

# Drivers of Acceptance Towards Generalized Audit Software (GAS) Adoption

Masraya Sait<sup>1\*</sup>

<sup>1</sup>Department of Commerce, Politeknik Mukah, KM 7.5 Jalan Oya, 96400 Mukah, Sarawak, Malaysia

\*Corresponding author: masraya.sait@pmu.edu.my

## Abstract

In this digital age, academic staff in the educational sector are not exceptions to embracing new technological advancements in order to remain relevant and competitive. By employing the technology acceptance model (TAM), this study investigates the drivers of intention to use generalized audit software (GAS) among academic staff in Malaysian Technical and Vocational Education and Training (TVET) institutions. Academic staff were responding the online questionnaire which distribute via official email and official group WhatsApp. The data then being screening using IBM SPSS Statistic 22 and analysed using SmartPLS 4. The results indicates that both main constructs of TAM, namely perceived ease of use and perceived usefulness, have significant positive influence towards the intention to use GAS among academic staff. This confirming TAM literature as popular and reliable model in predicting users' behaviour over accepting new technology. This result of this study is critical for interested parties including higher education institution as well as academic staff in determining their next strategy employing technology advance to empower TVET institution.

*Keywords: - Technology acceptance model, generalized audit software, academic staff*

## 1. Introduction

Rapid growth of technology has changed how companies work and engage, presenting auditors with both new opportunities and difficulties. To deal with the growing volume and complexity of data, shifting demands from stakeholders, and new opportunities and hazards brought on by technological advances, the auditor has no choice but to upskilling their competency in line with technology transformation. In this digital age, this new skill is essential to guarantee the accuracy and trustworthiness of information and data, to offer assurance and clarity to interested parties, and taking advantage of technology to improve auditing productivity and effectiveness. Such skills including data analytic, cybersecurity, critical thinking and communication (FasterCapital, 2024). Higher education institution also has to change their games by supplying industry the accounting graduates with relevant digital skills, such as generalised audit software (GAS) that has data analytic features. However, does their academic staffs has the competency and willingness to adopt GAS and integrating it in their teaching activities? Therefore, this study will investigate the drivers of intention to use GAS among academic staffs using technology acceptance model (TAM).

The covid-19 has promoting GAS as data analytic tools that allowing auditors to work remotely and completing their responsibility for their stakeholders.

As a result, various parties become aware the needs to mastering audit-related technology like GAS as it become essential tools in audit profession. Nevertheless, auditors with such skills still limited in the industry (Deloitte, 2021). The absence makes auditors face many obstacles when performing their duties throughout a global epidemic. According to Association of Chartered Certified Accountants (2020), this includes auditors being difficult to engage with clients' corporation, audit quality inconsistencies and had to postpone releasing the audit report. Consequently, the industry has shifted their expectations for future auditor to equip themselves with skillset of digital data analytic, financial, judgement and critical thinking, communication and cybersecurity (Deloitte, 2021; Friedlich, 2024). As such, various organisations including American Institute of Certified Public Accountant (AICPA) and PricewaterhouseCoopers (PwC), urged the higher education institution (HEIs) to updating their accounting curricula in line with industry demand (AICPA, 2019; PricewaterhouseCoopers, 2015).

Nonetheless, Malaysian Technical and Vocational Education and Training (TVET) institutions still yet to respond the called by industry and accounting professional bodies. Auditing courses only focus on theoretical knowledge without any hands-on skill related to audit technologies, particularly GAS. This contradicts to the strategy of TVET Framework and National TVET Policy 2030 to transform the curricula

according to industry needs (Sekretariat Majelis Tvet Negara, 2024; Malaysian Ministry of Education, 2018). This situation led to the creation of skill gap as accounting graduate has limited skills to meet auditing profession and industry requirement in this digital age. This might be the reason why current auditors are falling far behind their corporation clients when it comes to embracing new technologies (Vitali & Giuliani, 2024).

As manpower provider in Malaysia, TVET institution should change their strategies and embrace technology advancement in order to stay relevant. The academic staffs shall focus on providing the accounting graduates with necessary competencies not only to successfully navigate and capitalize in digital age but also improving their marketability. However, the new issue arises as to whether the academic staff willing to adopt and integrate GAS into learning activities. Literature reveals that academic staff has limited experience in industry and capability to incorporate technology in their classes (Yeap et al., 2021). Thus, this called for investigation of the drivers that will influence academic staffs to employ GAS in TVET institution using TAM. This study is importance for related parties in higher education to gauge the potential risks before adopting any new technology that will hinder their main objective which may lead to technology investment losses.

