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Technical Competencies Required by Accountants: An Analysis of Accounting Job Advertisements

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Abstract: The changing business environment raises questions about the skills that are a priority in the Indonesian labor market. This research focuses on technical competencies in accounting education by exploring the perspective of companies. The aim is to identify the technical competencies required for accountants through an analysis of accounting job advertisements. The study employs content analysis on 612 online job advertisements, with data subsequently subjected to non-parametric Kruskal-Walis testing. The findings reveal that information technology (IT) skills and financial reporting are the most sought-after technical competencies by companies. Specifically, accountants are expected to possess skills in using Microsoft Office packages and preparing corporate financial statements. Furthermore, the research identifies variations in the technical competency requirements for accounting positions. It is anticipated that this study's results will provide insights and self-reflection for accounting graduates regarding the technical competencies needed to enter the workforce. This, in turn, will enable accounting graduates to equip themselves with the necessary skills for seamless integration into their desired employment.

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INTRODUCTION

The changes in the business world due to globalization and technological advancements have created a demand for accountants to possess both technical skills and soft skills (Hossain et al., 2020; Parsons et al., 2020; Tsiligiris & Bowyer, 2021). Companies emphasize various skills when hiring professional accountants (Tan & Laswad, 2018). Market expectations for professional accountants are reflected in the concept of professional competence, which encompasses technical competencies, professional skills, as well as professional values, ethics, and attitudes (IES, 2019). However, research conducted by Jackling and De Lange (2009) and Kavanagh, Merie and Drennan (2008) indicates employer dissatisfaction with the skills possessed by accounting graduates. Companies view accounting and English business communication skills as crucial for accounting practice, yet educator primarily focus on teaching concepts, theories, and academic English (Ismail, 2018). Graduates' and employers' perception align on the importance of taxation and audit competencies, while disparities exist in financial accounting, management accounting, and information systems (Ngoo et al., 2015). This indicates a gap between the

skills acquired in universities and those required in the professional world (Azalia et al., 2021; Dolce et al., 2020).

Accounting education is seen as responsible for addressing the skills gap among graduates (Keevy, 2020). However, not all professional skills can be developed in the university setting (Howieson et al., 2014). Universities and companies have comparative advantages in developing professional knowledge and skills. The comparative advantage of accounting education lies in teaching technical accounting knowledge and skills (Berry & Routon, 2020; Rebele & Pierre, 2019). Without technical accounting competencies, prospective accountants cannot think critically and communicate effectively about accounting issues (Rebele & St. Pierre, 2019). Meanwhile, practical experience in companies is deemed effective in developing non-technical accounting skills (Lansdell et al., 2020; Samkin & Keevy, 2019). Therefore, academics, professional accounting bodies, and companies need to collaborate to bridge the skills gap among accounting graduates (Dunbar et al., 2016). The importance of feedback from companies to evaluate accounting education programs, as well as to investigate the extent to which education equips students with market-relevant skills, cannot be overstated (Anis, 2017). Adopting a corporate perspective on recruitment requirements enables accounting educators to prioritize teaching the most useful workplace skills (De Lange et al., 2006).

The International Accounting Education Standards Board (IAESB), as an independent standard-setting body, has developed and established standards in the field of accounting education, encompassing technical competencies, professional skills, values, ethics, and professional attitudes (IES, 2019). This research refers to international education standards, specifically IES 2, regarding the technical competencies required to qualify as a professional accountant. IES 2 focuses on technical competencies and core knowledge, including accounting, finance, and related knowledge, organizational, economic and business knowledge, and information technology knowledge (IES, 2019). IES 2 serves as a guide for accountants to apply technical competencies while performing their roles as professionals (IES, 2019). Thus, accountants can protect public interests, enhance work quality, and maintain the credibility of the accounting profession (IES, 2019).

