


## PROFESSIONAL SKILLS AND COMPETENCIES REQUIRED OF ACCOUNTANTS: WHAT ARE THE REQUIREMENTS FOR EMPLOYMENT ADVERTISEMENTS?

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### ABSTRACT

*The research aims to analyze the patterns of similarities of skills and abilities signaled in job advertisements for an accountant position, from the guidelines of the International Federation of Accountants (IFAC), under the light of signaling theory. To achieve the objective, a content analysis was carried out on 200 job advertisements for an accountant position on the “Catho” and “LinkedIn” websites. Through descriptive statistics, the competencies and skills most demanded by the market were identified and later, with cluster analysis, the advertisements from different organizations were grouped. The study shows, as requirements for hiring, professionals who demonstrate, in addition to the technical skills exclusive to Accountants, emerging skills, such as critical thinking, problem solving and teamwork. Three job profiles were highlighted based on the competencies/skills that companies require when hiring accountants: languages; financial reporting and taxation, accounting management. The contribution of this research is to provide institutions, educators and professionals in the area, with insights into the requirements demanded by the job market for accounting professionals, and they can use this information for a constant professional update, aiming to meet the real needs of companies.*

**Keywords:** *Competencies. Skills. Accountants. Signaling Theory. Job advertisements.*

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**Edited in Portuguese and English. Original version in Portuguese.**

**Received on 11/24/2021. Reviewed on 12/16/2021. Accepted on 12/23/2021** by Prof. Dr. Sérgio Murilo Petri (Editor-in-Chief) and Prof. Dr. Sandro Vieira Soares (Associate Editor). **Published on 12/29/2021.**

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## 1 INTRODUCTION

The context and dynamics of the global business environment have resulted in changes in the skill sets required by accountants seeking to add value to organizations. As market and business perceptions change, new strategies are being created and used by companies in their selection processes, consequently generating greater competitiveness and dynamism in the need for skills and competencies aligned to market expectations (Dolce et al., 2019). Thus, it becomes necessary to analyze this constant interaction between the labor market and professionals, since they mutually send signals regarding the requirements and expectations of the competencies possessed by potential candidates for accountant positions.

According to the market signaling theory proposed by Spence (1973), a signal is a directive evidenced by an economic actor in the demand for a certain set of skills or characteristics. Spence addresses the fact that educational level is a signal of a worker's qualifications to potential employers. Hence, professional and academic institutions must be aware of market signals regarding expected competencies and skills, likewise, the market assesses graduates' competencies and skills according to their certifications (Spence, 1973).

In this context, the *International Federation of Accountants (IFAC)*, an organization that supports the development, adoption, and implementation of international standards for accounting education, through the *International Accounting Education Standards Board (IAESB)*, created a standard called the *International Education Standard (IES)*, which establishes guidelines for technical competencies (IES 2) and professional skills (IES 3) required for the accounting professional.

In Brazil, the Federal Accounting Council (CFC), as an IFAC member, plays the role of keeping the profession's trends up to date with international standards (CFC, 2018).

The discussion of competency and skill standards for the accounting professional and their alignment with the requirements demanded by the market has been explored by international studies (e.g., Dunbar, Lain & Wynder, 2016; Tan & Laswad, 2018; Dolce et al., 2019; Uwizeyemungu, Bertrand & Poba-Nzaou, 2020). In the Brazilian context, this discussion has focused mainly on certain regions and specific areas of accounting (e.g., Jacomossi & Biavatti, 2017; Meurer & Voese, 2020).

Therefore, to answer the research question: What are the patterns of similarities in competencies and skills signaled by employers to accountants? This study focuses on a content analysis of 200 online job advertisements for accountant positions posted by organizations based in Brazil. Job advertisements have been shown to be a valid source of *insights* in several research areas (e.g., Verma, et. al, 2019; Brooks, Greer & Morris, 2018; Gardiner et. al, 2017).

Unlike previous studies, this research contributes by the comprehensiveness of the advertisements' geographic space. It broadens the understanding in national studies of the competencies required of the accounting professional through the Signaling Theory, and analyzes the competencies and skills in *clusters*, since organizations demand multiple competencies concurrently for accountant positions. Moreover, the study considers the characteristics (size, sector, and region) for the *cluster* analysis.

Theoretically, the study contributes to the discussion of the alignment between the skills and competencies guidelines for the training of accountants and the requirements demanded in the labor market. Furthermore, this study contributes to the market Signaling Theory analyzing competencies and skills in job advertisements as signals that distinguish the types of employees in an asymmetric information context, a typical labor market scenario.

Practically speaking, the study provides accounting professional bodies, educators, business managers, recruitment consultants, and job *website* managers with a framework for understanding the requirements needed when recruiting an Accountant. The study contributes to

the debate concerning the skills-based approach to training accountants beyond technical activities. Specifically, when highlighting professional skills, the study indicates those that require greater attention throughout the accounting professional's training, as these are essential for the accountant who operates in a dynamic environment. Based on the survey results, recruitment consultants and job *website* managers can better help companies intending to hire accountants to present their competency/skills requirements according to the desired profile, because the signals (requirements) issued by the market must follow the socio-economic context experienced. Therefore, just as the competencies/skills of individuals are signals for hiring, the requirements demanded by the market are a point of attention for employees.

## **2 THEORETICAL BACKGROUND**

### **2.1 Technical and Professional Competencies**

The concept of competency is not uniform, however, there are two dominant currents: the American one, which understands competency as a set of knowledge, skills, and attitudes. Although this perspective is focused on the analysis of the individual, most authors signal the importance of the competencies alignment to the needs established by the existing positions in the organizations (Fleury & Fleury, 2001). In the French current, the debate arises from the dissatisfaction of the professional training process and the needs of the labor world. This current links education and work and aims to increase workers' skills and opportunities for employment. Thus, competency is understood as the result of organized learning processes (Fleury & Fleury, 2001).

Fleury and Fleury (2001, p. 21) define competency as "[...] a responsible and recognized know-how, which implies mobilizing, integrating, transferring knowledge, resources, and skills that add economic value to the organization and social value to the individual". For Durand (1998, p. 3) it is "The set of interdependent knowledge, skills, and attitudes necessary for the achievement of certain purposes". This definition will be adopted for this research, since the accountant's role has several purposes and requires the elements proposed by the author. In addition, it is also aligned with the discussion of competency within the scope of the accounting professional's work by the IAESB.