In GAS literature, TAM is popular model to understand the acceptance behaviours of users. The main variables being studied are perceived ease of use and perceived usefulness. In addition, the focus of prior studies mainly the accounting practitioner like external auditor and internal auditor. Thus, this study exploring new setting in educational sector which narrowing the gap in the literature. The findings of this study may contribute to the GAS literature by offering new insight from academic staff perspectives while confirming the reliability of TAM. Furthermore, various parties including top management of TVET institution as well as Malaysian Ministry of Higher Education (MOHE) may benefit from the finding as empirical evidence in regard of competency status of their staff in embracing new technology.

## **2. Literature Review and Hypotheses Development**

### **2.1 Perceived Ease of Use (EASE) and Perceived Usefulness (USE)**

According to Davis (1989), EASE and USE reflect the feeling of individual towards certain new technology. EASE is when they feel that they can master the technology effortlessly, while USE is when they feel their productivity increase once using the

technology. Individuals are more inclined to adopt technology if it has user-friendly features (Yang et al., 2022; Musyaffi et al., 2021). Prior studies agreed this argument, as their findings show that EASE significantly influence USE positively (Amron et al., 2022; Yang et al., 2022). However, study by Silva et al. (2022) reveal that user-friendly technology is not necessarily useful to their users. Hence, H1 was predicted:

*H1: EASE influence USE of GAS significantly positive.*

### **2.2 Perceived Usefulness (USE) and Intention to Use Generalized Audit Software (GAS)**

Intention to use refers to how much an individual has deliberately chosen either to engage or not for specific future behaviour (Davis, 1989). Studies indicates that individuals are more likely to adopt technology since they are knowledgeable about its benefits and potential (Musyaffi et al., 2021). This in line with studies by Amron et al. (2022), Mahzan & Lymer (2014) and Yang et al. (2022) which reveals that USE has impact on users' intention to use technology. As noted, GAS has been known for its abilities to help auditors save money, broaden their audit scope, and enhance the quality of their audits, which subsequently increase the effectiveness and efficacy of the audit procedures (Mahzan & Lymer, 2014; Purnamasari et al., 2022). However, study by Kartikasary et al. (2021) failed to detect any relationship between USE and intention to use GAS. Hence, H2 was predicted:

*H2: USE influence intention to use GAS significantly positive.*

### **2.3 Perceived Ease of Use (EASE) and Intention to Use Generalized Audit Software (GAS)**

According to Raman & Aashish (2022), once an individual believes a technology is user-friendly, they are more likely to demonstrate behavioural intentions toward it. Literature reveals that EASE has positive impact on intention to use GAS (Atta et al., 2024; Kim et al., 2016; Normahazan et al., 2021). They suggest that the auditor can be highly motivated to use GAS, particularly if they anticipate it user-friendly. In contrast, Mahzan & Lymer (2014) and Purnamasari et al. (2022) indicated that EASE is not the driver of the intention to use GAS. They argue that auditors are high qualified expert which might not consider user-friendly features as a main reason to adopt GAS. Hence, H3 was predicted:

*H3: EASE influence intention to use GAS significantly positive.*

### 3. Methodology

This study was conducted at a Malaysian TVET institution with accounting academic staff as target population since GAS is part of Audit courses in Diploma in Accountancy. Sample size is equal to 270 population for unbiased sample to provide universal findings and prevent erroneous inferences. Convenience sampling is employed since it accessible for the researcher to gather the data from co-workers within the same organization. During exploratory studies, this approach is frequently employed and is arguably the most effective means of rapidly and effectively obtaining some fundamental information (Sekaran & Bougie, 2016). Online questionnaire was sent to all respondents at 16 branches via official email and official group WhatsApp. The questionnaire was developed based on prior studies of TAM (Davis, 1989; Damerji & Salimi, 2021; Noh & Amron, 2021) with two separated sections, background information (see Table 1) and measurement of variables. Feedback received was 119 without any outliers, thus the response rate is 44%.