Possessing technical competencies is crucial for supporting an accountant's career. Technical competencies are related to the mastery of accounting knowledge, including 1) financial accounting, covering the preparation and analysis of financial statements and financial forecasting, 2) management accounting, encompassing variance analysis and budgeting, 3) auditing, involving internal control and risk assessment, 4) taxation, such as basic tax principles, 5) finance, like financial analysis, 6) strategy and governance, dan 7) information technology, such as spreadsheet tools (Ngoo YT et al., 2015; Uwizeyemungu et al., 2020). Technical competencies are valuable throughout an accountant's career and continue to evolve with career experience (Murphy & Hassall, 2020). McMurray et al. (2016) explored workplace skills from an employer perspective and highlighted the importance of technical skills in enhancing employability. Students view technical skills as a crucial quality required in accounting jobs (De Lange et al., 2006). Accounting graduates need to obtain competency certificates to meet job requirements (Bergner et al., 2020). Competency certificates in the workplace include MYOB certification, Accounting Technician Competency Test, tax certification, and SAP certification (Anjelina et al., 2020).

Technical skills required for business graduates include numerical proficiency, basic computer knowledge, and software skills to effectively and efficiently run businesses (Ayoubi et al., 2017). Digital transformation has brought about changes and adaptations in the use of human, technological, and machine resources across various professions, including the accounting profession (T. Wahyuni, 2020). Business transaction processing has significantly changed with the development of computers and software (Leitner-hanetseder et al., 2021). Lage and complex business transactions can now be handled by technological systems, leaving accountants to analyze data outcomes and make decisions (Özcan & Akkaya, 2020). Therefore, accountants are encouraged to continually enhance their abilities and knowledge, not limited to traditional accounting but also including information technology (Damayanti, 2019). New skills that accountants need to develop include cloud computing, big data analysis, blockchain technology, the Internet of Things, and Artificial Intelligence (Moll & Yigitbasioglu, 2019). Companies require proficiency in Microsoft Office applications, specifically Word, PowerPoint, Outlook, and Excel, as these skills are

deemed crucial (Kearns, 2014; Spraakman et al., 2015). Business graduates need knowledge of web-based applications such as Enterprise Resource Planning, as these skills are highly valuable in the workplace (Hossain et al., 2020).

Furthermore, accountants also need professional skills to support their career. The professional skills required for accountants include intellectual, interpersonal and communication, personal, and organizational skills (IES, 2019). Ghani and Suryani (2020) found that interpersonal and communication skills are considered the most important skills for accountants in Indonesia, with technical skills limited to information technology mastery. Interpersonal communication skills required for accountants include verbal and written communication, interpersonal skills, and emotional self-control (Wahyuni et al., 2018). Meanwhile, accounting technical competencies include information technology proficiency, financial reporting, management accounting, audit and assurance, taxation, and governance and finance (Ngoo et al., 2015; Uwizeyemungu et al., 2020). Research related to the competencies required for accountants has been conducted by several researchers (Dunbar et al., 2016; Ghani & Suryani, 2020; Ngoo et al., 2015; Tan & Laswad, 2018; Uwizeyemungu et al., 2020; Wahyuni et al., 2018). However, studies on the technical competencies required for accountants are limited in Canada and Malaysia, prompting the need for research in other countries such as Indonesia. Therefore, this study aims to fill the research gap concerning the technical competencies needed for accountants in Indonesia and provide insights into job opportunities for accounting graduates based on size, location, industry type, and the experience and certifications required by employers.

This research is grounded in the job market signaling theory proposed by Spence (1973). Signaling theory is useful for describing behavior when two parties (individuals or organizations) have access to different information. The sender will choose how to communicate signals to the receiver, while the receiver decides how to interpret these signals. This dynamic is evident in the job market when organizations post job vacancies and individuals apply for positions (Connelly et al., 2011). Through job advertisements, employers send signals related to the expectations and job requirements that prospective applicants should possess. In line with this, Pejic-Bach et al. (2020) state that job advertisements are a relevant source of information regarding the skills and knowledge required, offering insights into the job profile.

Through an investigation of the technical competencies outlined in accounting job advertisements, this study aims to identify the technical competencies required by accountants and the job opportunities for accounting graduates in Indonesia. This research is crucial as it can enhance students' understanding of the technical skills most needed by companies and provide an overview of current job prospects for accounting graduates. This study can assist accounting graduates in preparing and delving into the technical competencies needed to secure their desired employment.

