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Accountancy Students' Familiarity with Accounting Information Systems and Other Technologies Used in the Workplace

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ABSTRACT

This paper intends to assess the accounting students' familiarity with the different accounting software and other technologies used in the workplace. The results show that the students are strong in areas related to the use of different office software applications like Microsoft Word, Google Docs, Microsoft Excel, Google Sheets, Microsoft PowerPoint, and Google Presentation. They are also very familiar with two operating systems like Android and IOS and three types of office productivity software like Google Forms, Gmail, and Microsoft OneNote. They are very familiar with Google Meet as a communication and collaboration software and cloud storage like Microsoft OneDrive, Google Drive, and Apple iCloud. They are also using Google, YouTube, Amazon, and Facebook to search for information.

The students however are still not very familiar with accounting information systems and other technologies used in the workplace except with Excel and Microsoft Access where they are a bit familiar with. They are also not familiar with emerging technologies like cloud computing, big data and data analytics, artificial intelligence, Blockchain, and distributed ledgers. This knowledge and skill areas need to be strengthened for them to be better prepared when they join the labor marketplace.

Keywords: accountancy, familiarity, basic technology knowledge, accounting information system.

1. INTRODUCTION

Technology is advancing at a rapid pace and this leapfrog of technology appears unstoppable. The accounting profession is not spared from the transformational wave of emerging technologies; an impetus for universities to make accounting students better prepared when they go to the workplace. According to Ackerman (2020) "The world has changed, and the accounting profession is changing with it. Universities and colleges need to catch up."

Effective September 2019, the Association of Chartered Certified Accountants (ACCA) has added new technology-related topics in the Foundations in Accountancy/ Accountant in Business (FAB/AB) syllabus. This FAB/AB syllabus is adopted completely by CamEd Business School in its Principles of Management (MGMT 201) subject. These new topics cover the impact of Financial Technology (FinTech) on accounting systems which includes cloud computing, automation, and artificial intelligence (AI), Big data and data analytics, Blockchain technology, and cybersecurity. In 2020, ACCA has changed the name of FAB/AB paper to FBT/BT (Foundations in Accountancy/Business and Technology).

It is apparent that the rapid pace of technology development requires accountants to keep on developing new competencies. According to the American Institute of Certified Public Accountants (AICPA) board chairman Tracey Golden, "we expect new CPAs to begin their journey with the right overall skill sets." "Becoming a CPA means you have a skill set that transcends all of the businesses because when you know the language of business, you can do many, many things" (Tysiac, 2020).

In view of this right overall skill sets requirement for CPAs, we cannot evade asking how ready are accounting students when they leave school and join the workforce? The answer to this question requires baseline information from supply and demand sides, as well as appropriate interventions which may include an internship, and pre-graduation competency assessment.

This study is undertaken to assess the familiarity of the second-year students of CamEd Business School with the accounting software and other technologies

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commonly used in the workplace. This study focuses on students' level of familiarity with different accounting software, the emerging technologies added to the course content of paper BT, the application they have tried using in search for information, the operating systems, the office application, the office productivity software, communication or collaboration software, and the cloud storage that are used in the workplace today. The result of this study may serve as baseline information in developing tech-related competencies of the students during their remaining years in school.

2. LITERATURE REVIEW

Many studies and articles have been written about the effects of technology on the accounting industry and how it transforms the role of accountants and auditors. The following related studies and literature have been reviewed which have bearing to this paper.

The study of Byungura et.al., (2018) entitled Familiarity with Technology among First-Year Students in Rwandan Tertiary Education showed that the "majority of participants are not familiar with technology and never had any previous exposure to eLearning systems and that while smartphones are the most accessed, owned and used tools by respondents, they rarely or never used them for learning activities." It also indicates that the students may have different degrees of familiarity with new technologies depending on their prior experience with computer-based tools.

Basic technologies accounting students must learn

Another study entitled Information Technology Knowledge and Skills Accounting Graduates Need shows that "students are better trained in word-processing and knowledge of communications software skills, yet employers expect entry-level accounting graduates to possess accounting packages knowledge and spreadsheet competencies." Considering the technological advancement and its impact on the business sector, this result is useful in reviewing the content of the curriculum of the accountancy course to make it more responsive to the needs of the businesses' needs of employers (Sithole, 2018).

O*NET OnLine (2020) has listed the following technology skills for the positions of Bookkeeping, Accounting, and Auditing Clerks:

- Accounting software — Fund accounting software; Intuit QuickBooks; Sage 50 Accounting; Tax software
- Compliance software — Corporate Responsibility System Technologies Limited CRSTL Compliance Positioning System; Financial compliance software; FLS eDP.Payrolltax; Paisley Cardmap
- Database user interface and query software — Data entry software; Microsoft Access; Oracle software; Sage 100 Contractor
- Enterprise resource planning ERP software — Microsoft Dynamics; Oracle JD Edwards EnterpriseOne; Sage 100 ERP; SAP
- Financial analysis software — Delphi Technology; Oracle E-Business Suite Financials; Paisley AutoAudit; RSM McGladrey Auditor Assistant

It identified the "hot technology" which refers to the technology requirement frequently included in employer job postings as the Intuit QuickBooks, Data entry software, Microsoft Access, Oracle software, ERP software, Microsoft Dynamics, EnterpriseOne, and SAP (O*NET, 2018).

The dissertation written by Sandifer (2018) entitled Knowledge, Technical Skills, and Employability Skills Required of Accounting Graduates: Perceptions of Certified Public Accountants in Mississippi has determined the knowledge, technical skills, and employability skills required of accounting graduates in the workforce as perceived by Mississippi CPAs. It also determined if recent accounting graduates possessed the knowledge and skills deemed important as perceived by CPA hiring managers. The results showed that employers perceive that accounting graduates do not fully possess the knowledge and skills deemed important by employers but, graduates do possess computer skills/information technology skills, teamwork/group interaction skills, and professional attitude/professional demeanor.

Accounting Robert Half (2020), up-to-date technology expertise is needed if a person wants to advance in the accounting job search as well as in his/her accounting career. The following technology-related accounting skills are in demand by many employers:

- Advanced Excel ability
- Enterprise resource planning (ERP) experience (e.g., SAP, Oracle)
- Expertise in big data analysis, advanced modeling techniques, and SQL
- Knowledge of business intelligence software (e.g., IBM Cognos)
- Microsoft Visual Basic capability

- Aptitude with Hyperion (for the analyst and financial reporting roles)
- Microsoft Visual Basic skills
- Knowledge of QuickBooks (for positions with small and midsize firms)

Sandifer (2018) cited the research of O'Banoon (2006) which states that employers find the recent college graduates not prepared for the workforce and a skills gap exists. Sandifer (2018) also cited the work of Altarawneh (2016) which indicates that accounting graduates do not have the skills needed when entering the workforce and the work of Nanduri (2017) that the skills gap is costing money to employers.

The study conducted by Rufino et.al (2018) entitled Competency Requirements for Professional Accountants: Basis for Accounting Curriculum Enhancement showed that Information and technology knowledge was occasionally used both in partnership and corporation, but was almost always used both in sole proprietorship and cooperative forms of organization. The findings further showed that information technology (IT) knowledge and general knowledge were occasionally or not frequently used in work by the professional accountants because their company has available IT experts responsible for the effective operations of their system. However, it cited the works of Tam (2011) and Romney & Steinbart (2009) which said that "accountants have to know how to use the accounting computer system and understand how business transactions are recorded and updated since these are now done electronically."

Whether you are aiming to become an accountant or have been a certified public accountant for many years, there is a need to keep your knowledge of accounting technology up to date (Maryville University, 2019). Office workers are mostly using productivity software. Doyle (2019) suggested that there are some programs to focus on and learn which are important for the job or for a professional resume that will help a person get hired. The most basic batch of productivity software programs is Microsoft Office (MS) Suite. Among the most popular digital document/file software program to become familiar with are MS Word, Dropbox, Google Docs, Docusign, and PandaDoc, and the most popular presentation software programs to familiarize with are MS PowerPoint and Keynote.

Technology has enabled "accountants to now work from virtually anywhere." "This changing role of accountants requires new sets of skills and requires accountants to stay abreast of technological trends, be open to learning new technologies, and learning to optimize accounting software solutions and cloud-based apps to meet the needs of their organization" (Chan, 2019).

Tech Wire Asia (2019) reported that the recent survey of Chartered Financial Analyst (CFA) Institute showed that 50 percent of the finance professionals in the Asia Pacific region believe that emerging technologies will either replace or transformed significantly their jobs. Although finance professionals like brokers, hedge fund managers, and financial analysts are expected to grow by 16 percent in the next ten years, the jobs of accountants or auditors, research analysts, and stock sales agents are most likely to disappear. Dutta (2020) cited a worldwide survey conducted among 3000 accountants in 2019 where 90% of the respondents believe "that the accounting industry is going to enter in a cultural shift by the next decade." The shift will have effects on emerging technologies, business services, hiring practices, and work from home practices. More than 82% of accountant respondents are considering recruiting "new employees from a non-traditional background" and 62% of them believe that "the accounting training programs of today won't be enough to catch up to the accounting trends of 2030."