Table 1. Background information (N=119)

Background Information	Frequency	Percentage
Gender	Male	24 20%
	Female	95 80%
Age	30-39	36 30%
	40-49	73 61%
	≥ 50	10 9%
	< 2	2 2%
Experience in education sector	2-10	9 7%
	11-20	85 72%
	> 20	23 19%
	< 1	56 47%
Experience in industry sector	1-2	41 35%
	3-6	17 14%
	≥7	5 4%

### 3. Result

As part of data analysis, this study employs partial least squares structural equation modeling (PLS-SEM) as it able to produce sufficient statistical power even with small size of dataset. Furthermore, this statistical method performs best when the primary objectives of the study are exploratory or predictive modelling (Popoola & Jamel, 2020). Analysis of measurement model indicate that item of measurements has sufficient reliability and validity. Outer loading has over 0.69 value, thus no item had been removed (Hair et al., 2022). Composite reliability (CR) value for internal consistency reliability is more than 0.70 (Hair et al., 2022). Average variance extracted (AVE) value for convergent validity is higher than 0.50 (Hair et al., 2022). Fornell-Lacker criterion for discriminant validity also has been satisfied as the shared variance

within is higher than the shared variance between (Hair et al., 2022).

Table 2. Analysis of measurement model

First Order Construct	Items	Loadings	CR	AVE
Perceived ease of use (EASE)	EASE1	0.923	0.982	0.903
	EASE2	0.949		
	EASE3	0.945		
	EASE4	0.958		
	EASE5	0.966		
	EASE6	0.962		
Perceived usefulness (USE)	USE1	0.933	0.967	0.881
	USE2	0.963		
	USE3	0.959		
	USE4	0.899		
Intention to use GAS (GAS)	GAS1	0.927	0.955	0.842
	GAS2	0.888		
	GAS3	0.927		
	GAS4	0.927		

Analysis of structural model as in Table 3 used path coefficient (p-value and t-value), coefficient of determination ( $R^2$ ), predictive relevance ( $Q^2$ ) and Goodness of Fit Index (GoF) to assess whether the model able to foresee the constructs and identify the correlation among its constructs. In term of multicollinearity, all variables in the model have no multicollinearity issue as tolerance value over 0.20 which is USE; 0.530, EASE:0.530.

Table 3. Hypotheses results

Hypotheses	Relation	t-value	P-value	Decision
H1	EASE-USE	4.624	0.000	Supported
H2	USE-GAS	14.469	0.000	Supported
H3	EASE-GAS	7.055	0.000	Supported

Note: USE-perceived usefulness; EASE-perceived ease of use; GAS-intention to use GAS

As per Table 3, all the hypotheses (H1, H2 and H3) were supported with p-value over 1.65 critical value and t-value below 5% of significant level (Hair et al., 2022).  $R^2$  implying predictive power level which is GAS (0.735) has strong level while USE (0.546) has moderate level (Chin, 1998). Meanwhile,  $Q^2$  reflect predictive relevance of model, both GAS (0.601) and USE (0.542) have large predictive relevance level (Hair et al., 2022). In addition, the GoF value (0.749) is deemed substantial, suggesting the PLS model has adequate validity (Wetzel et al., 2009).

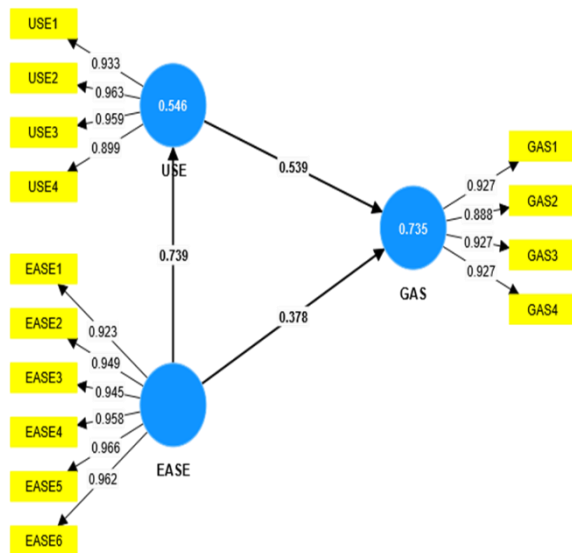


Fig. 1. Structural model

#### 4. Discussion

Results of this study shows that perceived ease of use has influence toward perceived usefulness significantly positive, hence H1 is supported. This results in line with past studies Amron et al. (2022) and Yang et al. (2022). Not only the benefit comes from adopting GAS, academic staff also considered user-friendly feature as part of the usefulness of GAS. The reason behind it might be due to majority of academic staff are older generation who not growing up with high-tech environment in comparison to younger generation.