LITERATURE REVIEW AND HYPOTHESES

Job Market Signaling Theory

The Theory of job market signaling emerges from the exchange of information between two parties in situations of asymmetric information (Spence, 1973). Signaling theory is useful for describing behavior when two parties (individuals or organizations) have access to different information. The sender chooses how to communicate or signal this information to the receiver, while the receiver decides how to interpret these signals. This dynamic is evident in the job market, where organizations post job vacancies, and individuals apply for positions (Connelly et al., 2011). Signaling theory essentially deals with reducing information asymmetry between two parties (Spence, 2002). For instance, Spence's (1973) research in the job market demonstrates how job seeker might engage in behavior to reduce information asymmetry hindering employers' candidate selection abilities. Spence describes how high-quality job candidates distinguish themselves from low-quality job candidates through higher education as a required signal.

This research is grounded in the content analysis of accounting job advertisements, which can be associated with job market signaling theory. Job advertisements are a relevant source of information about the skills and knowledge required, offering insights into the job profile (Pejic-Bach et al., 2020). This study analyzes accounting job advertisements where employers signal the requirements and expectations related

to the technical competencies that job applicants should possess. Through the signaling of technical competencies in job advertisements, job seekers can understand the competencies needed in the workplace.

Technical Competence

Technical skills, also known as hard skills, encompass abilities and knowledge related to the technical aspects of performing tasks (Pang et al., 2019). Hard skills pertain to observable skills and behaviors. Technical skills involve the capacity to use specific knowledge, procedures, methods, and techniques to accomplish a task, acquired through education, training, and experience (Widodo, 2017). They serve as the foundation for success since one can execute tasks proficiently based on the technical skills possessed (Budiningsih et al., 2020). Technical skills refer to the application of knowledge and abilities required by specific professions; for instance, an accountant must master accounting techniques, financial knowledge, and computer or information technology proficiency. Indicators of technical competence include utilizing technical tools, executing procedures, and handling job disruptions (Adrianto, 2011). Examples of hard skills encompass the ability to use Microsoft office (Minh et al., 2017), financial knowledge and skills (Mulatsih et al., 2013), and the ability to compile reports and formulate hypotheses (Suprianto et al., 2017). Technical skills encompass general skills like literacy, numeracy, and expertise in information technology, as well as specific skills related to accounting tasks (IFAC, 2003).

The International Education Standard (IES) 2, Initial Professional Development-Technical Competence, elucidates on the technical competence required by professional accountants. Technical competence is the ability to apply professional knowledge in implementing established standards. Relevant technical skills in the accounting profession involve understanding standards and guidelines such as Generally Accepted Accounting Principles (GAAP), Generally Accepted Audit Standards (GAAS), and Internal Revenue Code (IRC). Accounting technical competence includes: Financial accounting and reporting, Management accounting, Finance and financial management, Taxation, Audit and assurance, Governance, risk management and internal control, Business laws and regulations, Information and communications technologies, Business and organizational environment, Economics, and Business strategy and management (IES, 2019).

Accounting skills are considered crucial in several industrial sectors (Regan & Killian, 2021). Accountants utilize their skills to beneficially impact companies, such as enhancing tax compliance and reducing tax avoidance (Doyle et al., 2022). Tax accountants adjust financial statements to meet the company's tax obligations (Vokshi, 2018). In addition to tax expertise, tax accountants require knowledge of financial reporting in the tax planning process and evaluating tax spikes arising from differences between accounting profit and taxable profit (Edgley & Holland, 2021). When auditors examine income tax accounts, a taxation background is necessary to enhance audit quality (Goldman et al., 2022). Information technology skills are also required to perform tasks effectively, efficiently, and in a timely manner (Imene & Imhanzenobe, 2020). Therefore, the entire accounting profession must be aware of the importance of accounting technical competence. In this research, the following hypotheses are proposed:

H_1: There is a difference in the technical competencies required for financial accountant, tax accountant, internal auditor professions

$H_{1,1}$: There is a difference in the technical competencies required for financial accountant dan tax accountant professions