Accounting information systems and other technologies commonly used by businesses/organizations

The American InterContinental University (2018), stated that "accountants and auditors work with financial documents and efficiently and accurately organize large data sets; therefore, they must have a familiarity with a range of financial management and budgeting software, as well as Generally Accepted Accounting Principles (GAAP) and accounting processes." It has listed the following important technical skills for those students pursuing an accounting career, namely:

- Financial reporting and analysis (Brentmark Estate Planning Quickview, Delphi Technology, and Oracle E-Business Suite Financials software platforms)
- Financial statements and tax preparation software (ATX Total Tax Office, CCH ProSystem fx TAX, Intuit Lacerte, and Orrtax Software IntelliTax Classic)
- Account reconciliation (Intuit QuickBooks, Sage 50 Accounting, and Sageworks ProfitCents)

- Compliance software (ACCUCert, FLS eDP PAYROLLtax, Intrax ProcedureNet, and Paisley Cardmap)
- Spreadsheet software (Microsoft Excel, Google Sheets)
- Project management software (Microsoft SharePoint, Oracle Primavera Enterprise Project Portfolio Management)
- Enterprise resource planning software (Microsoft Dynamics, NetSuite ERP, Oracle PeopleSoft Financials, and SAP Business Objects)
- Database reporting software (ADP Super Report Writer, SAP Crystal Reports, and FileMaker Pro)

A survey from Accounting Today cited by Dutta (2020) showed that 58% of organizations are using a cloud-based accounting system. Accountancy Age publication was also cited about its perception that "from 2019 to 2024 the accounting software would take over the accounting industry." A few of these trending accounting software are QuickBooks, Xero, FreeAgent, Sage Business Cloud Accounting, and Gusto.

Emerging technology topics added by ACCA to the Paper F1 syllabus

Effective September 2019, ACCA has added new subject areas in the FAB/AB syllabus (BPP Learning Media Ltd., 2020). These are The impact of Financial Technology (Fintech) on accounting systems with the following objectives that students will be able to:

- describe cloud computing as a capability in accountancy and how it creates benefits for the organization;
- explain how automation and artificial intelligence (AI) in accounting systems can affect the role and effectiveness of accountants;
- describe how the application of big data and data analytics can improve the effectiveness of accountancy and audit;
- outline the key features and applications of Blockchain technology and distributed ledgers in accountancy;
- define cybersecurity and identify the key risks to data that cyber-attacks bring;
- identify and describe features for protecting the security of IT systems and software within business

The director and chief technology officer for IBM's Analytic Platform Emerging Technologies group stated that accountants in the future will need to effectively communicate business information to the technologists designing the AI-powered financial systems. To perform this role effectively, accountants will need to understand enough about how those systems work to collaborate with the data scientists and data engineers. Artificial Intelligence (AI) must learn the structure and nature of data as well as the context and meaning of the data to function properly. In a business setting, it requires domain experts, who provide deep knowledge of the business whose data are being automatically processed and analyzed by AI. "Accountants are domain experts, and that's the hardest skill to find." (Tysiac and Drew, 2018).

Technologies that will potentially lead to revolutionizing the accounting profession are data analytics, machine learning, AI, and blockchain (Tysiac and Drew, 2018).

Govil (2020) reported that AI will eliminate the repetitive tasks done by employees and increases access to readily available data. "Invisible accounting, continuous audit, and active insight" are the three advantages of AI. These will enable businesses to do real-time tracking of business operations, carry out continuous reconciliation controls, and do adjustments at the end of the financial period.

The research of Yanling Shi (2019) entitled The Impact of Artificial Intelligence on the Accounting Industry, presents that "artificial intelligence has entered the accounting field more and more deeply, which plays an important role in improving business efficiency, reducing work errors, preventing and controlling enterprise risks, improving enterprise competitiveness, and improving human resource efficiency. Artificial intelligence technology is like a double-edged sword. While promoting the development of accounting work, it will also cause accountants to face the crisis of unemployment in the workplace."

"The pervasiveness of information technology in businesses has altered the nature and economies of accounting activities. In particular, the emergence of cloud computing, extensible Business Reporting Language (XBRL), and business analytics in recent years have transformed the way companies report financial performance and make business decisions." Consequently, there is an increasing demand for accounting professionals particularly those with advance IT skills (Pan and Seow, 2016).

Donohoe (2019) said that the types of technology used in accounting at present are the following: Cloud computing accounting software, Optical character recognition software, Mobile accounting apps, Machine learning, and Digital currencies. More skills are required for accountants. They need to learn quickly the use of accounting software, carrying out data analysis, and importing data from various sources.

According to Maryville University (2019), the most important accountant technologies accounting students and accountants must be familiar with in 2019 are cloud computing, blockchain technology, and automated accounting technology. Eira (2020) also enumerated the key accounting trends accountants should know. These trends are: Automated accounting processes, the rise of accounting software solutions, outsourcing accounting functions, cloud-based accounting, focus on data analytics, Blockchain, utilizing social media, advisory services, the role of artificial intelligence, big data in accounting, and remote work setting.

An increasing number of businesses are now giving preference to accountants who have "extensive knowledge in analytics and data science" (Eira, 2020). According to Skoulding (2018), the majority of businesses believe that their operations could be fully automated in the next five years. It presented the results of the study conducted by the Association of International Certified Professional Accountants that "62% of businesses are preparing for this scale of automation, meaning their workers need to develop new skills to future-proof their careers going forwards." However, learning and development have not been prioritized as a big percentage of the respondents revealed not having undertaken any in-work learning during the last 12 months. Four out of ten respondents said they don't feel they need to improve their skills. These results emphasized that "not only does the UK need to solve this skills gap, but they also need to change the attitudes of the workforce in relation to the future."

Will technology replace accountants and auditors in the near future?

In 2018, Everatt wrote that by 2020, accounting works, as well as audits, payroll, tax, and banking, will be completely automated using AI technology. With automation, accountants will no longer perform manual processing and checking hence will have ample time to focus more on "legislative and compliance-oriented tasks" (Everatt, 2018). It is expected that there will be a reduction in the demand for accounting skills which could lead to unemployment of the "grassroots accountants" because the basic work of the accountant can be completed by intelligent financial software (Yanling Shi, 2019).

In Cambodia, however, there is an increasing need for accounting technicians as the majority of micro, small, and medium enterprises in the country have no proper accounting records of their business transactions. According to Chhay Lim (2020) "only 0.02% of micro-enterprises, 3.89% of small enterprises and 24.11% of medium enterprises have adequate book-keeping." These businesses need accounting technicians as their financial reports are needed when they borrow money from the bank or when they avail of government aid.

IFAC's executive director reported that based on the IFAC survey, 80% of the respondents said that "technology was affecting traditional accounting roles" (Prinsloo, 2020). According to Batstone (2019), the Chartered Professional Accountants of Canada (CPA Canada) conducted a six months in-person and on-line discussion with more than 1,200 CPAs and other stakeholders from Canada and around the world. Among the key findings are the following:

- "Accountants need to consider new ways of helping the organizations they serve unlock value. To do this, they need to consider how to identify, measure, and report on non-financial drivers of value including culture, brand, and sustainability."
- "Accountants need to drive organization agility and innovation. Mirroring this, the accountancy profession must also react quickly and innovatively to changes in the business environment, ensuring the profession continues to be relevant and responsive and to protect the interests of its members and the public."

When this question was asked during the interview: "Are accountants a dying breed?" Pavan Satyaketu, the managing director of Advaion consulting firm providing accounting, technology, and management advisory services in the United States, quickly answered "no." However, he was quoted saying that "in order to remain relevant and employed, future accountants and auditors will be forced to make better use of their interpersonal and analytical skills to supplement the continuous changes in automated

technology." He added that "In 20 years, we will have AI interpreting all of our work, but ultimately we'll need to relay that information to the clients. You're going to have to use your base knowledge and advisory skills, as well as interpersonal skills, to a much greater extent than today" (Hutchinson, 2019). The chairman of the industry body Hong Kong Securities Association, Gary Cheung Wai-Kwok however disagreed that technology will completely replace the human workforce in the financial sector. He said that "There are areas that require human intervention, which machines or AI will not comprehend," (Tech Wire Asia, 2019).

Jewers (2019) presented the result of the study undertaken by the Association of Accounting Technicians (AAT) which showed that two out of five members say that in their current role, they consider themselves as both a consultant and an adviser.

Andrew Williamson, the director of marketing and commercial at AAT, said that study results show "a fair chunk of our members recognize the evolving role of an accountant." "Accountants and bookkeepers are now seen as a vital part of any business, with research showing that 30 percent of small business owners viewing accountants as their most trusted advisers, and one in four (27 percent) admitting to asking their accountant for broader business advice" (Jewers, 2019).

Prinsloo (2020) said that "accountants today have to show up as true strategic partners, problem solvers, and change agents. To remain relevant, accountants can't just produce numbers; they are being called to tell the larger story behind the numbers and help solve societal needs in the process."

With automation, there will be less manual entry and accounting records can be updated as transactions take place. The use of accounting software saves the accountant's time in doing the manual entry. This could lead to companies needing fewer accounting professionals owing to improved efficiency brought about by automation. The advancement in technology however has shifted the role of the accountants to "analyzing financial data and advising management" (Donohoe, 2019).

"While the rules of finance remain the same, the rules of how the work is done are shifting. Accountants will become true changemakers" (Govil, 2020).

3. METHODOLOGY

Research subjects

This study utilized primary data collected online from 211 student respondents. It also included data from 88 businesses/organizations in Phnom Penh regarding accounting software and other technologies currently used by them. Of the 88 organizations, 35 were large, 13 were medium, 28 were small and 12 were micro-enterprises. The size category of these enterprises was based solely on the number of employees the respondents indicated in the questionnaire. The profile of the student respondents is presented in the next section of the methodology.