IAESB is a normative body, which works in the public interest by strengthening the accounting profession and developing and improving accounting education. IAESB aims to develop International Education Standards for international adoption and application, and to encourage the implementation of the International Accounting Education Standards (IES). These standards prescribe the technical competencies and skills accounting professionals need to develop throughout their training and assist, in addition to IFAC members, other entities interested in accounting education, such as universities, employers, regulatory bodies, government authorities, accountants, and academics (IAESB, 2019a).

For this institution, professional competency is the skill to perform a role according to a defined standard and consists of an integration and application of: Technical competency; Professional skills, values, ethics, and professional attitudes (IAESB, 2019b). There is a specific standard for each of these competencies. This study's scope is comprised of technical competencies (IES 2) divided into eleven areas: (1) Accounting and financial reporting, (2) Managerial accounting, (3) Finance and financial management, (4) Taxation, (5) Auditing and assurance, (6) Governance, risk management, and internal control, (7) Business laws and regulations, (8) Information and communication technology, (9) Business and organizational environment, (10) Economics, and (11) Business strategy and management. In addition, professional skills (IES 3) are comprised of four broad competency areas: (1) intellectual, (2) interpersonal and

communication, (3) personal, and (4) organizational. Each area is subdivided into specific competencies (IAESB, 2019a; IAESB, 2019b).

In Brazil, the Federal Accounting Council (CFC) is an IFAC member, however, it does not have the competency to deliberate on educational matters, but it has the commitment to engage in the development of convergence into international standards (Jacomossi & Biavatti, 2017). The curriculum guidelines for accounting science programs are regulated by Resolution CNE/CES 10/2004, which also presents the expected profile of the graduate in terms of competencies and skills (Brazil, 2004). Thus, it is up to the CFC to verify possible misalignments between the national curriculum and international standards and, if necessary, to propose a curriculum framework based on IFAC's IES.

One of this adjustment's benefits is the possibility of conducting international *benchmarks* which allow the verification of existing gaps in accounting education in each country (Jacomossi & Biavatti, 2017). These learning gaps between national curricula and the standards proposed by international bodies do not necessarily imply an incapacitated training of the accounting professional, since each country has its peculiarities regarding the accounting education program. The educational development occurs according to the different contexts of each country and region, whether due to culture, legal, educational or economic system (Jacomossi & Biavatti, 2017). Therefore, professional and educational institutions, depending on convenience and opportunity, can propose adaptations according to local and global needs in training the professional for effective professional integration (Bemfica et al., 2016; Jacomossi & Biavatti, 2017).

## 2.2 Labor Market Signaling Theory

Proposed by Spence (1973), the labor market Signaling Theory holds that economic agents, before entering into "contracts," analyze each other's signals. This mutual sign relationship between the actors acts as a preview before the "contract" is signed. From this perspective, a signal is an activity that seeks to show that an economic agent possesses a certain set of skills, characteristics, or has certain expectations. Within education, Spence (1973) argues that the competencies and skills of individuals act as beacons or selection mechanisms for the labor market, just as the professional criteria required by the market act as a point of attention for professionals and educational institutions.

From the professional perspective, the employer looks at the conditional probabilities regarding the potential employee's productive capacity, given the various combinations of signals (competencies and skills) required. Then, the labor market Signaling Theory provides a useful conceptual framework to study the exchange of information between two parties in an asymmetric information context (Spence, 1973), as is the case in the labor market where one agent (the hiring company) signals a position to be filled and the other agent (potential employee) applies for this position (Cellani & Singh., 2011). Thereby, this theory has been used for theoretical background in recruitment studies (e.g., Suazo, Martínez & Sandoval, 2009) and studies on job advertisements (e.g., Verwaeren, Hoye & Baeten, 2016; Moore & Khan, 2019; Uwizeyemungu, Bertrand & Poba-Nzaou, 2020).

Thus, professional and academic institutions must be aware of market signals regarding expected competencies and skills, just as the market assesses the competencies and skills of graduates according to their certifications (Spence, 1973). In this study, under the light of the labor market Signaling Theory, online job advertisements for accountants, whose contents convey signals from potential employers regarding requirements and expectations concerning technical competencies and professional skills, were analyzed (Celani & Singh, 2011; Ganesan, Antony & George, 2018).

### **2.3 Competencies of the Accounting Professional: Prospects for Change**

Until the mid-20th century, accounting professionals were known as bookkeepers, responsible for keeping the books (e.g., journal and general ledger) and drawing up the business balance sheet (Sales, 1761-1773). A highly mechanistic job, in which good handwriting was a must for professional practice (Koliver, 1993). These competencies met the needs of the social and economic structure of that time (Camargo, 1991). However, substantial changes have made professional performance complex, and the complexity came along with sophistication, which started to demand more specialized knowledge from Accounting professionals (Koliver, 1993), thus the expression bookkeeper was losing space to the term Accountant.

According to Antunes et al. (2005), since the 1960's there has been a period of economic, technological, political, and social changes that have gradually altered society's structure and values. Thus, accounting, like every field of human knowledge, changes as society advances to meet the demands of the social environment in which it operates (Hansen, 2001). Therefore, changes in the competencies required from the professional are noticed due to the mutations occurring in society in general and in organizations in particular, mainly caused by the diversity of users with differentiated interests, the consequent variety of reports issued, and technology support (Antunes et al., 2005).

Gomes (1979) points to the 1970s as a milestone for the development of the accounting profession in Brazil, with the enactment of Law 6,404 of December 15, 1976 (the Company Law). Under the economic, financial, and accounting aspects, some criteria and terms of reference are defined for the equity and financial information presentation purposes, in addition to the creation of the "Full Inflation Adjustment" of the referred statements (Gomes, 1979). This change implied a permanent need for professional updating, especially for those professionals who did not meet the requirements. The need for a greater effort, in a short period of time, to acquire specific knowledge on balance sheet consolidation, monetary correction, stock capital, among others, to take advantage of the benefits offered by the labor market's rapid expansion (Gomes, 1979).

Since the 1980s, Accounting has experienced a period classified as the "Information Revolution" with the emergence of the first computers, but information technology was more focused on producing data than information. Thus, the challenge was to use information technology for strategic decisions, enabling a greater value addition to the assets (Cosenza, 2001). This change demanded a greater participation from the accountant in the organizations' decision making process, given that, in the 1980s, the accountant did not participate in the decision making process, but only provided support to the decision makers (Siegel & Sorensen, 1999; Cardoso, Souza & Almeida, 2006).