H2 also been supported as perceived usefulness has influence intention to use GAS significantly positive. The result agreed with studies by Amron et al. (2022), Mahzan & Lymer (2014), Musyaffi et al. (2022) and Yang et al. (2022). When academic staff gain knowledge about benefit and high demand of GAS skill in the industry, they will not hesitate to employ it. They believed skill of using GAS will increase employability of their students after finishing their study.

Most of academic staff lacking in term of industry experience which make them not familiar with technology related to their field. Therefore, user-friendly technology will enhance their motivation to adopt that technology. Perceived ease of use is found to have significant positive relationship with intention to use GAS, thus H3 is supported. The studies by Kim et al. (2016) and Normahazan et al. (2021) has similar result which confirming that perceived ease of use is one main driver for intention to use GAS.

#### 5. Conclusion

This study confirms the TAM literature in regard of GAS adoption. The interest of academic staff to adopt GAS increase when they understand that it user-

friendly and critical skills to current or future auditor including their students. This finding is consistent in GAS literature which reveals by Amron et al. (2022), Yang et al. (2022), Mahzan & Lymer (2014), Musyaffi et al. (2022), Kim et al. (2016) and Normahazan et al. (2021). This study offers new insight of GAS adoption from educational settings in developing country, Malaysia, which rarely been discuss before in the literature. In addition, top management of education institution and Ministry of Higher Education can benefit from this study in term of providing empirical evidence related to competency level of their academic staffs. From here, they may strategically plan such as collaboration with related industry to upskilling the academic staffs via hands on trainings. With skilled academic staffs, they can embed GAS into accounting curriculum which contribute in producing high quality graduates as per industry demand.

TAM is system-specific paradigm which basically concentrate on the perception of people toward certain technology. Therefore, future study can explore the external factor like organization culture as the driver of GAS adoption. Furthermore, the setting of this study is TVET institution in which the results may not be generalized with different setting like universities. Thus, this study can be extended more to other than TVET academic staffs.

#### References

- Amron, M. T., Md Noh, N. H., & Mohamad, M. A. (2022). Predicting the acceptance of cloud computing in higher education institutions by extending the Technology Readiness Theory. *Asian Journal of University Education*, 18(3). <https://doi.org/10.24191/ajue.v18i3.18968>
- Association of Chartered Certified Accountants. (2020). ACCA Member Survey, Business challenges and considerations for the Covid-19 outbreak, Retrieved January 12, 2024 from [https://www.accaglobal.com/content/dam/ACCA\\_Global/Assets/campaigns/ACCA-member-survey-Business-challenges-Covid-19.pdf](https://www.accaglobal.com/content/dam/ACCA_Global/Assets/campaigns/ACCA-member-survey-Business-challenges-Covid-19.pdf).
- Atta, A. A., Baniata, H. M., Othman, O. H., Ali, B. J., Abughaush, S. W., Aljundi, N. A., & Ahmad, A. Y. (2024). The impact of computer assisted auditing techniques in the Audit Process: An Assessment of performance and effort expectancy. *International Journal of Data and Network Science*, 8(2), 977–988. <https://doi.org/10.5267/j.ijdns.2023.12.009>.
- Chin, W. W. (1998). The partial least squares approach to structural equation modeling. *Modern Methods for Business Research*, 295(2), 295-336.
- Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of Information Technology. *MIS Quarterly*, 13(3), 319. <https://doi.org/10.2307/249008>.