Profile of student respondents

This study includes 211 second-year students of CamEd Business School. There were 137 (64.9%) female and 74 (35.1%) male respondents (Figure 1)

Figure 1

Gender of student respondents

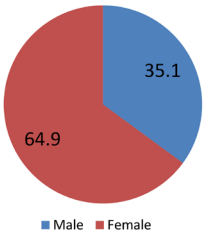
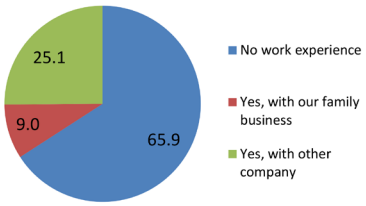


Figure 2

Whether the students have work experience

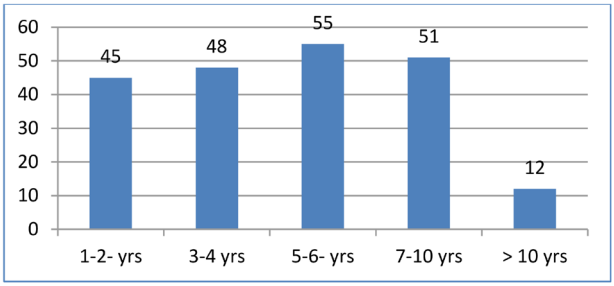


The majority (139; 65.9%) of the student respondents had no work experience; 53 (25.1%) students have work experience with their own family business. Only 19 (9%) have experienced working with another company (Figure 2).

In terms of the number of years the respondents have been using a computer or laptop, about 26% (55) reported they have been using a computer or laptop for 5-6 years; and 24.2% (51) said they have been using the computer or laptop for 7-10 years, and 21.3% (45) have been using a computer or laptop for one to two years (Figure 3).

Figure 3.

Number of years in using a computer/laptop



The students have been using different devices for their online classes. The data in Table 1 present that 76 students (36%) were using both a laptop and a smartphone; 41 (19.4%) were using only a laptop; and 32 (15.2%) were using three devices: a laptop, a smartphone, and a tablet.

Table 1

Devices used by the students for their online classes

Devices used by the students	f	%
Laptop and smartphone	76	36.0
Laptop only	41	19.4
Laptop, smartphone, tablet	32	15.2
Laptop, smartphone, tablet, desktop	19	9.0
Laptop, smartphone, desktop	17	8.1
Laptop, smartphone, Microsoft surface	7	3.3
Laptop, smartphone, desktop, tablet, Microsoft surface	4	1.9
Microsoft surface and smartphone	4	1.9
Microsoft surface only	3	1.4
Microsoft surface, Smartphone, tablet	3	1.4
Laptop, smartphone, iPad	2	0.9
Laptop and tablet	1	0.5
Laptop, smartphone, desktop, iPad	1	0.5
Desktop	1	0.5
Total	**211**	**100.0**

Data gathering tools and analysis

Two questionnaires were used to gather the primary data for this study. One is a one-page multiple-response questionnaire used to collect data on the different accounting software and other technologies used by businesses/organizations in Phnom Penh. Another questionnaire was prepared for the student respondents administered through the Google Classroom. This questionnaire collects data on the familiarity of students with the different accounting software and emerging technologies, including the applications they have tried using in search for information, the operating systems, the office application, the office productivity software, the communication or collaboration software, and the cloud storage that are used in the workplace. The purpose of the study was explained to the students and the completion of the questionnaire was voluntary. Only 211 students completed the questionnaire out of 322 expected respondents.

The data collected were analyzed using Microsoft Excel to determine the frequency count, sum, rank, mean, weighted mean, and percentages. The level of familiarity of the students was determined using the four-point scale ranging from Very Familiar with a score of 4; A Bit Familiar with a score of 3; Not Familiar but have heard of it (2); and First time to hear about it (1). The level of students' familiarity was interpreted based on the weighted mean scores shown below:

Weighted mean	Interpretation
4 - 3.25	Very familiar/with advanced skill
3.26 - 2.50	A bit familiar/with basic skill
2.51 - 1.75	Not familiar but have heard of it/no skill
1.76 - 1.0	First time to hear about it/no skill

To determine the students' familiarity with the Applications to search for information, the following weighted mean scores were used and interpreted as follows:

Weighted mean	Interpretation
3.0 - 2.35	Yes, have used it
2.34 - 1.68	Have not used but have heard of it
1.67 - 1.0	First time to hear about this function

The overall level of agreement by the students to the statement that "technology will replace accountants and auditors in the near future," was determined using the weighted mean scores with the following interpretations:

Weighted mean	Interpretation
5.0 - 4.20	Strongly agree
4.19 - 3.40	Agree
3.39 - 2.60	Unsure
2.59 - 1.80	Disagree
1.79 - 1.0	Strongly disagree

4. RESEARCH PROBLEM

This study was undertaken to determine the familiarity of the students with accounting software, the emerging technologies, the application they have tried using in search for information, the operating systems, the office application, the office productivity software, communication or collaboration software, and the cloud storage that are used in the workplace.

Specifically, it sought to answer the following questions:

1. What are the accounting information systems and other technologies commonly used by businesses/ organizations in Phnom Penh with regard to the following:

   1.1 Excel,

   1.2 QuickBooks,

   1.3 SAP F1,

1.4 Oracle/Flexcube,

1.5 Peachtree,

1.6 SunSystem,

1.7 Xero, and

1.8 Microsoft Access?

2. What are the accounting information systems and other technologies commonly used by large, medium, small, and micro-enterprises in Phnom Penh?

3. How familiar are the students with the following accounting information systems and other technologies used in the workplace:

3.1 Excel,

3.2 QuickBooks,

3.3 SAP F1,

3.4 Oracle/Flexcube,

3.5 Peachtree,

3.6 SunSystem,

3.7 Xero, and

3.8 Microsoft Access?

4. How familiar are the students with the following emerging technologies added by ACCA to paper FBT/BT (Foundations in Accountancy/Business and Technology) syllabus:

4.1 Cloud computing,

4.2 Automation and artificial intelligence (AI),

4.3 Big data and data analytics,

4.4 Blockchain technology and distributed ledgers, and

4.5 Cybersecurity?

5. How familiar are the accountancy students with the following basic technologies used in the workplace:

5.1 Software applications to search for information,

5.2 Operating systems,

5.2 Office software application,

5.3 Office productivity software,

5.4 Communication or collaboration software, and

5.5 Cloud storage?

6. What is the accountancy students' level of agreement with the statement that "Technology will replace accountants and auditors in the near future?"

5. RESULTS

The data collected were analyzed and shown in tables and figures and are presented following the sequence of the research problem.

1. Accounting information systems and other technologies commonly used by businesses/ organizations in Phnom Penh.

The multiple responses of the 88 respondent organizations show (Table 2) that the majority (82) of the businesses/organizations in Phnom Penh were using Excel and 60 of them were using QuickBooks. Excel refers to Microsoft Excel which is a spreadsheet program for data analysis and documentation (ITConnect, n.d.) while QuickBooks is an accounting software program for small businesses (Maki, 2020).

There were 33 businesses using Microsoft Access; 8 establishments were using SAP F1 and Oracle/ Flexcube respectively; while 7 were using Xero. Microsoft Access is a database management system that helps store information for reporting, analyze large amounts of information, and manage data more efficiently (OpenGate Software n.d.). SAP FI is a Financial Accounting module used in managing financial transactions of a small or large organization. It is used to store financial data and analyze the financial conditions of a company (Eshna, 2020). Flexcube is a universal core banking software developed by Oracle Financial Services designed for financial organizations and banks (Diceus, 2020) while Xero is online accounting software designed for small business to manage their finances anytime, anywhere from a computer or mobile device (Chrome web store, 2016).

These accounting information systems and other technologies commonly used by businesses/ organizations were ranked in the order of frequency count (Table 2). Excel was commonly used which was ranked 1st and QuickBooks ranked 2nd. The analysis of the data revealed further that of the 82 establishments that were using Excel, 52 of them were also using QuickBooks, and 33 of them were also using Microsoft Access.

Table 2

Accounting information systems and other technologies commonly used by businesses/ organizations

Software	Frequency (f)	Rank
Excel	82	1
QuickBooks	60	2
Microsoft Access	33	3
SAP F1	8	4.5
Oracle/Flexcube	8	4.5
Xero	7	6
Peachtree	1	7.5
SunSystems	1	7.5

2. Accounting information systems and other technologies commonly used by large, medium, small, and micro enterprises in Phnom Penh.

The data in Table 3 show that Excel and QuickBooks were the accounting software commonly used by all sizes of enterprises/organizations. Large enterprises were using SAP F1, ORACLE, Xero, Peach Tree, and Sun system. Micro enterprises were not using any of these software applications. In Cambodia, it was reported that only 0.02% of micro-enterprises have adequate bookkeeping (Lim, 2020). Although a small percentage of micro-enterprises are keeping records of their financial transactions, the data collected suggest that micro-enterprises are using QuickBooks and Excel for their record keeping.

Table 3

Accounting information systems and other technologies commonly used by large, medium, small, and micro enterprises

Software	Large	Medium	Small	Micro	Total
	n=35	n=13	n=28	n=12	n=88
Excel	34	12	25	11	82
QuickBooks	23	10	18	9	60
Microsoft Access	17	3	10	3	33
SAP F1	5	1	2		8
ORACLE	5		3		8
Xero	4	1	2		7
Peachtree	1				1
SunSystem	1				1

3. The familiarity of students with accounting information systems and other technologies used in the workplace

The level of students' familiarity with Excel, QuickBooks, SAP F1, Oracle, Peachtree, SunSystems, Microsoft Access, and Xero are shown in Figure 4.

1.1 Excel

Of the 211 student respondents, the majority (168; 79.6%) are a bit familiar and have basic skill in Excel, and only 39 (18.5%) are very familiar and have advance skill in this spreadsheet program; only 4 (1.9%) have no skill but have heard about it.