Accounting scholars (e.g., Gomes, 1979; Camargo, 1991; Koliver, 1993; Martins, 1993; Marion, 1998; Cosenza, 2001; Schwez, 2001) have already argued the need for the redirection of competencies and skills in the training of accountants beyond technical knowledge. Cosenza (2001) is more assertive when stating that accountants are perceived as lacking competencies beyond their professional domain, i. e., the quantitative aspects of information. Within this perspective, the author mentions the emergence of a repositioning of the traditional practices and behaviors of Accounting professionals that commonly presented the following characteristics:

- i) They generally refuse to go beyond the strict limits of accounting;
- ii) They limit themselves to work on fiscal, tax, and legal issues;
- iii) They make more effort to shape the client according to the government's guidelines than to meet the client's needs;
- iv) They abstain from intervening in the management consulting area for small and medium-sized companies (Cosenza, 2001 p. 54).

In the late 1990s, with the expansion of capitalism and the globalization process, the internationalization of the accounting profession became irreversible (Cei & Bosco Filho, 1997). In 2000, the convergence process of the Brazilian Accounting Standards to the international standards began. According to Leite (2002), given the markets' globalization, the accounting standardization among countries is inevitable, in such a way that transparent and comparable norms are used worldwide, aiming to make accounting a universal language in the corporate business world, thus facilitating the communication process between the company and its information users.

Antunes & Formigoni (1999) sought to identify the necessary competencies the accounting professional must develop and/or master to act efficiently in the market. The authors verified: a) the minimum knowledge the profession requires; b) the technical and personal skills the accounting professional must master and develop; and c) the attitudes he or she must have when facing the profession's current needs. The competencies identified by the authors have been organized in Figure 1.

<b>Specific Knowledge</b>	Brazilian and international accounting practices; business scenarios; risk identification, evaluation, and management; result and performance evaluation; business strategy and organization; integrated view of the organization; legal and judicial environment of the country; information technology applicability; process and project management; identification of users' information needs; auditing and application of statistical and mathematical tools.
<b>Skills</b>	Logical thinking; strategic results vision; perception and interdisciplinary knowledge application; critical reflection and analysis; verbal and written communication; self-assessment and interpersonal relationship.
<b>Attitudes</b>	Ethical values; participation and commitment; critical view of the world and business; self-criticism and respect.

**Figure 1.** Competencies, skills, and attitudes of the accounting professional

Source: Adapted from Antunes & Formigoni (1999); Antunes et al. (2005).

It is possible to observe that there has been a substantial change from the Accountants' former activities, which were performed in a solitary way, recording accounting facts to control assets (Book Keepers) to the current ones. New activities were gradually added, and today are part of the accounting professionals' private attributions, those related in article 3, of Chapter 1, of Resolution 560 of October 28, 1983, of the Federal Accounting Council (Antunes et al., 2005). It is understood that the basic function of Accounting, over time, has not changed, however, the organizations and the environment where they operate have changed and, therefore, the phenomena to be evidenced, which motivates an adaptation of the competencies and skills required of accounting professionals according to the social, economic, and political context of each time (Antunes et al., 2005).

## 2.4 Previous Studies

Research recognizes the need to analyze the competencies and skills of accountants and the requirements demanded by the market in various business areas. In this sense, the studies in this field seek to verify this interaction between companies, educational institutions, graduates, and the professionals themselves, identifying signs and possible learning gaps. Three research methods were identified: i) questionnaires (e.g., Maelah et al., 2012; Jacomossi & Biavatti, 2017; Dolce et al., 2019), ii) interviews (e.g., Low et al., 2016; Douglas & Gammie, 2019) and iii) job advertisements (e.g., Dunbar, Lain & Wynder, 2016; Tan & Laswad, 2018; Uwizeyemungu, Bertrand & Poba-Nzaou, 2020; Meuren & Voese, 2020). The latter assume that the content of job advertisements are a valid representation of the skills and competencies required by employers.

The study of Dolce et al. (2019), who investigated the existence of a match between accounting graduates' perceptions and firms' expectations of the skills needed in Italy, is among the contributions in this area. The survey showed an effective discrepancy between the estimated importance and the self-assessment of these technical and social skills. Regarding graduates' awareness of these skills' importance, the authors concluded that graduates' perceptions corresponded only partially with employers' actual expectations.

In a different perspective, Dunbar, Lain, and Wynder (2016) investigated the emphasis on certain technical skills by potential employers for accounting and graduate accounting positions in job advertisements in Australia. The authors compared the results with the criteria of professional body certifications from Australia and New Zealand. The results showed that employers place more emphasis on interpersonal skills, and to a lesser extent, on technical skills. Similar result to the research of Tan and Laswad (2018), who examined the skills required by recruiters of accounting graduates using the *International Education Standard* (IES 3) as a guideline for comparing the results. The study signaled that interpersonal and personal relationship skills are often most requested in advertisements, most prominently, the ability to collaborate with colleagues, discuss and defend points of view, and have a positive attitude.

Similarly, Douglas & Gammie (2019) point out that non-technical skills are essential for the accountant operating in a dynamic socio-technical environment. However, educational institutions have not prioritized these skills, due to the high levels of technical content required in the professional accreditation exams. Low et al. (2016) recommend a greater inclusion of non-technical skills in accounting education through active methodologies, since the necessary technical competencies will be enhanced in the work environment. In Malaysia, students entering an accounting degree program are required to undergo six months of industrial training in a company or auditing institution. Maelah et al. (2012), in a study on the contribution of this training to the development of social skills in students, evidenced that students developed several social skills, including time management, oral communication, and teamwork.

Uwizeyemungu, Bertrand, and Poba-Nzaou (2020) analyzed the requirements demanded by *online* job advertisements from the competency framework preconized by *Chartered Professional Accountants* (CPA Canada). After a content and *cluster* analysis of the job advertisements, the authors identified three significant profiles of competencies demanded by the market, these being: Financial Reporting, Fiscal Aggressiveness, and Performance Management Profile. In addition, the authors found a partial convergence between the competencies required by the labor market and the training standard proposed by the CPA.

In Brazil, previous studies have analyzed the competencies proposed by IFAC with a theoretical and theoretical-empirical approach. Jacomossi and Biavatti (2017) investigated how the International Education Standards proposed by the IAESB may influence the national accounting education environment. The authors concluded that when relating the standard proposed by the IAESB to the influences identified in the respondents' perspectives, possible influences that outline contributions in three distinct perspectives were found: theoretical, practical, and social.