$H_{1,2}$: There is a difference in the technical competencies required for financial accountant dan internal auditor professions

$H_{1,3}$: There is a difference in the technical competencies required for tax accountant dan internal auditor professions

METHODS

This research adopted a quantitative approach utilizing content analysis of job advertisements. The content of job advertisements can provide information about the competencies and skills demanded by the job market (Rios et al., 2020), making it a suitable method to address the research objectives. Content analysis was employed to scrutinize job advertisements as it was considered capable of validly representing the skills and competencies sought by employers (Dunbar et al., 2016). Content analysis was chosen for its reliability in summarizing indicators of technical competencies required by employers. It involved coding text or narratives into categories based on predefined criteria (White & Marsh, 2006).

The primary data for this study were job advertisements collected from the online job portal jobstreet.com. This platform was selected as it ranked among the most accessed job advertisement sites in Indonesia (Agustyani & Santoso, 2019). Additionally, online job advertisements were deemed a relevant and practical source for exploring current job skills (Khaouja et al., 2021). The research data spanned a period of 5 months to capture the technical competency needs presented in job advertisements (Harper, 2012). The research sample was collected through purposive sampling, where data were selected based on predetermined criteria set by the researcher, namely financial accountants, tax accountants, and internal auditors.

The data collection process in this research involved accessing the online job portal jobstreet.com, entering keywords such as "*akuntansi*, accounting, *akuntan*, accountant, and internal auditor" to conduct searches on jobstreet, and scrutinizing relevant job advertisements. The collected data were then saved in HTML document format within a designated folder. The study established indicators for accounting technical competencies and a coding procedure (codebook) to guide data collection (Table 1). Over the data collection period, a total of 1,136 accounting job advertisements were obtained. The data reduction process included filtering out non-relevant job advertisements and focusing on those in the fields of financial accounting, taxation, and internal auditing. The selection criteria involved qualifications for accounting graduates, eliminating duplicate advertisements, and narrowing down to ads with similar technical competency foundations based on the established indicators. After sorting the data, a total of 612 accounting job advertisements were retained. To ensure the reliability of the codebook, intercoder reliability was calculated. This involved assigning a numerical value of one to each identified technical competency. Two independent researchers conducted reliability testing by evaluating the same sample (Suryani et al., 2018), covering at least 10% of the total sample (Neuendorf, 2002). The intercoder reliability values obtained for each technical competency were as follows: financial statements 0.840; strategy and governance 0.843; management accounting 0.867; audit and assurance 0.858; finance 0.833; taxation 0.847; and information technology 0.889. These values indicate a high level of consistency and produce objective results (Stemler, 2001).

After collecting a total of 612 job advertisements and ensuring the appropriateness of the research instruments, the coding process was initiated. Various competencies mentioned in job ads were coded using dummy variables, assigning a code of 1 if the competency was present in the corresponding sample and 0 otherwise. In addition to coding technical skills in job ads, the researcher gathered data related to job positions, company size and location, work experience, and required certifications. The categorized data were then analyzed by summing up each skill item and presenting the results in percentage form. Based on these percentages, a ranking was created to identify the most in-demand technical skills for accountants in the workplace.

The study also aimed to explore the differences in technical competency requirements among the three independent samples: financial accountants, tax accountants, and internal auditors. Data non-normality was identified after conducting classical assumption tests, leading to the utilization of the Kruskal-Wallis test. The Kruskall-Wallis test is a non-parametric statistic that assesses overall differences among three or more independent sample groups (Ostertagová et al., 2014), making it unable to determine which group significantly differs from the others (Weaver et al., 2018). Therefore, the Mann-Whitney U test was deemed necessary. The Mann-Whitney U test was chosen as it can test different null hypotheses for the same variable when comparing two groups (Denis, 2018). The Mann-Whitney U test, a non-

parametric statistic, was performed to identify significant differences between financial accountants and tax accountants, financial accountants and internal auditors, as well as tax accountants and internal auditors.

