I can use digital tools to plan and manage activities to complete a project or develop a solution	
DF4	I can use digital tools to explore alternative solutions from diverse perspectives	[45]
DF5	I can make informed decisions or identify solutions based on data gathered from technology resources	
DF6	I can utilize digital tools to identify and define authentic problems for investigation	

Table 1 elaborates all the measurement items in detail, with OF containing 4 measurement items, SI containing 4 items, BI containing 3 items, AU containing 5 items, and DF containing 5 items. Items of the questionnaire used for this research are derived from already existing questionnaire items.

5 Results and Discussion

Below is a table showing the demographic characteristics of this research's respondents. The characteristics of the respondents were determined based on SaaS usage time, gender, university location, and their estimated graduation year.

Table 2. Respondent demographics (Source: Authors, 2022)

	Frequency
Total number of respondents (accounting students who has used SaaS)	100
Gender	
Male	51
Female	49
SaaS usage time frame	
< 6 months	57
6 months – 1 year	34
2 – 3 years	8
> 3 years	1
University locations	
Jakarta	70
Depok	12
Bogor	3
Tangerang	14
Bekasi	1
Estimated graduation year	

2022	85
2023	15

Table 2 conveys the demographic data gathered by the authors. From a total of 100 respondents gathered, 51 of them are male and 49 of them are female. The SaaS usage time frame of the respondents are 57 for a usage time of < 6 months, 34 for a usage time of 6 months – 1 year, 8 for 2 – 3 years, and 1 respondent with a usage time of > 3 years. As for the university locations of the respondents, most of them are studying in Jakarta with 70 respondents, Depok with 12 respondents, Bogor with 3 respondents, Tangerang with 14 respondents, and Bekasi with 1 respondent. The estimated graduation year of the respondents is 85 respondents with an expected the graduation year of 2022, and 15 respondents expected to graduate in 2023.

5.1 Numerical Results

5.1.1 Model Calculation

The research model is calculated using the SmartPLS program, which connects the latent variables to the indicator items from the data obtained from the questionnaire. The indicator is used to ensure that the Independent and Dependent variables are legitimate. Below is a figure of the research framework calculated in SmartPLS.

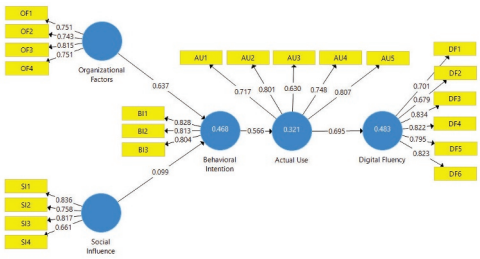

Fig. 2. Model calculation analysis (Source: Processed data, 2022)

Figure 1 shows the outer loadings of each item in each latent variable from the calculation of the PLS Algorithm, moreover, the coefficient of determination (R^2) of the variables can also be seen. Below is a table that elaborates the results in further detail.

Table 3. Coefficient of determination (R^2) results (Source: Processed data, 2022)

	R^2	R^2 adjusted
BI	0.468	0.457
AU	0.321	0.314
DF	0.483	0.477

Table 3 shows that the variable known as Behavioral Intention (BI) has an R^2 of 46.8%, meaning that this variable can be explained by the two other latent variables of the study, namely Organizational Factors (OF) and Social Influence (SI). Actual Use (AU) has an R^2 of 32.1%, which means that AU can be explained by the three other variables before it, namely OF, BI, and SI. As for Digital Fluency (DF), according to the R^2 of this variable, it can be explained by all the other variables before it by 48.3%.

5.1.2 Measurement Model Analysis

Before analyzing the structural model of the research, the reliability and validity of the model items must be established.

Table 4. Reliability and validity test results (Source: Processed data, 2022)

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
AU	0.795	0.808	0.860	0.553
BI	0.747	0.749	0.856	0.664
DF	0.868	0.878	0.901	0.605
OF	0.767	0.779	0.850	0.586
SI	0.773	0.806	0.853	0.594

Table 4 shows the values of the reliability and validity test values. The composite reliability, like the Cronbach's alpha, is a measure of the construct reliability of a reflective construct, but it incorporates the real factor loading, whereas Cronbach's alpha employs equal weighting [46]. When Cronbach's alpha values are < 0.6, the items in question are not considered reliable if the range of Cronbach's alpha coefficients is ≥ 0.7, then internal consistency can be established, while Cronbach's alpha coefficients between 0.8 and 0.95 are considered excellent [47]. Considering this, the Cronbach's alpha, rho_A, and composite reliability of the latent variables all meet the criteria, establishing their reliability. Additionally, convergent validity is measured using the Average Variance Extracted (AVE), which has also been established, where all measurements are ≥ 0.5.

The Heterotrait-monotrait ratio (HTMT) and the Fornell-Larcker criterion are used to determine the discriminant validity of the items.

Table 5. Discriminant validity results (Source: Processed data, 2022)

	HTMT					Fornell-Larcker criterion				
	AU	BI	DF	OF	SI	AU	BI	DF	OF	SI
AU						0.743				
BI	0.734					0.566	0.815			
DF	0.818	0.626				0.695	0.509	0.778		
OF	0.770	0.869	0.727			0.607	0.678	0.595	0.765	
SI	0.699	0.464	0.649	0.540		0.556	0.364	0.541	0.417	0.771

All items in the study have been established as distinct from one another as seen in table 5, with the

suggested cutoff point of 0.9 (Gold et al, 2001). According to the Fornell-Larcker criterion, discriminant validity has also been established, this is the case because all the associated items load higher by themselves compared to when it is loaded with other items. With AU with the value of 0.743, BI with a value of 0.815, DF with a value of 0.778, OF with a value of 0.765, and SI with a value of 0.771.