With a theoretical-empirical approach and a specific focus on the city of São Paulo, Meuren and Voese (2020) analyzed the profile required by the job market for accounting professionals in the cost area based on IFAC guidelines. The authors analyzed 155 job openings advertised on the *Manager Empregos* website. The research findings highlighted the importance of developing not only technical competencies, but also social skills among students in Accounting programs.

Therefore, this study expects to contribute to the (inter)national literature, differentiating itself not only by the comprehensiveness of the analysis geographic space, but also by being based on the market Signaling Theory and the formation of *clusters* of the requirements demanded by the market based on the characteristics (size, sector, and region).

### 3 METHODOLOGICAL PROCEDURES

In order to meet the research objective, a content analysis of *online* job advertisements for accountant positions was conducted. Studies (e.g., Verma, et. al, 2019; Brooks, Greer, & Morris, 2018; Gardiner et. al, 2017) have shown that secondary website data can be a valid source of *insights* in several research areas. According to Uwizeyemungu, Bertrand, and Poba-Nzaou (2020), content analysis of job advertisements has been used in a variety of professional contexts to study skills and competencies needed for several positions, including in *big data*, business analytics, engineering, human resources, and information systems.

Content analysis is defined as a technique used for identifying trends and patterns in messages. Bardin (2016) qualifies content analysis as a set of techniques for analyzing communications. Thus, the study used a coding scheme based on the IFAC structure of technical competencies (IES 2) and professional skills (IES 3), which are divided into general competencies/skills and progressively separated into specific competencies/skills (Appendix). In order to standardize the nomenclatures, the terms "general competencies" are used for categories (areas) C1, C2, C3 and "specific competencies" for subcategories C1.1, C1.2, C1.3. It is noteworthy that the content analysis applied begins qualitatively, by reading and interpreting the advertisements' text, and continues quantitatively, by coding and quantifying the specific competencies and skills observed in the advertisements. A deductive approach was used, without ruling out a priori the inductive method, considering that new competencies and skills could emerge from the job advertisements.

It was set as a goal to collect at least 200 job advertisements from organizations based in Brazil, considering this number necessary not only for a meaningful content analysis, but also for a statistical analysis (Uwizeyemungu, Bertrand & Poba-Nzaou, 2020). In order to make up the survey sample, the job advertisements had to be related to accountant positions, so the search was performed using the keyword "Accountant" in the advertisements. Furthermore, the advertisement was required to indicate certain parameters, namely: a) information on the hiring organizations (region and size); b) information on the position; c) information on the requirements (industry experience, work experience, professional title; and d) competency and skills requirements.

The searches were performed on the "Catho" and "LinkedIn" websites, which were selected because they highlight information in the advertisements according to predefined parameters. At first, the "Catho" website was used for data collection, where 200 advertisements were identified, with a time frame from February to June 2021. However, eleven advertisements were removed from the sample because they were duplicates. Thus, it was necessary to use another website. "LinkedIn" was chosen, and in it the first 11 advertisements that met the selection criteria were selected. Finally, 200 job advertisements data were collected after eliminating duplicates. The advertisements collected from the recruitment websites were distributed geographically according to Table 1.

Table 1  
**advertisements distribution by region**

Region	Advertisements		Total
	Catho	LinkedIn	
North	7	-	7
Northeast	18	1	19
Midwest	18	1	19
Southeast	110	6	116
South	36	3	39
<b>Total</b>	<b>189</b>	<b>11</b>	<b>200</b>

Source: Research data (2021).



Based on the initial coding scheme and using the *Microsoft Office Excel* tool, another file was created for the final research database (Appendix). In this new file, the specific competencies/skills in each advertisement were compared with those determined in the coding scheme. Thus, a binary coding was used: 1 whenever the advertisement explicitly stated a competency/skill corresponding to the coding scheme, otherwise, 0. If a specific competency/skill required in the ads was not found in the pre-established coding scheme, a new general or specific competency/skill would be created.

Through the inductive method, the specific ability to communicate in English and Spanish was identified in the advertisements. Since it was not part of the initial coding scheme, a new general ability was created, called Languages (S5) and subdivided into specific abilities English (S5.1) and Spanish (S5.2). Therefore, the final coding scheme comprised 16 general competencies/skills, 15 according to the structure recommended by IFAC and 1 inserted from the advertisements' analysis.

After collecting and coding the advertisements, descriptive statistics were used to identify the most and least frequently required competencies, and the sample characteristics (e.g., company size and activity sector). In order to classify the companies' size and sector, the Methodological Note for the Calculation of Business Indicators of the Brazilian Micro and Small Business Support Service (SEBRAE) was used. In this technical note, the establishment size is defined according to the number of people employed and depends on the economic activity sector, as shown in Table 2.

Table 2

**Establishment size definition according to the number of employees**

Size	Commerce and Services	Industry
Microenterprise (ME)	Up to 9 employees	Up to 19 employees
Small Business (SB)	From 10 to 49 employees	From 20 to 99 employees
Medium-Sized Company	From 50 to 99 employees	From 100 to 499 employees
Large Companies	100 or more employees	500 or more employees

Source: SEBRAE (2018).

Then, *cluster* analysis was used to group the job advertisements from different organizations presenting similar standards regarding the required competencies and skills. The result of a successful cluster analysis is to produce a number of subgroups made up in such a way that each of them is internally consistent (i.e., brings together cases that are more or less similar) while externally distinct, that is, cases in one subgroup are different from cases in other subgroups (Uwizeyemungu, Bertrand & Poba-Nzaou, 2020).

Regarding the grouping variables, an index was created considering the number of specific competencies/skills required in each of the 200 advertisements. For example, the general competency Accounting and Financial Reporting (C1) is subdivided into 6 specific competencies, so for this general competency an index of 2 was calculated, which means that 2 of the 6 specific competencies were found in the advertisement analyzed. Thus, this procedure was performed for all the other advertisements.

It is possible to notice that in the coding scheme the number of specific competencies/skills are distributed unevenly among the general competencies/skills. For example, the general competency "Accounting and Financial Reporting (C1)" is made up of 6 specific competencies, while "Auditing and Assurance (C5)" is made up of 7 specific competencies. Therefore, to avoid distorting the results by assigning greater weight to the general competencies/skills with more

specific competencies/skills, the data had to be standardized before applying the clustering algorithm.