Table 1. Technical Competency Indicators

Technical Competency	Detail
A. Financial Reporting	A1. Financial Reporting Needs and Systems A2. Accounting Policies and Transactions A3. Preparation of Financial Statements A4. Financial Statements Analysis
B. Strategy and Governance	B1. Governance, Mission, Vision, Values, and Mandate B2. Strategy Development/Implementation B3. Corporate Risk Management
C. Management Accounting	C1. Management Reporting Needs and Systems C2. Planning, Budgeting, and Forecasting C3. Cost Management C4. Revenue Management C5. Profitability Management C6. Organizational/Individual Performance Management
D. Audit and Assurance	D1. Internal Control D2. Internal and External Audit Requirements D3. Conducting Internal Audit and Preparing Reports D4. Conducting Comprehensive Audit and Preparing Reports
E. Finance	E1. Financial Analysis and Planning E2. Treasury Management E3. Capital Budgeting E4. Valuation E5. Financial Risk Management E6. Company Financial Transaction
F. Taxation	F1. Corporate Taxation F2. Personal Taxation F3. Preparation of Tax Reports F4. Understanding Indonesian Tax Principles and Regulations
G. Information Technology	G1. Microsoft Office Suite (Excel, Word, PowerPoint, Access) G2. Internet (Web, Intranet, Extranet, Email, social media, etc.) G3. Database Management System G4. Business Intelligence/Data Analytics (data mining, big data) G5. Standards for Data Marking and Reporting (XBRL standards) G6. Enterprise Resource Planning (ERP) Systems G7. Accounting Software G8. Audit Software G9. Tax-related Software

Source: Dunbar et al (2016), IES (2019), Klibi & Oussii (2013), Ngoo et al (2015), Uwizeyemungu et al. (2020).

RESULTS AND DISCUSSION

This study aimed to identify the technical competencies required by accountants and the employment opportunities for accounting graduates through the analysis of accounting job advertisements in Indonesia. Table 2 illustrates that information technology skills have the highest percentage among all technical competency indicators. This finding support Ghani and Muhammad's (2019) research, highlighting that knowledge and skills in information technology are crucial for accounting to navigate industry changes. Ku Bahador and Haider (2012) also found that accountants need proficiency in information technology to fulfill various tasks.

Table 2. Technical Competencies Needed for Accountants

		Job Position						Total
		Finance Accounting		Accounting Tax		Internal Audit		
Technical Competency Indicators	Financial Reporting	641	26.6%	218	23.1%	25	3.8%	21.98%
	Strategy & Governance	66	2.7%	9	1.0%	43	6.5%	2.93%
	Management Accounting	294	12.2%	61	6.5%	22	3.3%	9.38%
	Audit & Assurance	43	1.8%	13	1.4%	382	57.5%	10.97%
	Finance	327	13.6%	58	6.2%	7	1.1%	9.75%
	Taxation	445	18.5%	338	35.8%	8	1.2%	19.67%
	IT	595	24.7%	246	26.1%	177	26.7%	25.32%
			50.3%		19.4%		30.2%	100%
Mean Rank Kruskal-Wallis			374.45		410.96		126.17	
Mean Rank Mann-Whitney	FA-AT		205.48		236.06			
	FA-IA		323.48				119.67	
	AT-IA				234.89		99.50	

The research results indicate that the most sought-after IT competency for accountants is proficiency in operating Microsoft Office, including Microsoft Excel, Word, PowerPoint, Access, dan Outlook. Accountants utilize Microsoft Access for database management (Sithole, 2015); Microsoft Excel for extracting and analyzing data from databases for decision-making (Dzuranin et al., 2018); Microsoft Word for preparing reports, invoices, memos, and financial reports (Ghasemi et al., 2011; Strong & Portz, 2015); Microsoft PowerPoint for presenting results visually (Gray, 2010; L. Lee et al., 2018); and Microsoft Outlook for disseminating information through the internet (Spraakman et al., 2015). In addition to Microsoft Office, mastery of accounting software is also required for processing transactions and financial reporting (Daff, 2021). Employers seek accountants proficient in various accounting tools like Excel, MYOB, Xero, and other database systems (Tan & Laswad, 2018). The findings align with Spraakman et al. (2015) and Daff (2021), emphasizing the need for accountants skilled in multiple Microsoft tools (Excel, Word, PowerPoint, and Outlook), accounting software, and internet searching. This highlights the importance of information technology skills in the workplace, urging accounting graduates to enhance their proficiency through Microsoft Office and accounting software training to enter the job market.