1.2 QuickBooks

The majority of the students (127; 60.2%) have no skill in QuickBooks but have heard about it and 54 (25.6%) have no skill and first time to hear about this accounting software package.

1.3 SAP F1

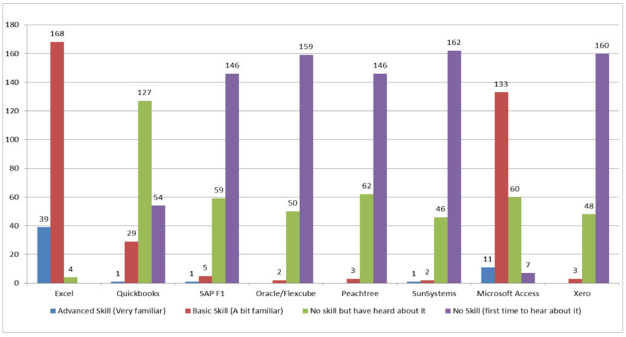
A big percentage of students (146; 69.2%) have no skill in SAP F1 and it's their first time to hear about this software. There were 59 (28%) who have no skill but have heard about it before.

1.4 Oracle/Flexcube

Oracle/Flexcube is an automated universal core banking software. Most of the students (159; 75.4%) have no skill and have heard about it for the first time; and 50 (23.7%) have no skill but have heard about it before.

Figure 4

Familiarity of students with accounting information systems and other technologies used in the workplace



1.5 Peachtree

Majority of the students (146; 69.2%) have no skill and just heard about Peachtree accounting software for the first time; while 62 (29.4%) have no skill but have heard about it before.

1.6 SunSystem

Most of the students (162; 76.8%) have no skill and have heard about SunSystems for the first time and 46 (21.8%) have no skill but have heard about this accounting software before.

1.7 Xero

Xero is an online accounting software. A big percentage of the students (160; 75.8%) have no skill and first time to hear about Xero; 48 (22.7%) have no skill but have heard about it before.

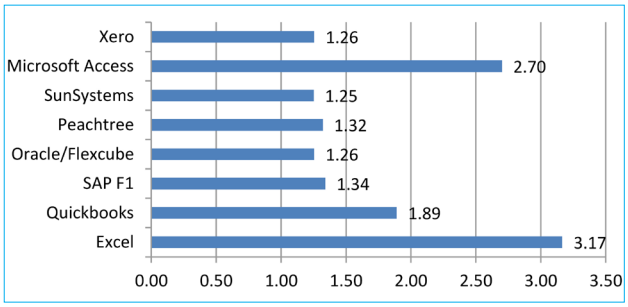
1.8 Microsoft access

Microsoft Access is a database management system. There were 133 (63%) students with basic skills (a bit familiar) in Microsoft Access. About 60 (28.4%) have no skill but have heard about it.

The weighted averages presented in Figure 5 show that students' familiarity with Excel and Microsoft Access are higher compared to other software in the list (3.17 and 2.70 respectively).

Figure 5

Weighted mean of the students' familiarity with accounting software and other technologies used in the workplace



The data in Table 4 indicate that overall, students are a bit familiar with Excel and Microsoft access; not familiar with QuickBooks but have heard of it; and first time to hear about SAP F1, Oracle, Peachtree, SunSystems, and Xero.

Table 4

Interpretation of the weighted means of students' familiarity with accounting software and other technologies used in the workplace

Accounting software and other technologies	Weighted mean	Interpretation
Excel	3.17	A bit familiar
QuickBooks	1.89	Not familiar but have heard of it
SAP F1	1.34	First time to hear about it
Oracle/Flexcube	1.26	First time to hear about it
Peachtree	1.32	First time to hear about it
SunSystems	1.25	First time to hear about it
Microsoft Access	2.70	A bit familiar
Xero	1.26	First time to hear about it

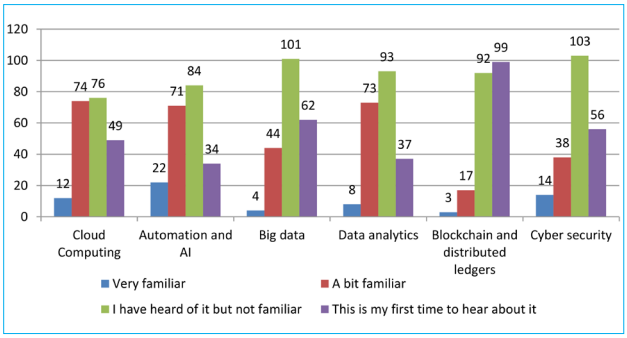
4. Familiarity of students with the emerging technology topics added by ACCA to paper FBT/BT (Foundations in Accountancy/Business and Technology) syllabus

The new topics added to the paper FBT/BT course syllabus were about the emerging technologies which include cloud computing, automation, and artificial intelligence (AI), big data and data analytics, Blockchain technology and distributed ledgers, and cybersecurity.

The students were asked whether they are familiar with these new technologies. The data were collected before these new topics were discussed in class which is part of chapter 9 of paper BT. The result shown in Figure 6 indicate that 76 (36.0%) of the students are not familiar with cloud computing but have heard about it; The same response was given by 84 (39.8%) students about Automation and AI; by101 (47.9%) students about Big Data; 93 (44.0%) students regarding Data Analytics; and 103 (48.8%) students about Cyber Security. There were 99 (47%) students who said that it's their first time to hear about Blockchain and Distributed Ledgers.

Figure 6

Familiarity of students with emerging technologies used in the workplace



The weighted means shown in Table 5 convey that generally, the students are not familiar but have heard about the emerging technologies like cloud computing, automation, and artificial intelligence (AI), big data and data analytics, and cybersecurity. However, it's their first time to hear about Blockchain technology and distributed ledgers.

Table 5

Interpretation of the weighted means of students' familiarity with emerging technologies used in the workplace

Emerging technologies topic added by ACCA to FBT/BT paper	Weighted mean	Interpretation
Cloud Computing	2.2	Not familiar but have heard of it
Automation and AI	2.4	Not familiar but have heard of it
Big data	2.0	Not familiar but have heard of it
Data analytics	2.2	Not familiar but have heard of it
Blockchain and distributed ledgers	1.6	First time to hear about it
Cyber security	2.0	Not familiar but have heard of it

5. Familiarity of accountancy students with the following basic technologies used in the workplace.

In this study, the basic technologies used in the workplace refer to the following: 1) Software applications to search for information; 2) Operating systems; 3) Office software application; 4) Office productivity software; 5) Communication or collaboration software, and 6) Cloud storage.

5.1 Software applications to search for information

The software applications used to search for information as used in this study were limited to Google, Youtube, Amazon, Bing, Udemy, Coursera, and Facebook.

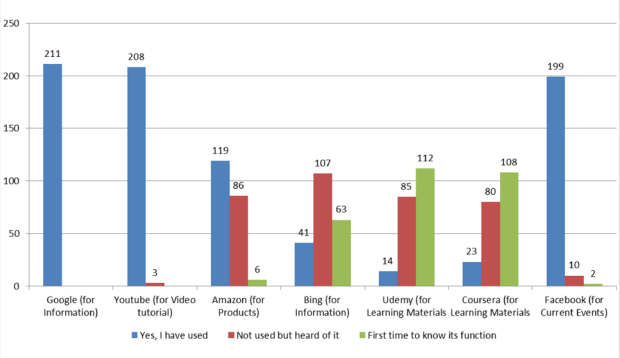
Google can be used to seek out information and Youtube can be used for a video tutorial. YouTube is a website that provides a service where users can upload videos and share these with others (Anderson, 2010). Amazon can be used to search for products. Bing is also called Bing Search, which is a search engine website that can be accessed by visiting Bing.com (George, 2020). Udemy and Coursera can be used to search for learning materials, and Facebook for the search of current events. Udemy is a leading online learning and teaching marketplace (Udemy, 2020) and Coursera is an online education provider that offers Massive Open Online Courses (Shah, 2020).

The students were asked whether they have tried using these applications; whether they have not used but have heard about them; or whether it's their first time to know about these software applications.

The results shown in Figure 7 indicate that all 211 (100%) respondents have used Google to search for information; 208 (98.6%) have used Youtube for video tutorial; 119 (56%) have used Amazon to search for products. Half of the students (50.7%) have not tried using Bing but have heard about it. More than half of the students reported that it's their first time to hear about Udemy (112; 53%) and Coursera (108; 51%) which can be used to search for learning materials. The majority of the students (199; 94.3%) have used Facebook to search for current events.

Figure 7

Familiarity of students with applications used to search for information



The weighted means shown in Table 6 indicate that students have used the following applications: i) Google to search for information (3.00), ii) Youtube for a video tutorial (2.98), iii) Amazon for searcing for products (2.53), and iv) Facebook for current events (2.93). However, it's their first time to hear about Udemy (1.54) and Coursera applications (1.60) for the search of learning materials.

Table 6

Interpretation of the weighted means of students' familiarity and use of applications used to search for information

Applications to search for information	Weighted mean	Interpretation
Google (for Information)	3.00	Yes, I have used
Youtube (for Video tutorial)	2.98	Yes, I have used
Amazon (for Products)	2.53	Yes, I have used
Bing (for Information)	1.90	Not used but heard of it
Udemy (for Learning Materials)	1.54	First time to hear its function
Coursera (for Learning Materials)	1.60	First time to hear its function
Facebook (for Current Events)	2.93	Yes, I have used

5.2 Operating systems

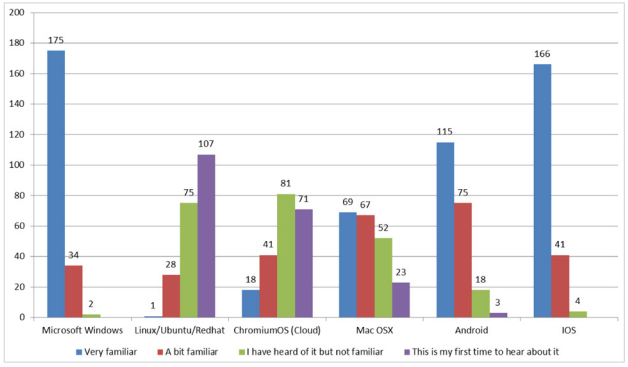
The operating systems used in the workplace, as used in this study, refer to i) Microsoft Windows, ii) Linux/Ubunto/Redhat, iii) Chromium OS (Cloud), iv) Mac OSX, v) Android, and vi) IOS (iPhone Operating System).