The standardization was calculated as follows: the index was divided by the number of specific competencies/skills for each general competency/skill. For example, index 2 for C1 (Accounting and Financial Reporting) was divided by 6 (number of specific competencies), which resulted in an index of 0.33 for the advertisement analyzed. Hence, the standardization was repeated for the remaining advertisements collected.

First, the hierarchical algorithm was applied (using the first link between clusters and squared Euclidean distance as clustering criteria) to determine the optimal number of *clusters*. These results were used as initial seeds for the non-hierarchical (k-means) algorithm. Four *clusters* have emerged from these procedures, named as follows: *Cluster 1* "Languages"; *Cluster 2* "Financial reporting"; *Cluster 3* "Accounting management"; and *Cluster 4* "Tax". The Shapiro-Wilk normality test ( $n < 30$ ) was used for *cluster 1* Languages, because it has only 7 clustered advertisements, and the Kolmogorov-Smirnov Test ( $n > 30$ ) for the others, *clusters 2* "Financial Reporting", 3 "Accounting Management", and 4 "Tax". Afterward, the Levene Test was performed to test the *clusters* for homoscedasticity. The test results showed that the research sample does not have a normal distribution and is not homoscedastic, and thus a non-parametric test was required to analyze the results.

Therefore, the Kruskal-Wallis Test (non-parametric) was performed to analyze the *clusters'* characteristics and association with each other. The test's significance level was (Sig. 0.00), meaning that the null hypothesis was rejected, thereby indicating that the *clusters* have different characteristics among themselves. Considering the *clusters'* paired analysis, it was found that the 'Financial Reporting' and 'Tax' *clusters* do not allow a significant separation between them, since the two *clusters'* characteristics were analyzed and found to have similar characteristics regarding technical competencies, and the companies' size and nationality. According to the test results, a grouped analysis of *clusters 2* and 4 was adopted. Thus, for the results analysis, *clusters 1* Languages, 2 Financial Reporting and Taxation, and 3 Accounting Management were considered.

## 4 RESULTS AND DISCUSSIONS

### 4.1 Sample Characteristics

Considering the criteria for the company size classification adopted by the Brazilian Micro and Small Business Support Service (SEBRAE, 2018), it is evident in Table 3 that companies interested in hiring accountants are mainly small and micro businesses, which represent, respectively, 44.5% and 25.5% of the advertisements. Regarding the sector in which they operate, 48% of the advertisements did not show this information. However, among those that did, there is a higher concentration in the service sector (34.5%). For organizations that are looking to recruit accountants, industry experience is required or considered a plus in 85.0% of the job advertisements, and in 90% of the cases the job applicant is required to have work experience, and professional registration with the Regional Accounting Council is required in 97.5% of the advertisements.

With regard to the requirement of a specialization as a requirement or differential, it was required in only 7.5% of the advertisements, that is, having a specialization is not a determining factor for hiring, and an undergraduate degree in accounting would be sufficient to meet the demanded requirements. On the importance of work experience as a consideration of candidates' skill sets, Low et al. (2016) points out that employers indicated it as an important or very important factor in their recruitment decision. For Dunbar, Lain & Wynder (2016), hiring companies can use experience as a *proxy* to verify skill level.

Table 3  
Sample characteristics (n = 200)

	Sample characteristics	%
Company size	Small Business	44.5
	Microenterprise	25.5
	Large Companies	15.5
	Medium-Sized Company	14.5
Sector	Services	34.5
	Commerce	10.0
	Industry	7.5
	Confidential	48.0
Job Characteristics		
Industry Experience	Required	85.0
	Not mentioned	15.0
Work Experience	Required	90.0
	Not mentioned	10.0
Active Regional Accounting Council registration	Required	97.5
	Not mentioned	2.5
Specialization/MBA	Required	7.5
	Not mentioned	92.5

**Note.** The service sector comprises Consulting (39); Human Resources (10); Construction (5); Healthcare (7); Marketing and Advertising (2); Equipment Maintenance and Installation (2); Property Security, Education, Transportation, and Telecommunications with 1 advertisement each.

Source: Research data (2021).

#### 4.2 Most frequently required technical competencies

Table 4 shows the 20 specific competencies most demanded by hiring companies. However, 4 specific competencies have the same percentage of frequency in the advertisements. Thus, 22 of the 55 most commonly required specific competencies were highlighted. The most demanded specific competency is "Prepare tax calculations", present in 78% of the advertisements, followed by "Prepare financial statements" and "Comply with accessory obligations", with 77.5% and 68%, respectively. Of the 11 general competencies, only 7 - Accounting and Financial Reporting (C1), Managerial Accounting (C2), Finance and Financial Management (C3), Taxation (C4), Governance, Risk Management and Internal Control (C6), Business Laws and Regulations (C7), and Information and Communication Technology (C8) - are represented by the 22 most demanded specific competencies.

The general competency Accounting and Financial Reporting (C1) is the most demanded, since it is represented by 6 of the 22 specific competencies most demanded in the advertisements, which represents 27.3% of the most requested specific competencies. Within this general competency, the most demanded specific competency is "Prepare financial statements", (C1.4) present in 77.5% of the advertisements.

Another significant general competency is Taxation (C4), represented by 3 specific competencies: Prepare tax calculations (C4.2); Comply with accessory obligations (C4.1); and Apply tax planning (C4.4). This general competency is relevant to this study's results, because among the first 3 specific competencies most requested in the advertisements, two (C4.2 and C4.1) are part of this general competency. The third most demanded general competency was Information Technology (C8), represented by 2 of the 22 most demanded specific competencies: Integrated Business Management System ERP (C8.5) and Microsoft Office Excel package or equivalent (C8.4), with 26% and 25.5%, respectively.

This survey's findings regarding the most demanded general and specific competencies, with emphasis on the general Information and Communication Technology (C8) competency,

support previous studies conducted in other countries (Tan and Laswad, 2018; Douglas & Gammie, 2019; Dolce et al., 2019; Uwizeyemungu, Bertrand & Poba-Nzaou, 2020). Thus, as there is strong national and even international signaling in countries such as Australia, the UK, Italy, and Canada that knowledge in Information Technology for accountant positions is essential for these professionals to adequately perform their duties. The professionals who seek to keep themselves in constant adaptation regarding the competencies most demanded by the market increase their competitiveness in the recruitment processes and, in this case, not only in a national context, but also in the international one (Spence, 1973).