The research results from Table 2 also reveal that the competency in financial reporting ranks second (21.98%) among all technical competencies. This indicates that the ability to prepare financial statements is highly sought after in accounting job postings. The findings support Rufino et al.'s (2018) research, emphasizing the importance of accounting knowledge and financial reporting skills in the workplace. The study also identifies expertise in preparing financial statements as the most specific skill accountants need. Similar results were found by Uwizeyemungu et al. (2020), placing the skill of preparing financial statements as the most needed. Employers require accountants proficient in financial accounting, including the ability to interpret and assess financial performance, understand the accounting cycle, accounting standards, and prepare financial statements (Aryanti & Adhariani, 2020). The primary purpose of financial statements is to provide reliable and useful information for economic decision-making. The reliability of financial information can be influenced by the accounting standards and policies used (Lugovsky & Kuter, 2019). Therefore, accounting graduates are expected to have knowledge of basic accounting concepts, financial reporting policies and standards, and the ability to prepare and analyze financial statements (Getahun & Mersha, 2020).

According to the results in Table 2, the third-ranking competency (19.67%) is attributed to taxation. This suggests that taxation competency is frequently used as a qualification in accounting job advertisements. Tax compliance can be enhanced by improving taxation knowledge, including procedural knowledge and tax law understanding (Bornman & Ramutumbu, 2019). Therefore, taxation competency is crucial for accountants to determine accurate corporate tax obligations. The varying nominal tax payments each year necessitate accountants to possess taxation knowledge in tax planning processes and ensure corporate tax compliance (Doyle et al., 2022; Edgley & Holland, 2021). The required skills for accountants

include identifying and calculating individual and corporate income taxes, as well as knowledge related to the principles and basic concepts of taxation (Ngoo et al., 2015). A tax accountant should have knowledge of tax laws in Indonesia and the ability to use taxation software facilitated by the Directorate General of Taxes (DJP), such as e-Faktur, e-SPT, e-Filing, and e-Billing (Dwiharyadi et al., 2021; Zulma, 2020).

In addition to the high demand for information technology, financial reporting, and taxation competencies, the research findings highlight the low demand for strategic governance competency. This indicates that strategic governance competency is rarely required for financial, tax, and internal auditor accountants. This may be because strategic governance and corporate governance competencies are more emphasized in management accountants (Arunruangsirilert & Chonglerttham, 2017). Collier et al. (2006) found that management accountants play a crucial role in integrating corporate governance and enterprise risk management. Some management accountant competencies include corporate governance, risk management, and compliance, covering information and technology security risks (Boulianne, 2016).

Table 2 indicates that the most commonly found accounting profession in job advertisements is financial accountant (50.3%), while the least common is tax accountant (19.4%). This finding demonstrates the continued demand for accounting professions in the industrial sector. As long as businesses operate, companies will need accountants, such as financial, risk management, budgeting, and tax accountants (Adi, 2022; Denandra, 2022). Financial accountants, tax accountants, dan internal auditor accountants have different job specifications within a company. The division of tasks among accountants aims to prevent fraud and employee errors due to conflicts of interest (Partanen, 2021). Additionally, task separation is considered capable of achieving accountants' objectives (Watrin et al., 2012). Therefore, technical accounting competencies is crucial to fulfilling accountants' role in business, even though the differences in job specifications create varying technical accounting competency needs (Albu et al., 2011).