Microsoft Windows (also called Windows or Win) is a computer operating system developed and published by Microsoft Corporation to run personal computers (Computer Hope, 2019). Redhat and Ubuntu are two of the largely used and well-known Linux distros (distros is an abbreviation for distribution). "Redhat is an open-source, community-supported enterprise Linux distro which focused on the commercial applications. Ubuntu is also a community-supported open-source Linux distro" (Hasan, 2018). "The Chromium OS operating system is based on Linux and is designed to run on only specifically designed hardware such as Chromebooks. It also relies extensively on cloud-based applications" (Beal, n.d.). "Mac OS X (with X representing Roman numeral ten) is an operating system for Apple's Macintosh computers" (Norton, n.d.). "The Android platform is Google Inc.'s open and free software stack that includes an operating system, middleware and also key applications for use on mobile devices, including smartphones" (Beal, n.d.). IOS is an operating system developed by Apple for its company's mobile devices (Long, 2019).

The students were asked if they are familiar with these operating systems. The results shown in Figure 8 convey that majority (175; 83%) of the students were very familiar with Microsoft Windows; 115 (54.5%) were very familiar with Andriod; 166 (78.7%) were very familiar with IOS. However, there were 107 (50.7%) students who reported that it's their first time to hear about Linux/Ubunto/Redhat operating systems.

Figure 8

Students' familiarity with operating systems used in the workplace



The weighted means of the different operating systems (Figure 9 and Table 7) showed that overall, the students are very familiar with Microsoft Windows (3.8), IOS (3.8), and Android (3.4). They are a bit familiar with Mac OSX (2.9); not familiar but have heard about Chromium OS Cloud (2.0) and first time to hear about Linux/Ubunto/Redhat operating systems.

Figure 9

Weighted mean of the students' familiarity with operating systems used in the workplace

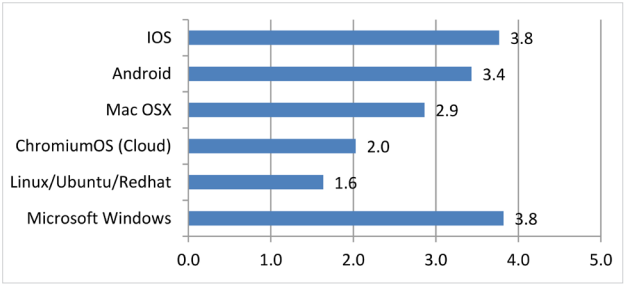


Table 7

Interpretation of the weighted means of students' familiarity with operating systems used in the workplace

Operating system	Weighted mean	Interpretation
Microsoft Windows	3.8	Very familiar
Linux/Ubuntu/Redhat	1.6	First time to hear about it
ChromiumOS (Cloud)	2.0	Not familiar but have heard of it
Mac OSX	2.9	A bit familiar
Android	3.4	Very familiar
IOS (iPhone Operating System)	3.8	Very familiar

5.3 Office software applications

In this study, the office software applications used in the workplace refer to the following: i) Microsoft Word (PC), ii) Google Docs (Web/Mobile), iii) Microsoft 365 Word (Web), iv) Microsoft Excel (PC), v) Google Sheets (Web/Mobile), vi) Microsoft 365 Excel (Web), vii) Microsoft PowerPoint (Desktop), viii) Google Presentation (Web/Mobile), ix) Microsoft 365 PowerPoint (Web), x) Open Office (PC Opensource), xi) Libre Office (PC Opensource), and xii) WPS (PC/Mobile).

Microsoft Word, Microsoft Excel, and Microsoft PowerPoint are among the core programs in Microsoft Office. Microsoft Word is used to create documents and Microsoft PowerPoint is used to create presentations (Ballew, 2020). Microsoft Excel

is a spreadsheet program for data analysis and documentation (ITConnect, n.d.) While Microsoft Office is the traditional standalone app that is installed on a computer, Office 365 is a cloud-hosted suite of productivity apps (web and mobile) provided by Microsoft like Word (Microsoft 365 Word), Excel (Microsoft 365 Excel), and PowerPoint (Microsoft 365 PowerPoint). Office 365 Online and the Office 365 Mobile Apps both offer a similar feature set to that of their counterpart which is Google Docs (Glenn, 2017). The alternative for Microsoft Office is Google Workspace (formerly G suite) which includes among others Google Docs, Google Sheets, Google Slides (Rosenberg, 2020). WPS stands for Writer, Presentation, Spreadsheets. WPS Office is a leading productivity Office Software Suite for PC and mobile devices (Wells, 2017).

The students were asked how familiar they are with these office software applications. The results presented in Figure 10 confer that majority (186; 88.2%) of the students are very familiar with Microsoft Word (PC), 184 (87.2%) are very familiar with Google Docs; 169 (80%) and 175 (82.9%) are very familiar with Microsoft Excel and Google Sheets respectively; 163 (77.3%) are very familiar with Microsoft PowerPoint: and 111 (52.6%) are very familiar with Google Presentation. On the other hand, 104 (49.3%) reported that it's their first time to hear about Libre Office; and 93 (44.0%) students gave the same response for WPS (PC/Mobile) software application.

Figure 10

Students' familiarity with office software applications used in the workplace

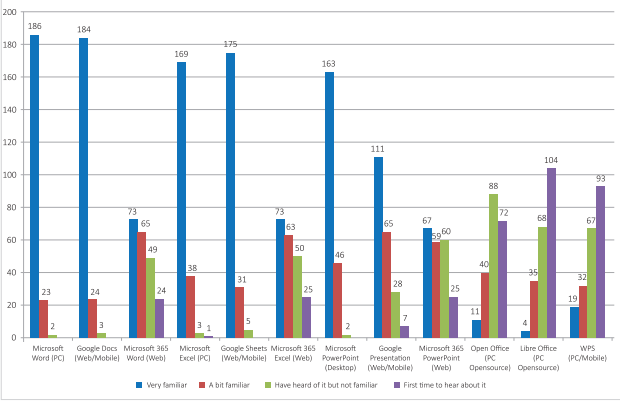


Figure 11 and Table 8 show that in terms of office applications used in the workplace, the students are very familiar with Microsoft Word, Google Docs, Microsoft Excel, Google Sheets, Microsoft PowerPoint, and Google Presentation. They are a bit familiar with Microsoft 365 Word, Microsoft 365 Excel, and Microsoft 365 PowerPoint. The students are not familiar but have heard of Open Office, Libre Office, and WPS

Figure 11

Weighted mean of the students' familiarity with office software application used in the workplace

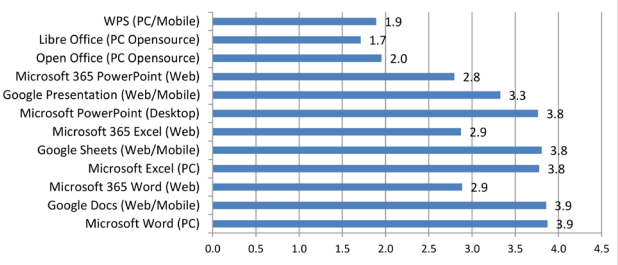


Table 8

Interpretation of the weighted means of students' familiarity with office software application used in the workplace

Office application	Weighted mean	Interpretation
Microsoft Word (PC)	3.9	Very familiar
Google Docs (Web/ Mobile)	3.9	Very familiar
Microsoft 365 Word (Web)	2.9	A bit familiar
Microsoft Excel (PC)	3.8	Very familiar
Google Sheets (Web/ Mobile)	3.8	Very familiar
Microsoft 365 Excel (Web)	2.9	A bit familiar
Microsoft PowerPoint (Desktop)	3.8	Very familiar
Google Presentation (Web/Mobile)	3.3	Very familiar
Microsoft 365 PowerPoint (Web)	2.8	A bit familiar
Open Office (PC Opensource)	2.0	Not familiar but have heard of it
Libre Office (PC Opensource)	1.7	Not familiar but have heard of it
WPS (PC/Mobile)	1.9	Not familiar but have heard of it

5.4 Office productivity software

"Productivity software is a category of application programs that help users produce things such as documents, databases, graphs, worksheets, and presentations" (Wigmore n.d.).

The different office productivity software used in the workplace refers to i) Microsoft Access (PC), ii) Libre

Office Base (PC Opensource), iii) Google Forms (Web/Mobile), iv) Microsoft 365 Forms (Web), v) Microsoft Outlook(PC), vi) Mozilla Thunderbird (PC), vii) Gmail (Web/Mobile), viii) Windows Live (Web), ix) Microsoft OneNote (PC/Mobile), x) Evernote (PC/Web/Mobile), xi) Google Keep (Web/Mobile), and xii) Clickup (PC/Web/Mobile).