Table 4  
**Most frequently required competencies (n = 200)**

<i>Cod.</i>	<i>Specific competency</i>	<i>Areas</i>	<i>Qty.</i>	<i>%</i>
C4.2	Prepare tax calculations.	C4	156	78.0
C1.4	Prepare financial statements.	C1	155	77.5
C4.1	Comply with accessory obligations.	C4	136	68.0
C1.5	Interpret financial statements.	C1	126	63.0
C1.1	Apply accounting principles to transactions.	C1	114	57.0
C1.3	Assess accounting policies for adequacy.	C1	98	49.0
C8.5	Integrated business management system (ERP).	C8	52	26.0
C8.4	Microsoft Office package (Excel) or equivalent.	C8	51	25.5
C2.1	Data for decision making (planning, costs, analysis).	C2	47	23.5
C6.5	Analyze process and control systems for adequacy	C6	34	17.0
C7.1	Apply business laws and regulations.	C7	29	14.5
C2.2	Apply techniques (product costing, variance analysis, budgeting).	C2	24	12.0
C2.4	Analyze data and information to support decision making.	C2	23	11.5
C4.4	Apply tax planning.	C4	22	11.0
C7.2	Laws and regulations (accounting environment).	C7	20	10.0
C1.2	Apply International Financial Reporting Standards (IFRSs) or other relevant standards to transactions and other events.	C1	14	7
C3.2	Analyze an organization's cash flow and working capital requirements	C3	12	6
C6.3	Analyze an organization's risks and opportunities using a risk management framework.	C6	9	4.5
C1.6	Interpret reports that include non-financial data and information.	C1	7	3.5
C3.1	Compare the many financing sources available to an organization, including bank financing, financial instruments, and bond, equity, and treasury markets.	C3	7	3.5
C6.1	Explain the principles of good governance, including the rights and responsibilities of owners, investors, and those responsible for governance, and the role of stakeholders in governance, disclosure, and transparency requirements.	C6	7	3.5
C6.4	Analyze internal control documents related to financial reporting	C6	7	3.5

**Note.** The abbreviated words indicate the competency areas such as: C1: Accounting and Financial Reporting; C2: Managerial Accounting; C3: Finance and Financial Management; C4: Taxation; C6: Governance, Risk Management and Internal Control; C7: Business Laws and Regulations; C8: Information and Communication Technology.

Source: Research data (2021).

Furthermore, it appears that 4 general competencies - Auditing and Assurance (C5); Business and Organizational Environment (C9); Economics (C10) and Business Strategy and Management (C11) - are not being represented by any of the 22 specific competencies most demanded in the advertisements. According to Jacomossi & Biavatti (2017), one explanation for why the general competency Audit and Assurance (C5) does not make up the list of the specific competencies most demanded of accountants, may be due to these requirements being of more specific roles of the accountant, such as internal auditor or independent auditor. Among the 4 general competencies required less frequently in the advertisements, two had a higher percentage

of requirements in the advertisements, namely: Audit and Assurance (C5) and Strategy and Business (C11), with a representation of 6.5% and 1.5%, respectively. Meanwhile, the general competency Economics (C10) was not found in any of the hiring companies' advertisements. A finding that differs from that found in New Zealand by Low et al. (2016), where employers believe it is important for professionals to have competencies in economics, finance, and strategic management.

Based on the discussion presented regarding the general and specific competencies most demanded in advertisements, it is evident that in addition to knowledge in Accounting and Financial Reporting and Taxation considered by previous studies (Douglas & Gammie, 2019; Dolce et al., 2019) as basic for accountants, there is national and international market signaling for knowledge in Information Technology (C8). Moreover, some of the findings differ from those found so far in the literature, such as knowledge related to Economics (C10), which is not present in any of the advertisements collected by this research. However, in Low et al. (2016) it is considered as one of the general competencies most required by hiring companies.

Thus, the general and specific competencies most demanded in the job advertisements are aligned with the structure recommended by IFAC in IES 2, and all the competencies required by the hiring companies have their corresponding ones in IES 2. Therefore, it is possible to conclude that the competencies required in the advertisements converge with the competencies IAESB, through IES 2, states as being essential for the accounting professional.

### **4.3 Most frequently required professional skills**

Table 5 shows the 20 specific skills most requested by potential employers. Of the 5 general skills present in the coding scheme, the 5 - Intellectual (S1); Interpersonal and communication (S2); Personal (S3); Organizational (S4); and Languages (S5) - are being represented by the specific skills most demanded in the advertisements. Hence, it can be inferred that the hiring companies are giving more emphasis to the general/specific skills in their advertisements, and there is a sign from the market regarding the relevance of professionals to develop, in addition to technical competency, general/specific skills in their professional training.

This research findings regarding employers' emphasis on non-technical skills are supported by previous studies (Dunbar, Lain, & Wynder, 2016; Low et al., 2016; Dolce et al. 2019; Meuren & Voese). One of the justifications presented by recruiters is that technical knowledge can be improved through training offered by the hiring companies during the professionals' career. On the other hand, interpersonal skills, communication, and teamwork skills are inherent to the professionals' non-technical training, and therefore require more in-depth stimulation (Low et al., 2011; Dolce et al., 2019).

It turns out that the most demanded specific skill is "Demonstrate collaboration and teamwork," present in 30 advertisements (15%), followed by "Skills in applying critical thinking to solve problems" and "Review own and others' work to determine if it is in compliance", each present in 14 advertisements (7%). The skills "Communicate clearly and concisely" and "Communicate in English" also stand out, each with 13 advertisements (6.5%), along with "Anticipate challenges and plan solutions", with 10 advertisements (5%), and "Manage time and resources to meet commitments", with 9 advertisements (4.5%).

This research's findings regarding the most demanded general and specific skills reinforce previous studies (Tan and Laswad, 2018; Dolce et al., 2019). The "Demonstrate collaboration and teamwork" specific skill (S2.1) is highlighted as recurring among previous studies conducted in Australia, New Zealand, and Italy as the most demanded by hiring companies (Tan and Laswad, 2018; Dolce et al. 2019). Meanwhile, in the results found by Maelah et al. (2012), Low et al.

(2016), and Douglas & Gammie (2019) the most demanded specific skill was communication, also present among the most demanded in this study's advertisements, although in fourth place.

The findings of Meurer and Voese's (2020) study partially differ with this one, as they do not present the specific skill "Demonstrate collaboration and teamwork" (S2.1) in the list of specific skills most demanded in advertisements. Another study that partially differs from the results found by this one was that of Dunbar, Lain, and Wynder (2016), who did not identify "Skills in applying critical thinking to solve problems" as one of the most demanded by hiring companies.