- Deloitte. (2021). The future of audit: An evolving financial reporting ecosystem in Singapore. Deloitte. Retrieved January 12, 2024 from <https://www2.deloitte.com/content/dam/Deloitte/sg/Documents/cxo-programs/sg-cxo-future-of-audit.pdf>.
- FasterCapital (2024, April 14). *Auditing skills: Auditing in the Digital Age: Leveraging Technology for Efficiency*. FasterCapital. Retrieved May 20, 2024 from <https://fastercapital.com/content/Auditing-skills--Auditing-in-the-Digital-Age--Leveraging-Technology-for-Efficiency.html>.
- Friedlich, M. (2024, March 12). *Audit's digital revolution: how technology is reshaping the industry*. Wolters Kluwer. Retrieved April 8, 2024 from <https://www.wolterskluwer.com/en/expert-insights/audits-digital-revolution-how-technology-is-reshaping-the-industry>.
- Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2022). A primer on partial least squares structural equation modeling (*PLS-SEM*) (3rd ed.). Thousand Oaks: Sage.
- Kartikasary, M., Laurens, S., & Sitinjak, M. (2021). Factors affecting the use of generalized audit software in audit process in Indonesia. *Accounting*, 7(4), 819-824.
- Kim, H. J., Kotb, A., & Eldaly, M. K. (2016). The use of generalized audit software by Egyptian external auditors: The effect of audit software features. *Journal of Applied Accounting Research*, 17(4), 456-478. <https://doi.org/10.1108/jaar-10-2015-0079>.
- Mahzan, N., & Lymer, A. (2014). Examining the adoption of computer-assisted audit tools and techniques: Cases of generalized audit software use by internal auditors. *Managerial Auditing Journal*, 29(4), 327-349. <https://doi.org/10.1108/MAJ-05-2013-0877>.
- Malaysian Ministry of Education Malaysia. (2018). TVET 4.0 Framework (2018-2025). Retrieved January 5, 2024 from <https://www.mypolycc.edu.my/index.php/muatturun/penerbitan/download/2-penerbitan/111-tvet-4-0-framework-2018-2025>.
- Musyaffi, A. M., Mulyani, S., Suraida, I., & Sukmadilaga, C. (2021). Lack of readiness of digital banking channel acceptance: Study on TAM 3 and technology readiness. *Academy of Strategic Management Journal*, 20, 1-18.
- Normahazan, N. N., Mohamed, I. S., & Rozzani, N. (2020). Drivers contributing to the implementation of generalized audit software (GAS) within audit firms in Malaysia. *Business and Economic Research*, 10(2), 341-354. <https://doi.org/10.5296/ber.v10i2.16862>.
- Popoola, O. M. J., & Jamel, N. E. S. M. (2020). Examining public acceptance choice causes on sales and service tax implementation in Malaysia. *Problems and Perspectives in Management*, 18(4), 228-246.
- PricewaterhouseCoopers. (2015). Data driven: What students need to succeed in a rapidly changing business world (White paper). Pwc. Retrieved March 14, 2024 from <https://www.pwc.com/us/en/faculty-resource/assets/PwC-Data-driven-paper-Feb2015.pdf>.
- Purnamasari, P., Amran, N. A., & Hartanto, R. (2022). Modelling computer assisted audit techniques (CAATs) in enhancing the Indonesian public sector. *F1000Research*, 11. <https://doi.org/10.12688/f1000research.121674.1>.
- Raman, P., & Aashish, K. (2022). Gym users: an enabler in creating an acceptance of sports and fitness wearable devices in India. *International Journal of Sports Marketing and Sponsorship*, 23(4), 707-726. <https://doi.org/10.1108/ijsms-08-2021-0168>.
- Sekaran, U., & Bougie, R. (2016). *Research methods for business: A skill building approach*. John Wiley & Sons.
- Sekretariat Majelis Tvet Negara. (2024). Dasar TVET Negara 2030. Putrajaya. Retrieved April 8, 2024 from [https://mohon.tvet.gov.my/manual/MTVET\\_DASAR\\_TVET\\_NEGARA\\_2030.pdf](https://mohon.tvet.gov.my/manual/MTVET_DASAR_TVET_NEGARA_2030.pdf).
- Silva, G. M., Dias, Á., & Rodrigues, M. S. (2022). Continuity of use of food delivery apps: An integrated approach to the health belief model and the technology readiness and acceptance model. *Journal of Open Innovation: Technology, Market, and Complexity*, 8(3), 114. <https://doi.org/10.3390/joitmc8030114>.
- Vitali, S., & Giuliani, M. (2024). Emerging digital technologies and auditing firms: Opportunities and challenges. *International Journal of Accounting Information Systems*, 53, 100676. <https://doi.org/10.1016/j.accinf.2024.100676>.
- Yang, C., Yan, S., Wang, J., & Xue, Y. (2022). Flow experiences and virtual tourism: The role of technological acceptance and technological readiness. *Sustainability*, 14(9), 5361. <https://doi.org/10.3390/su14095361>.
- Yeap, C. F., Suhaimi, N., & Nasir, M. K. M. (2021). Issues, challenges, and suggestions for empowering technical vocational education and training education during the COVID-19 Pandemic in Malaysia. *Creative Education*, 12(8), 1818-1839. <https://doi.org/10.4236/ce.2021.128138>.