Microsoft Access is a database management system that helps store information for reporting, analyze large amounts of information, and manage data more efficiently (OpenGate Software n.d.). LibreOffice is Free and Open Source Software. As an Open Source office suite, it includes several applications like Writer (word processing), Calc (spreadsheets), Impress (presentations), Draw (vector graphics and flowcharts), Base (databases), and Math (formula editing) (LibreOffice n.d.). "Microsoft Forms is a web-based application within an Office 365 suite that allows users to build quick intake forms and surveys via a very intuitive builder" (Zelfond, 2020). Microsoft Outlook is one of the core programs of Microsoft Office used to manage email and calendars (Ballew, 2020). Mozilla Thunderbird is a cross-platform, open-source e-mail client that competes with Microsoft Outlook and Eudora Mail (Beal, n.d.). "Windows Live is Microsoft's integrated suite of services and programs. It combines applications such as e-mail, instant messaging, and word processing with online services such as file sharing, blogs, and off-site file storage" (Crosby, 2020). "Evernote is a cloud-based software service designed for creating, organizing, and storing various media files." "Evernote keeps all your stuff stored in the cloud through your very own personal Evernote account" (Moreau, 2020). Google Keep is Google's version of a simple and easy-to-use note-taking app that you can use on your computer, or any iPhone or Android phone that syncs automatically to Google Drive (Delfino, 2019). ClickUp is cloud-based productivity software that can be used anywhere on any device whether on MAC/iOS, Android, Linux, or Windows (Tucker, 2020).

The students were asked whether they are familiar with these office productivity software. Figure 12 shows that the majority of the students are very familiar with Google Forms (166; 78.7%), Gmail (188; 89%), and Microsoft OneNote (122; 57.8%). Almost half of the students reported that it's their first time to hear about Libre Office Base (105; 49.7%), Mozilla Thunderbird (102; 48.3%), and Clickup (115; 54.5%).

Figure 12

Familiarity of students with office productivity software used in the workplace

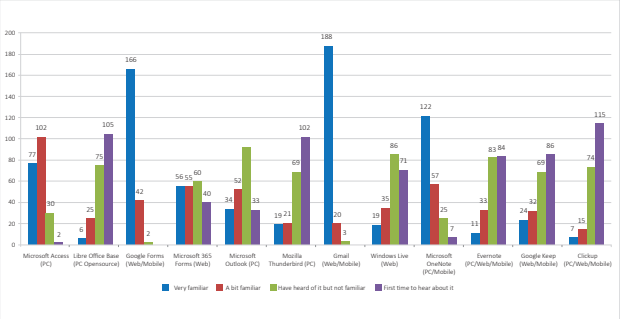


Figure 13 and Table 9 present the weighted means and interpretation of the weighted mean scores of students' familiarity with office productivity software. The results show that overall, the students are very familiar with Google Forms (3.8), Gmail (3.9), and Microsoft OneNote (3.4). They are a bit familiar with Microsoft Access (3.2) and Microsoft 365 Forms (2.6). They are not familiar but have heard about Microsoft Outlook (2.4), Mozilla Thunderbird (1.8), Windows Live (2.0), Evernote (1.9), and Google Keep (2.0). The students reported that it's their first time to hear about Libre Office Base (1.7) and Clickup (1.6).

Figure 13

Weighted mean of the students' familiarity with office productivity software used in the workplace

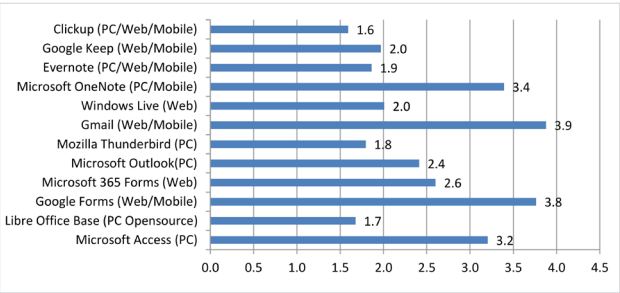


Table 9

Interpretation of the weighted means of students' familiarity with office productivity software used in the workplace

Office productivity software	Weighted mean	Interpretation
Microsoft Access (PC)	3.2	A bit familiar
Libre Office Base (PC Opensource)	1.7	First time to hear about it
Google Forms (Web/Mobile)	3.8	Very familiar
Microsoft 365 Forms (Web)	2.6	A bit familiar

Microsoft Outlook(PC)	2.4	Not familiar but have heard of it
Mozilla Thunderbird (PC)	1.8	Not familiar but have heard of it
Gmail (Web/Mobile)	3.9	Very familiar
Windows Live (Web)	2.0	Not familiar but have heard of it
Microsoft OneNote (PC/ Mobile)	3.4	Very familiar
Evernote (PC/Web/Mobile)	1.9	Not familiar but have heard of it
Google Keep (Web/Mobile)	2.0	Not familiar but have heard of it
Clickup (PC/Web/Mobile)	1.6	First time to hear about it

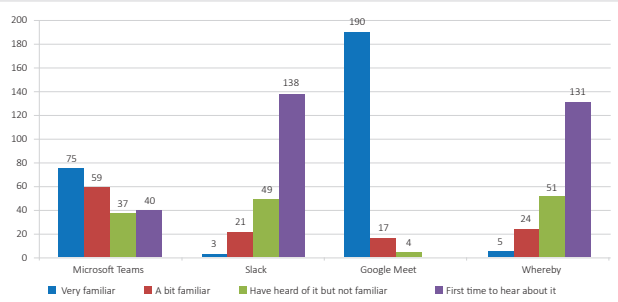
5.5 Communication or collaboration software

In this study, the communication or collaboration software used in the workplace relates to i) Microsoft Teams, ii) Slack, iii) Google Meet, and iv) Whereby. Microsoft Teams is a "chat-based workspace in Office 365" designed to enhance group work (Curry, 2019). Slack is a messaging program (a chatroom) used in the workplace to enable all members of the organization to communicate, plan schedules, and share documents and files (John, 2020). Google Meet is also known as Google Hangouts Meet is a video-chatting service that allows people in different locations to speak or share videos with each other. It is designed for professionals (John, 2020). Whereby is a collaboration tool used in hosting easy and reliable video meetings (Capterra, 2020).

The data in Figure 14 show that 190 (90%) of the students were very familiar with Google Meet. Students are very familiar with this communication or collaboration software because it is commonly used in their online classes. There were 75 (35.5%) students who were also very familiar with Microsoft Teams. However, the majority of the students indicated that it's their first time to hear about Slack (138; 65.4%) and Whereby (131; 62.0%).

Figure 14

Familiarity of students with communication or collaboration software used in the workplace



The weighted means shown in Figure 15 and Table 10 indicate that as regards communication or collaboration software, the students are very familiar (3.9) with Google Meet; a bit familiar (2.8) with Microsoft Teams; and first time to hear (1.5) about Slack and Whereby. Google Meet is generally used in school for online class meetings hence the students are very familiar with it.

Figure 15

Weighted mean of the students' familiarity with communication or collaboration software used in the workplace

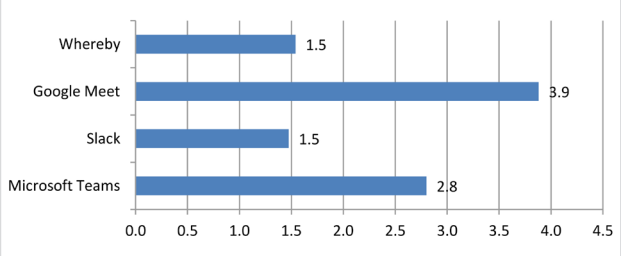


Table 10

Interpretation of the weighted means of students' familiarity with communication or collaboration software used in the workplace

Communication or collaboration software	Weighted mean	Interpretation
Microsoft Teams	2.8	A bit familiar
Slack	1.5	First time to hear about it
Google Meet	3.9	Very familiar
Whereby	1.5	First time to hear about it

5.6 Cloud storage

"Cloud storage offers a simple way to store and/ or move data in a secure and safe manner. Cloud storage allows individuals and businesses to store and retrieve computer files via an internet-connected device. Files stored "in the cloud" are utilized for group collaboration. Some of the most popular cloud storage providers are Apple (iCloud), Amazon (Amazon Web Services), Dropbox, and Google" (Frankenfield, 2020).

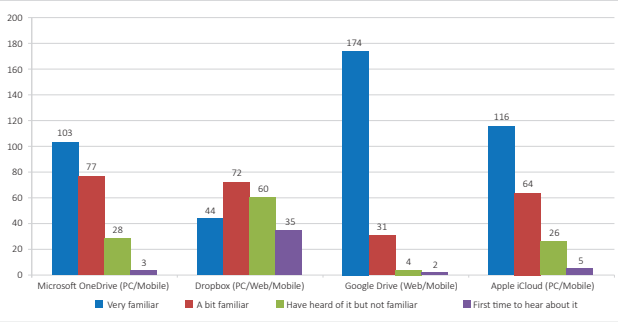
The cloud storage used in the workplace referred to in this study are the Microsoft OneDrive (PC/Mobile), Dropbox (PC/Web/Mobile), Google Drive (Web/ Mobile), Apple iCloud (PC/Mobile).

The students were asked which Cloud Storage they are familiar with. The result shown in Figure 16 presents that majority of the students are very familiar with Google Drive (174; 82.5%) and Apple iCloud (116;

54.9%). Almost half of the students are also very familiar with Microsoft OneDrive (103;48.8%).

Figure 16

Familiarity of students with cloud storage used in the workplace



The weighted means shown in Figure 17 and Table 11convey that in general, the students are very familiar with Google Drive (3.8); Apple iCloud (3.4); and Microsoft OneDrive (3.3); and a bit familiar with Dropbox (2.6).