Table 5  
Most frequently required professional skills (n = 200)

Cod.	Professional Skills	Areas	Qty.	%
S2.1	Collaboration, cooperation, and teamwork	S2	30	15.0
S1.2	Skills in applying critical thinking to solve problems	S1	14	7.0
S4.2	Review work to determine if it is in compliance	S4	14	7.0
S2.2	Communicate clearly and concisely	S2	13	6.5
S5.1	English	S5	13	6.5
S3.4	Anticipate challenges and plan potential solutions	S3	10	5.0
S3.3	Manage time and resources to meet commitments	S4	9	4.5
S4.5	Leadership to influence others in achieving organizational goals	S1	8	4.0
S1.1	Assess data and information from a variety of sources	S4	7	3.5
S4.1	Perform assignments and meet prescribed deadlines.	S1	6	3.0
S1.5	Respond effectively to change and solve problems	S2	5	2.5
S2.7	Present ideas and influence others to provide support and commitment	S4	4	2.0
S4.3	Manage people to motivate and develop others	S2	4	2.0
S2.3	Awareness of cultural and language differences in communications	S3	3	1.5
S3.1	Demonstrate commitment to learning	S3	3	1.5
S1.3	Identify when it is appropriate to consult experts	S1	2	1
S2.5	Apply negotiation skills to reach solutions and agreements	S2	2	1
S2.6	Apply consultative skills to minimize or resolve conflicts, solve problems, and maximize opportunities	S2	2	1
S3.2	Set high personal performance standards and monitoring through reflective activities and <i>feedback</i> from others	S3	2	1
S5.2	Spanish	S5	2	1

**Note.** The codes in the "areas" column represent skill areas such as: S1: Intellectual; S2: Interpersonal and communication; S3: Personal; S4: Organizational; S5: Languages.  
Source: Research data (2021).

The most demanded general skill in the advertisements is Interpersonal and communication (S2), it is present in 6 of the 20 specific skills, which represents 27.3% of the most demanded specific skills. This general skill is represented by the following specific skills: Collaboration, cooperation, and teamwork (S2.1); Communicating clearly and concisely (S2.2); Presenting ideas and influencing others to provide support and commitment (S2.7); Awareness of cultural and language differences in communications (S2.3); Applying negotiation skills to reach solutions and agreements (S2.5); and Apply consultative skills to minimize or resolve conflicts, solve problems, and maximize opportunities (S2.6). Low et al. (2016) and Dolce et al. (2019) highlight the relevance of professionals having specific skills regarding professional attitude in different countries' cultures, findings that are supported by those in this research.

There was a tie between three of the most demanded general skills in the advertisements: Intellectual (S1), Personal (S3), and Organizational (S4), all represented with 4 specific skills. In this regard, the specific S1 skills most demanded are: Skills in applying critical thinking to solve problems (S1.2); Assess data and information from a variety of sources (S1.1); Respond effectively to change and solve problems (S1.5); and Identify when it is appropriate to consult experts (S1.3). In S3 the most requested are: Anticipate challenges and plan potential solutions

(S3.4); Manage time and resources to meet commitments (S3.3); Demonstrate commitment to learning (S3.1) and Set high personal performance standards and monitoring through reflective activities and *feedback* from others (S3.2). Regarding S4, the specific skills most required are: Review work to determine if it is in compliance (S4.2); Leadership to influence others in achieving organizational goals (S4.5); Perform assignments and meet prescribed deadlines (S4.1); and Manage people to motivate and develop others (S4.3).

The third most demanded general skill is Language (S5), which is not present in the set of competencies and skills prescribed by IFAC in IESs 2 and 3. Thus, it was added to the coding scheme because of the frequency it is found in job advertisements. However, it is important to point out that the IAESB reinforces that educational institutions, and professionals, can adapt the structure recommended by IES 3 according to local and regional needs. This general skill's most demanded specific skills were: English (S5.1) and Spanish (S5.2), present in 6.5% and 1% of the advertisements, respectively. This finding correlates with that in Dolce et al. (2019), in which oral and written communication using a foreign language is a plus for accounting professionals. Therefore, the most demanded general and specific skills in job advertisements are aligned with the framework recommended by IFAC in IES 3, except for the language general skill, which needed to be inserted. However, the IAESB through IES 3 recommends that educational institutions and professionals undertake adaptations according to local and regional needs.

According to the evidenced findings, it seems that the intellectual, personal, and organizational skills are as important as the general technical competencies. Based on the results found, it is evident that professionals need specific skills in teamwork, critical thinking to solve problems and to review work, and also communication, English, and time management.

Despite the relevance of general/specific skills for the training of accounting professionals in Brazil, Jacomossi & Biavatti (2017) argue that accounting education is too technicist and with this the development of attributes focused on intellectual skills, communication, and interpersonal relationships in academics is challenging and, therefore, a restructuring and updating of curricula is fundamental. The authors also suggest the implementation of active teaching methods, such as, PBL, debates, and case studies as alternatives for a multidisciplinary and holistic training.

The market is looking for professionals who can guide and participate in decisions in a conscious and sustainable way, that is, a profile more in line with the current challenges faced by companies. Thus, according to the Signaling Theory (Spence, 1973), hiring companies signal the need for accounting education institutions to provide courses in their curricula, in addition to technical education, the development of interpersonal, communication, personal, and organizational skills, aiming to train professionals who respond to the current market needs and challenges. Furthermore, it is possible to conclude that the need to stimulate the development of interpersonal, communication, personal, and organizational skills is signaled not only in the national context, but also internationally. Therefore, this result highlights the relevance hiring companies are giving to a multidisciplinary and holistic training for accounting professionals.

#### **4.4 Required competency standards signaled by recruiting organizations**

The IBM® SPSS Statistics software was used to form the competencies/skills similarity patterns of the advertisements collected. In a first, hierarchical clustering was used to inspect the dendrogram and the *cluster* association table to determine the optimal number of *clusters*, so the decision on the final clustering (dendrogram cut) was  $K = 4$ , i.e. the number of *clusters*. Given this result, the non-hierarchical clustering (K-means) was applied, with  $k = 4$  and a 95% significance level, followed by an analysis of the *cluster* association table, which allowed the identification of the *cluster* in which each advertisement was grouped.