The difference in technical accounting competency needs among accounting professionals (financial, tax and internal auditor) is confirmed by the results of the Kruskal-Wallis test, which found significant differences ($\chi^2 = 282.59$, $p < 0.05$). This was further validated by the Mann-Whitney U test, which identified significant differences in technical competency between financial accountants and tax accountants (Mdn = 7, $z = -2.317$, $p < 0.05$), financial accountants and internal auditor (Mdn = 6, $z = -15.471$, $p < 0.05$), as well as tax accountants and internal auditor (Mdn = 5, $z = -13.204$, $p < 0.05$). The research findings indicate that each accounting profession has different technical competency requirements. Financial accountants tend to require financial reporting competency because this skill is related to the accountant's responsibility for presenting the company's financial statements (Lee & Wang, 2020). In comparison, tax accountants need more technical competency in taxation. This aligns with Doyle et al. (2022), where tax expertise is required for tax liability calculations by tax accountants. Additionally, audit and assurance competency is more needed by internal auditor. This is related to the internal auditor's role in examining and ensuring the reliability of the company's financial information (Fernando & Sitorus, 2020). These findings provide insights into accounting programs with different concentrations (financial, tax, and internal auditor) to manage the delivery of technical accounting competency material. For example, taxation program students may receive more tax-related material and less material on governance and audit. Similarly, financial accounting students can obtain less coverage of audit material and emphasize financial reporting material.

Furthermore, this research found that the need for information technology ranked second across all accounting professions. This indicates that information technology skills are crucial for the career success of accountants in the workplace. The significant progress in information technology includes its use in performing accounting functions and processes (Imene & Imhanzenobe, 2020). Financial reporting processes can be aided by technology such as cloud accounting (Türegün, 2019). For internal auditor, the judicious application of technology can enhance the efficiency and effectiveness of audits (Elisabeth, 2019). Technical skills and knowledge are also imperative for understanding and implementing system control processes (Pan & Seow, 2016). For tax accountants, technical competency is valuable in the tax planning and preparation process (Imene & Imhanzenobe, 2020). The evolving tax regulations over time make tax work challenging. With the assistance of information technology, the tasks of tax accountants can be carried out easily and quickly through tax application (Zulma, 2020).

This research endeavors to explore employment opportunities for accounting graduates based on company size, location, and industry type. The study categorizes company size into small, medium, and large companies, as done by Finch et al. (2013). According to Table 3, accounting graduates are in high demand by medium-sized (45.5%) to large (29.5%) companies compared to small-scale companies. These findings support data from the Statistics Indonesia stating that the employment absorption in large and medium industries is 5.9 million people, greater than the small industry which employs only 2.6 million people (BPS, 2020). The Ministry of Industry also states that a workforce of 11.68 million people is absorbed in the Small and Medium Industry sector (Kemenperin, 2019).

Based on the distribution of company locations in Table 3, the highest demand for accounting graduates is in the DKI Jakarta region (62.7%). Geographically, Java and Sumatera rank highest in the demand for accounting graduates in Indonesia. This is attributed to the presence of numerous industrial zones in Java (72) and Sumatera (37) compared to Kalimantan (7) and Sulawesi (8) (Kemenperin, 2022a). The opening of industrial zones contributes significantly to a larger workforce absorption (Purnasari & Darnawaty, 2019).

More specifically, this research examines employment opportunities based on industry types. Table 3 shows that the manufacturing industry has the highest percentage of demand for accounting graduates. The Ministry of Industry (Kemenperin, 2022) states that the workforce absorption in Indonesia continues to increase in the manufacturing sector. Manufacturing companies require accountants to provide relevant and strategic information for decision-makers (Hadid & Al-Sayed, 2021). Therefore, manufacturing companies are more likely to require accounting graduates in their recruitment processes. In conclusion, the manufacturing industry presents more job opportunities for accounting graduates compared to other industries.

The research findings emphasize the significance of work experience for candidates seeking accounting positions. Most companies require candidates to possess work experience as it is considered essential for evaluating job suitability and determining if the candidate is a good fit for a specific role (Irwin et al., 2019). Internship programs provided by companies and facilitated by universities play a crucial role in enhancing job readiness (Gohae, 2020). Through internships, accounting graduates gain real-world experience, develop professional skills, and gain insights into the expectations companies have for accounting graduates (Lansdell et al., 2020; Sisman, 2016). Therefore, prospective graduates are encouraged to acquire relevant work experience to enhance their chances of securing positions in desired companies.