Figure 17

Weighted mean of the students' familiarity with Cloud Storage used in the workplace

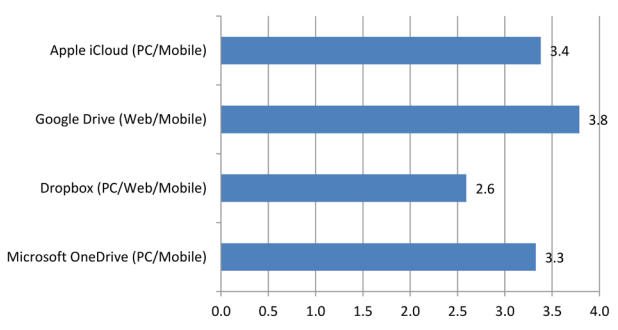


Table 11

Interpretation of the weighted means of students' familiarity with Cloud Storage used in the workplace

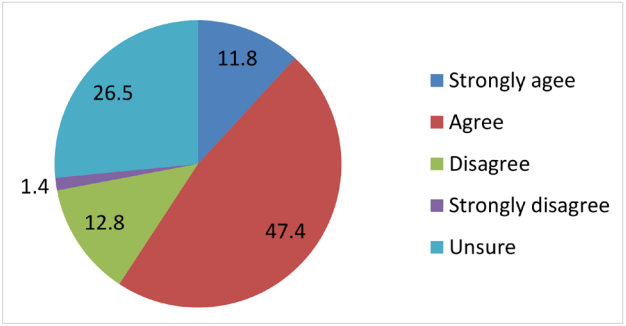
Cloud Storage	Weighted mean	Interpretation
Microsoft OneDrive (PC/ Mobile)	3.3	Very familiar
Dropbox (PC/Web/ Mobile)	2.6	A bit familiar
Google Drive (Web/ Mobile)	3.8	Very familiar
Apple iCloud (PC/Mobile)	3.4	Very familiar

6. Accountancy students' level of agreement with the statement that "Technology will replace accountants and auditors in the near future"

When the students were asked whether they agree that technology will replace accountants and auditors in the near future, 25 (11.8%) of them strongly agree to the statement; 100 (47.4%) agree; 27 (12.8%) disagree; 3 (1.4%) strongly disagree and 56 (26.5%) were unsure (Figure 18). The weighted mean of 3.55 indicates that largely, students agree that technology will replace accountants and auditors in the near future.

Figure 18

Students' level of agreement with the statement that "technology will replace accountants and auditors in the near future"



The students' perception that technology will replace accountants and auditors in the near future may pose a drawback on the desirability of the accounting course in the coming years. Based on the study of Gabbin et al. (2020), there was a significant drop in accounting enrollment from 2015 to 2019. One of the reasons for the apparent decrease in accounting enrollment was the "emergence of tech-related majors" which has attracted an increasing number of students. Also, employers of accounting graduates are "not willing to pay more to accounting majors because the CPA firms may no longer consider traditional accounting degrees to be as valuable as they once were."

6. SUMMARY

Overall, the accounting students are not very familiar with accounting information systems and other technologies used in the workplace however they are a bit familiar with Excel used in accounting and Microsoft Access. They are not familiar with the emerging technologies added by ACCA to FBT/BT paper such as cloud computing, big data and data analytics, artificial intelligence, Blockchain, etc. They are very familiar with two operating systems: Android and IOS. They are very familiar with six office software applications like Microsoft Word, Google

Docs, Microsoft Excel, Google Sheets, Microsoft PowerPoint, and Google Presentation. They are also very familiar with three office productivity software like Google Forms, Gmail, and Microsoft OneNote. Concerning communication and collaboration software, the students are very familiar with Google Meet. For cloud storage, the students are very familiar with Microsoft OneDrive, Google Drive, and Apple iCloud. The students have tried using Google, YouTube, Amazon, and Facebook. These are the common software applications students use to search for information.

Table 12 summarizes the students' familiarity with different accounting software, emerging, and basic technologies used in the workplace.

Table 12

Summary of students' familiarity with different accounting software, emerging, and basic technologies.

Accounting information systems and other technologies used in the workplace	**Very familiar**	**A bit familiar**	**Not familiar but have heard of it**	**First time to hear about it**
Excel				
QuickBooks				
SAP F1				
Oracle/Flexcube				
Peachtree				
SunSystems				
Microsoft Access				
Xero				
Emerging technologies added by ACCA to FBT/BT paper	**Very familiar**	**A bit familiar**	**Not familiar but have heard of it**	**First time to hear about it**
Cloud Computing				
Automation and AI				
Big data				
Data analytics				
Blockchain and distributed ledgers				
Cybersecurity				
BASIC TECHNOLOGIES	**Very familiar**	**A bit familiar**	**Not familiar but have heard of it**	**First time to hear about it**
Operating systems:				
Microsoft Windows				
Linux/Ubuntu/ Redhat				
ChromiumOS (Cloud)				
Mac OSX				
Android				
IOS (iPhone Operating System)				
Office software application:				
Microsoft Word (PC)				
Google Docs (Web/ Mobile)				
Microsoft 365 Word (Web)				
Microsoft Excel (PC)				
Google Sheets (Web/Mobile)				
Microsoft 365 Excel (Web)				
Microsoft PowerPoint (Desktop)				
Google Presentation (Web/ Mobile)				
Microsoft 365 PowerPoint (Web)				
Open Office (PC Opensource)				
Libre Office (PC Opensource)				
WPS (PC/Mobile)				
	Very familiar	**A bit familiar**	**Not familiar but have heard of it**	**First time to hear about it**
Office productivity software:				
Microsoft Access (PC)				
Libre Office Base (PC Opensource)				
Google Forms (Web/Mobile)				
Microsoft 365 Forms (Web)				
Microsoft Outlook(PC)				
Mozilla Thunderbird (PC)				
Gmail (Web/ Mobile)				
Windows Live (Web)				
Microsoft OneNote (PC/Mobile)				
Evernote (PC/Web/ Mobile)				

Google Keep (Web/ Mobile)				
Clickup (PC/Web/ Mobile)				
	Very familiar	**A bit familiar**	**Not familiar but have heard of it**	**First time to hear about it**
Communication or collaboration software:				
Microsoft Teams				
Slack				
Google Meet				
Whereby				
Cloud Storage:				
Microsoft OneDrive (PC/Mobile)				
Dropbox (PC/Web/ Mobile)				
Google Drive (Web/Mobile)				
Apple iCloud (PC/ Mobile)				

Software application students have tried using to search for information	**Yes, I have used**	**Have not used but heard of it**	**First time to know its function**
Google (for Information)			
Youtube (for Video tutorial)			
Amazon (for Products)			
Bing (for Information)			
Udemy (for Learning Materials			
Coursera (for Learning Materials			
Facebook (for Current Events)			

7. CONCLUSIONS AND RECOMMENDATIONS

The accountancy students are strong in areas related to the use of different office software applications like Microsoft Word, Google Docs, Microsoft Excel, Google Sheets, Microsoft PowerPoint, and Google Presentation. They are also very familiar with two operating systems like Android and IOS and three types of office productivity software like Google Forms, Gmail, and Microsoft OneNote. They are very familiar with Google Meet as a communication and collaboration software and cloud storage like Microsoft OneDrive, Google Drive, and Apple iCloud. They are also using Google, YouTube, Amazon, and Facebook to search for information.

The students however are still not very familiar with some accounting information systems and other technologies used in the workplace like Quickbooks, Peachtree, and SunSystem (except with Excel and Microsoft Access where they are a bit familiar with). They are also not familiar with emerging technologies like cloud computing, big data and data analytics, artificial intelligence, Blockchain, and distributed ledgers. Familiarity with these emerging technologies is important not only to make students more prepared for their ACCA computer-based exam but to be geared up for their future role in the workplace.

The school may require a part-time internship with academic credit for graduating students to enable them to acquire experience in a real work setting, build connections with other workers, observe office etiquette, and improve professional aptitude. Conducting a pre-graduation competency assessment on accounting software like QuickBooks and Excel may be helpful.

A similar study may be conducted among accounting students in other schools that offer accounting courses to assess the competency of students in a wider context

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9. APPENDICES - Questionnaires

APPENDIX 1. Questionnaire for students

Accountancy Students' Familiarity with Accounting Information Systems and Other Technologies Used in the Workplace

Section 1 of 3

Email address : _____

Name : _____

CamEd ID Number : _____

Group : _____

Gender : ☐ Male ☐ Female

Do you have any work experience?
- ☐ Yes, With our family business
- ☐ Yes, with other company
- ☐ No work experience

How many years have you been using a computer/laptop?
_____
_____
_____

What device/s are you using?
- ☐ Desktop
- ☐ Laptop
- ☐ Tablet
- ☐ Microsoft Surface
- ☐ Smartphone

Other _____

What other gadgets do you have?
- ☐ Headphones / Headset
- ☐ External Speakers
- ☐ External Microphone
- ☐ Printer
- ☐ Scanner
- ☐ Web Camera

Others _____

Section 2 of 3 : ACCOUNTING / AUDIT SOFTWARE AND OTHER TECHNOLOGIES

FAMILIARITY WITH ACCOUNTING/AUDIT SOFTWARE AND OTHER TECHNOLOGIES

How Skillful/familiar you are with the following software?

		Advanced Skill (Very familiar)	Basic skill (A bit familiar)	No skill but have heard about it	No skill (first time to hear about it)
1	Excel	☐	☐	☐	☐
2	QuickBooks	☐	☐	☐	☐
3	SAP F1	☐	☐	☐	☐
4	Oracle/Flexcube	☐	☐	☐	☐
5	Peachtree	☐	☐	☐	☐
6	SunSystems	☐	☐	☐	☐
7	Microsoft Access	☐	☐	☐	☐
8	Xero	☐	☐	☐	☐

How familiar are you with the following technologies?