5.1.3 Hypothesis Testing and Effect Size

For the hypothesis testing, the structural model analysis, or inner model analysis is used to examine and assess the existing relationships of one latent variable to another, or lack thereof. This analysis is done by observing the probability value (p-value). P-value is often referred to as the statistical significance between one latent variable to another [48].

Table 6. T-test results (Source: Processed data, 2022)

Hypothesis	Path	Original sample (O)	Sample mean	Std. deviation (STDEV)	T-statistics (O/STDEV)	P-values	Hypothesis Results
H1	OF → BI	0.637	0.637	0.072	8.844	0.000	Accepted
H2	SI → BI	0.099	0.115	0.078	1.270	0.204	Rejected
H3	BI → AU	0.566	0.571	0.075	7.568	0.000	Accepted
H4	AU → DF	0.695	0.704	0.053	13.023	0.000	Accepted

Table 6 shows the hypotheses statistical significance formed in this study. A statistically significant p-value is ≤ 0.05. It provides significant evidence against the null hypothesis. As a result, the null hypothesis is rejected, and the alternative hypothesis is accepted. The individual parameter significance test (T-test) was tested with a significance level of 0.05, making the T-statistic required for a variable to be deemed significant ≥ 1.96.

F^2 is used to observe the effect size of the hypothesis, where if the value of F^2 is < 0.15 then it is not a big enough effect for the hypothesis to be meaningful.

Table 7. Effect size (F^2) results (Source: Processed data, 2022)

Hypothesis	F^2
OF → BI	0.631
SI → BI	0.015
BI → AU	0.472
AU → DF	0.933

Table 7 shows that three of the four hypotheses in the study have a large enough effect size for it to be meaningful. According to [49], a small effect size is around the value of ≥ 0.02 is small; ≥ 0.15 is medium, and ≥ 0.35 is large. This signifies that 3 of the 4 hypotheses present in the study have a large effect size for it to be useful to the study.

5.2 Proposed Improvements

This research is of course without its limitations, the SI towards the BI hypothesis had unsatisfactory results, this may be the case because of the lack of sample size in the study, putting this into account, the sample size of the study can be broadened even further by conducting larger research on accounting students from universities across Indonesia for more satisfactory results, moreover, other factors might be taken into account that may have a significant influence on the digital fluency of accounting students. Perhaps a more generalized measurement model that focuses on all age demographics rather than specifically focusing on young demographics such as accounting students.

5.3 Discussion

The first hypothesis (**H1**), or the hypothesized path of OF to BI has a t-statistic value of 8.844, which is higher than the minimum t-statistic value of 1.96, making the p-value of the hypothesis to be 0, rejecting the null hypothesis and accepting the alternative hypothesis, establishing it as statistically significant. This suggests organizations should provide the appropriate amount of training, resources, and positive encouragement from the top management of their firms, this may help bolster their motivation and intention to use SaaS. These results are consistent with the previous research of [50], who finds that organizational factors such as facilitating conditions have a significant influence on behavioral intention to use SaaS.

The second hypothesis (**H2**), or the hypothesized path of SI to BI has a t-statistic value of 1.270, which is lower than the minimum t-statistic value of 1.96, making the p-value of the hypothesis to be 0.204, which is not statistically significant, keeping the null hypothesis and rejecting the alternative hypothesis. The F^2, which determines the effect size for H2 has also little to no effect. This may suggest that accounting students are not as impressionable as was previously thought, or perhaps the number of samples used in this study is not big enough to provide the results that are expected from the hypothesis.

Empirical findings of the third hypothesis (**H3**), or the hypothesized path of BI to AU prove to be statistically significant and are in line with the previous work of Taufiq-Hail et al, (2021) and other already existing theories like UTAUT. H3 has a t-statistic value of 7.568, which is higher than the minimum t-statistic value of 1.96, making the p-value of the hypothesis to be 0, accepting the alternative hypothesis. These results are expected, as existing theories have proven the relationship between the two variables. Implications

from this hypothesis in the context of this study is that increasing the motivation and intention of accounting students to use SaaS is very important for the actual use of SaaS.

The final hypothesis of the study (**H4**) is AU to DF, for this hypothesis, the t-statistic of this hypothesized path is the highest out of all the other hypothesized paths with a 13.023 for its t-statistic value, and the highest value of F^2, which is its effect size compared to the other hypotheses, with a 0.933. This indicates that the hypothesis has a very high predictive ability as a coefficient. The results are aligned with the previous study results of [18]. These results imply that using SaaS-based cloud accounting applications will raise the digital fluency of accounting students.

6 Conclusion

This paper presents a structural framework of digital fluency by integrating several variables of the UTAUT model and the TOE, the research was done by spreading electronic questionnaires as its instrument to gather the necessary data, said data is gathered from the 100 accounting students who have or is undergoing internship from universities in Jabodetabek who has used SaaS-based cloud accounting applications.

This research can be utilized by organizations in implementing more training and providing the necessary resources for accounting students in using cloud-based accounting software, moreover, universities could also utilize the results of this study to prepare accounting students in using more accounting technologies such as SaaS to increase their digital fluency and improve their quality in a working environment, which has been proven by this research to be a significant factor for the digital fluency of accounting students. Digital fluency is important for them to be more successful in the 21st century, where ICT is extremely abundant, especially in the accounting sphere, and perhaps push accounting students to be more conscious of the level of their digital fluency. Even with the limitations of this study as previously mentioned, this research has constructed a conceptualized framework that other applicable studies may use as a reference.

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