In addition to technical competencies, work opportunities and experience, professional certificates are also highly valued by employers. As indicated in Table 3, tax certificates are the most frequently requested, constituting 79.7% of 172 job advertisements. This aligns with the regulations outlined in the Minister of Finance Regulation Number PMK-229/PMK.03/2014, which mandates tax certification for employees authorized to carry out taxation rights and obligations (Kemenkeu, 2014). Besides tax certificates, companies also require other professional certificates such as accountant certificates, internal auditor certificates, risk management certificates, and financial analyst certificates. Professional certificates are crucial for accounting graduates in career development (Darmawan, 2019), as they serve as assurances to employers that candidates can meet job competencies (Uwizeyemungu et al., 2020).

Table 3. Employment Opportunities for Accounting Graduates

Indicator		Percentage
Company Size (n = 563)	Medium (51-500 employees)	45.5%
	Large (>501 employees)	29.5%
	Small (1-50 employees)	25.0%
Company Location (n = 599)	DKI Jakarta	61.6%
	West Java	19.7%
	East Java	7.5%
	Central Java	3.7%
	North Sumatera	2.0%

	Others	
Industry Type (n = 612)	Manufacture	14.1%
	General & Wholesale	8.8%
	Retail/Merchandise	8.2%
	Property/Real Estate	6.2%
	Transportation/Logistics	4.7%
	Automotive/Additional Automotive Machinery	4.6%
	Construction/Building/Engineering	4.4%
	Food & Beverage/Catering/Restaurant	4.2%
	Banking/Financial Services	4.1%
	Others	
Work Experience (n = 612)	0	1.6%
	≤2	50.3%
	3-4	27.1%
	≥5	20.9%
Professional Certificates (n = 185)	Tax Certificate (Brevet A/B/C)	79.7%
	Accountant Certificate (CPA/ACCA/CMA/CA/CIMA)	12.2%
	Auditor Certificate (CIA/QIA/CISA/CFrA)	9.9%
	Risk Management Certificate (CRMO/CRA)	3.5%
	Financial Analyst Certificate (CFA/CFP)	2.3%

CONCLUSION

This research aims to provide insights into the expectations of companies regarding the technical competencies of accountants as stated in job advertisements. The key findings of this study indicate that information technology skills, financial reporting, and taxation are the most sought-after technical competencies by companies. Therefore, it is crucial for accountants to possess these skills to ease their entry into the workforce. The research also identifies significant differences in the technical competency needs between financial accountants and tax accountants, financial accountants and internal auditors, and tax accountants and internal auditors. These variations arise from differences in job responsibilities. Hence, it is important for accountants to be aware of the required skills corresponding to their desired profession. Furthermore, employment opportunities for accounting graduates are abundant in medium to large-sized companies, particularly in the manufacturing sector. The geographical distribution is predominantly in Java. Companies also stipulate a minimum of 1 year of experience and the possession of professional certificates. Various professional accounting certificate exams are recommended as value-added credentials in the selection process, enhancing competitiveness in this era of technological advancement (Anggraeni et al., 2018).

The outcomes of this study are anticipated to be valuable for students in preparing themselves with the necessary technical skills sought by employers. The research offers insights into the needs for technical competencies in the accounting industry, urging academia and professional bodies to emphasize essential and practical technical competencies in their educational programs. Moreover, this research contributes to the applicability of the job market signaling theory, where job seekers adjust their qualifications based on the signals from job advertisements. Given the rapid changes in the work environment, it is crucial to continually update knowledge and skills to meet the evolving demands of companies.

However, this research provides a limited perspective on the job market, as job advertisements might not explicitly mention all the skills needed by applicants, such as specific competency levels required by employers. Further research could explore job advertisements and interview employers to uncover the depth of competency levels required by companies. Additionally, this study did not analyze offline job advertisements, so generalizing the findings should be done cautiously, as the data may not represent the entire population of job advertisements. Therefore, future researchers might consider analyzing job ads in print and electronic media to provide a more comprehensive view. Furthermore, adding management

accountant positions could be considered in future research, despite their exclusion in this study due to the mismatch between the skills in the advertisements and the specified indicators.

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