		Very familiar	A bit familiar	I have heard of it but not familiar	This is my first time to hear about it
1	Cloud Computing	☐	☐	☐	☐
2	Automation and artificial intelligence (Ai)	☐	☐	☐	☐
3	Big data	☐	☐	☐	☐
4	Data analytics	☐	☐	☐	☐
5	Blockchain technology and distributed ledgers	☐	☐	☐	☐
6	Cyber security	☐	☐	☐	☐

Section 3 of 3 : BASIC TECH KNOWLEDGE

FAMILIARITY OF TECHNOLOGY AND SOFTWARE COMMONLY USED IN BUSINESS

Which Software APPLICATION have you tried using to search for Information?

		Yes, I have used	Not used but heard of it	First time to know its function
1	Google (for Information)	☐	☐	☐
2	YouTube (for Video tutorial)	☐	☐	☐
3	Amazon (for Products)	☐	☐	☐
4	Bing (for Information)	☐	☐	☐
5	Udemy (for Learning Materials	☐	☐	☐
6	Coursera (for Learning Materials	☐	☐	☐
7	Facebook (for Current Events)	☐	☐	☐

Which OPERATING SYSTEMS used in the workplace are you familiar with?

		Very familiar	A bit familiar	I have heard of it but not familiar	This is my first time to hear about it
1	Microsoft Windows	☐	☐	☐	☐
2	Linux/Ubuntu/ Redhat	☐	☐	☐	☐
3	ChromiumOS (Cloud)	☐	☐	☐	☐
4	Mac OSX	☐	☐	☐	☐
5	Android	☐	☐	☐	☐
6	IOS (iPhone Operating System)	☐	☐	☐	☐

Which OFFICE APPLICATION used in the workplace are you familiar with?

		Very familiar	A bit familiar	I have heard of it but not familiar	This is my first time to hear about it
1	Microsoft Word (PC)	☐	☐	☐	☐
2	Google Docs (Web/Mobile)	☐	☐	☐	☐
3	Microsoft 365 Word (Web)	☐	☐	☐	☐
4	Microsoft Excel (PC)	☐	☐	☐	☐
5	Google Sheets (Web/Mobile)	☐	☐	☐	☐
6	Microsoft 365 Excel (Web)	☐	☐	☐	☐
7	Microsoft PowerPoint (Desktop)	☐	☐	☐	☐
8	Google Presentation (Web/Mobile)	☐	☐	☐	☐
9	Microsoft 365 PowerPoint (Web)	☐	☐	☐	☐
10	Open Office (PC Opensource)	☐	☐	☐	☐
11	Libre Office (PC Opensource)	☐	☐	☐	☐
12	WPS (Writer, Presentation, Spreadsheets) (PC/Mobile)	☐	☐	☐	☐

Which OFFICE PRODUCTIVITY Software used in the workplace are you familiar with?

		Very familiar	A bit familiar	I have heard of it but not familiar	This is my first time to hear about it
1	Microsoft Access (PC)	☐	☐	☐	☐
2	Libre Office Base (PC Opensource)	☐	☐	☐	☐
3	Google Forms (Web/Mobile)	☐	☐	☐	☐
4	Microsoft 365 Forms (Web)	☐	☐	☐	☐
5	Microsoft Outlook(PC)	☐	☐	☐	☐
6	Mozilla Thunderbird (PC)	☐	☐	☐	☐
7	Gmail (Web/ Mobile)	☐	☐	☐	☐

8	Windows Live (Web)	☐	☐	☐	☐
9	Microsoft OneNote (PC/ Mobile)	☐	☐	☐	☐
10	Evernote (PC/ Web/Mobile)	☐	☐	☐	☐
11	Google Keep (Web/Mobile)	☐	☐	☐	☐
12	Clickup (PC/Web/ Mobile)	☐	☐	☐	☐

Which COMMUNICATION or COLLABORATION Software used in the workplace are you familiar with?

		Very familiar	A bit familiar	I have heard of it but not familiar	This is my first time to hear about it
1	Microsoft Teams	☐	☐	☐	☐
2	Slack	☐	☐	☐	☐
3	Google Meet	☐	☐	☐	☐
4	Whereby	☐	☐	☐	☐

Which CLOUD STORAGE used in the workplace are you familiar with?

		Very familiar	A bit familiar	I have heard of it but not familiar	This is my first time to hear about it
1	Microsoft OneDrive (PC/ Mobile)	☐	☐	☐	☐
2	Dropbox (PC/ Web/Mobile)	☐	☐	☐	☐
3	Google Drive (Web/Mobile)	☐	☐	☐	☐
4	Apple iCloud (PC/ Mobile)	☐	☐	☐	☐

Technological perspective of accounting students

Do you think technology will replace accountants and auditors in the near future?	☐ Strongly Agree ☐ Agree ☐ Unsure ☐ Disagree ☐ Strongly Disagree

APPENDIX 2 Questionnaire for businesses/ organizations

SHORT QUESTIONNAIRE ON

ACCOUNTING AND AUDIT INFORMATION SYSTEMS AND OTHER TECHNOLOGIES USED BY BUSINESSES/ ORGANIZATIONS IN PHNOM PENH

I. COMPANY INFORMATION:

NAME OF COMPANY: _____

ADDRESS: _____

Website (if any) _____

YEAR STARTED: _____

NUMBER OF EMPLOYEES: _____

FORM OF ORGANIZATION (please tick): ☐ Sole proprietorship ☐ NGO

☐ Government ☐ Partnership ☐ Limited company (PLC)/Corp

☐ Others: (pls specify) _____

II. ACCOUNTING/AUDIT INFORMATION SYSTEM AND OTHER TECHNOLOGIES USED

	Accounting/audit information system and other technologies used in your company	Please tick system used
1	EXCEL	☐
2	QUICKBOOK	☐
3	PEACH TREE	☐
4	SAP F1	☐
5	SUN SYSTEM	☐
6	ORACLE/FLEXICUBE	☐
7	XERO	☐
8	MICROSOFT ACCESS	☐
9	OTHERS (pls specify):.....	☐
10		☐
11		☐
12		☐
13		☐
14		☐
15		☐

NAME OF PERSON INTERVIEWED: _____
SIGNATURE: _____
POSITION: _____
CONTACT NUMBER: _____

Thank you very much!

How familiar are you with the following technologies?

		Very familiar	A bit familiar	I have heard of it but not familiar	This is my first time to hear about it
1	Cloud Computing	☐	☐	☐	☐
2	Automation and artificial intelligence (Ai)	☐	☐	☐	☐
3	Big data	☐	☐	☐	☐
4	Data analytics	☐	☐	☐	☐
5	Blockchain technology and distributed ledgers	☐	☐	☐	☐
6	Cyber security	☐	☐	☐	☐

Section 3 of 3 : BASIC TECH KNOWLEDGE

FAMILIARITY OF TECHNOLOGY AND SOFTWARE COMMONLY USED IN BUSINESS

Which Software APPLICATION have you tried using to search for Information?

		Yes, I have used	Not used but heard of it	First time to know its function
1	Google (for Information)	☐	☐	☐
2	YouTube (for Video tutorial)	☐	☐	☐
3	Amazon (for Products)	☐	☐	☐
4	Bing (for Information)	☐	☐	☐
5	Udemy (for Learning Materials	☐	☐	☐
6	Coursera (for Learning Materials	☐	☐	☐
7	Facebook (for Current Events)	☐	☐	☐

Which OPERATING SYSTEMS used in the workplace are you familiar with?

		Very familiar	A bit familiar	I have heard of it but not familiar	This is my first time to hear about it
1	Microsoft Windows	☐	☐	☐	☐
2	Linux/Ubuntu/ Redhat	☐	☐	☐	☐
3	ChromiumOS (Cloud)	☐	☐	☐	☐
4	Mac OSX	☐	☐	☐	☐
5	Android	☐	☐	☐	☐
6	IOS (iPhone Operating System)	☐	☐	☐	☐

Which OFFICE APPLICATION used in the workplace are you familiar with?

		Very familiar	A bit familiar	I have heard of it but not familiar	This is my first time to hear about it
1	Microsoft Word (PC)	☐	☐	☐	☐
2	Google Docs (Web/Mobile)	☐	☐	☐	☐
3	Microsoft 365 Word (Web)	☐	☐	☐	☐
4	Microsoft Excel (PC)	☐	☐	☐	☐
5	Google Sheets (Web/Mobile)	☐	☐	☐	☐
6	Microsoft 365 Excel (Web)	☐	☐	☐	☐
7	Microsoft PowerPoint (Desktop)	☐	☐	☐	☐
8	Google Presentation (Web/Mobile)	☐	☐	☐	☐
9	Microsoft 365 PowerPoint (Web)	☐	☐	☐	☐
10	Open Office (PC Opensource)	☐	☐	☐	☐
11	Libre Office (PC Opensource)	☐	☐	☐	☐
12	WPS (Writer, Presentation, Spreadsheets) (PC/Mobile)	☐	☐	☐	☐

Which OFFICE PRODUCTIVITY Software used in the workplace are you familiar with?

		Very familiar	A bit familiar	I have heard of it but not familiar	This is my first time to hear about it
1	Microsoft Access (PC)	☐	☐	☐	☐
2	Libre Office Base (PC Opensource)	☐	☐	☐	☐
3	Google Forms (Web/Mobile)	☐	☐	☐	☐
4	Microsoft 365 Forms (Web)	☐	☐	☐	☐
5	Microsoft Outlook(PC)	☐	☐	☐	☐
6	Mozilla Thunderbird (PC)	☐	☐	☐	☐
7	Gmail (Web/ Mobile)	☐	☐	☐	☐