As described in the methodological procedures section, for "Cluster 2" and "Cluster 4" the tests did not allow verification of a significant separation. Therefore, these two groups were combined into a single *cluster* called Financial Reporting and Taxation, thus the ads were grouped into 3 *clusters*, as evidenced in Table 6. The result of grouping into three *clusters* is similar to Tan & Laswad (2018) and Uwizeyemungu, Bertrand & Poba-Nzaou (2020).

It is possible to note that the advertisements in the sample are unevenly distributed in the three *clusters*: the smallest *cluster*, "Languages", corresponds to only 3.5% of the sample, while the largest *cluster*, "Financial Reporting and Taxation", corresponds to 81%, and the "Accounting Management" *cluster* corresponds to 15.5%. In order to identify the general competencies/skills that contributed most to the *clusters'* formation, a mean of the sum of the proportions by competency area was calculated according to the number of advertisements presented in each competency/skill.

Despite its size, *cluster 1* is distinguished from the other *clusters* by its high need for other language skills (English and Spanish), especially when considering that professional skills are less requested in advertisements when compared to technical competencies. However, it is the one that contributes the most to this *cluster's* formation, which justifies its nomenclature. The general skill "interpersonal and communication (S2)" is also observed. In this case, the specific skill that appears most frequently is "teamwork (S2.1)". Regarding the general competencies that appear in high demand for jobs in this *cluster*, "Taxation (C4)" and "Accounting and Financial Reporting (C1)" stand out, a fact that instigated a more detailed analysis concerning the advertisements that make them up, and to contribute to the discussion, the characteristics of the hiring companies were grouped together, as shown in Table 6.

The advertisements in *cluster 1* are mostly national micro and small businesses in Southern and Southeastern Brazil. When verifying the sector in which these companies operate, it was identified that they are from sectors which require communication with international clients and suppliers (e.g., the import and export sector), a fact which may justify the requirement for a second language. In the "Accounting and Financial Reporting" competency, the most frequently requested specific competencies are: apply accounting principles (C1.1) and prepare financial statements in accordance with IFRS standards (C1.4). Regarding the "Taxation" competency, a survey conducted by Sebrae (2016) points out that the relationship of micro and small businesses with accountants, for the most part, is to perform basic services (e.g., trial balance, payroll, labor and tax obligations) and tax planning (e.g., indicate the best options for paying taxes). Therefore, it makes sense that the three general competencies are associated in this *cluster*.

Table 6  
Significant competencies/skills to form the groupings

Competencies and Skills	Cluster 1 Languages (n=7)	Cluster 2 Financial Reporting and Taxation (n=162)	Cluster 3 Accounting Management (n=31)
Accounting and Financial Reporting	0.26	0.47	0.19
Managerial Accounting	0.17	0.10	0.12
Finance and Financial Management	0.05	0.02	0.03
Taxation	0.57	0.45	0.08
Auditing and Assurance	0.02	0.01	0.03
Governance, Risk Management, and Internal Control	0.06	0.05	0.10
Business Laws and Regulations	0.05	0.10	0.02
Information and Communication Technology	0.07	0.07	0.07
Business and Organizational Environment	0.00	0.00	0.00
Economics	0.00	0.00	0.00



<i>Business Strategy and Management</i>	0.00	0.00	0.01
<i>Intellectual</i>	0.03	0.02	0.05
<i>Interpersonal and communication</i>	0.12	0.03	0.05
<i>Personal</i>	0.00	0.02	0.02
<i>Organizational</i>	0.03	0.03	0.05
<i>Languages</i>	0.71	0.01	0.03

**Note.** The highlighted cells are the standardized mean scores by competency area that contributed most to the *clusters'* formation.

Source: Research data (2021).

Table 7

### Companies' Characteristics in the Competencies/Skills standards

	<i>Cluster</i>			
	<i>Cluster 1 Languages</i>	<i>Cluster 2 Financial Reporting and Taxation</i>	<i>Cluster 3 Accounting Management</i>	
<b>Company size</b>	Small Business	4%	80%	16%
	Microenterprise	4%	82%	14%
	Large Companies	-	77%	23%
	Medium-Sized Company	3%	87%	10%
<b>Nationality</b>	National	4%	79%	17%
	Multinational	2%	87%	11%
<b>Region</b>	North	-	86%	14%
	Northeast	-	84%	16%
	Midwest	-	84%	16%
	Southeast	3%	81%	16%
	South	8%	77%	15%

Source: Research data (2021).

*Cluster 2* grouped the largest number of advertisements. The general competencies that contributed the most to its formation were: Accounting and Financial Reporting (C1); Managerial Accounting (C2); Taxation (C4), and Business Laws and Regulations (C7). We labeled this *cluster* as "Financial Reporting and Taxation". First, companies in this *cluster* strongly require competencies in preparing and analyzing financial reports, i.e., competencies that allow for a historical analysis of a company's situation and, presumably, of other organizations (e.g., competitors). This analysis can be useful for the company's performance. It is a different finding from Tan & Laswad (2018), which found that Financial Accounting had lower mean scores for all skill areas. For the authors it is possible to assume that the candidates possess these skills, but because they are considered basic they do not need to be emphasized in the advertisements.

Second, the *cluster* also brings together competencies useful for managing companies' tax obligations to the Tax Authorities, thus requiring an understanding of the laws and regulations that govern the national tax system. Regarding the hiring organizations' characteristics in this *cluster*, they are mostly medium-sized multinational companies. There is a demand for competencies that go beyond the preparation of financial reports and the determination of taxes. "Managerial Accounting" competency is also required, to measure and analyze the financial and accounting information used by managers in the company's planning and control work.

In order to do so, it is necessary to require some skills - Intellectual (S1); Interpersonal and communication (S2); Personal (S3); and Organizational (S4) - that were also grouped in this *cluster*, mainly, the specific skills of having critical thinking to solve problems and make decisions (S1.2), knowing how to work in a team (S2.1), anticipating challenges and planning solutions (S3.4), that is, being agile and proactive, besides reviewing their own work to verify its conformity

(S4.2). Thus, it is perceived in the advertisements of medium-sized companies the greater need for the management of accounting information, a finding that supports Uwizeyemungu, Bertrand & Poba-Nzaou (2020).

In *cluster 3*, the generic competencies that contributed most to their training were: Accounting and Financial Reporting (C1); Managerial Accounting (C2); and Governance, Risk Management, and Internal Control (C6). Therefore, it was called "Accounting Management". These competencies are of great relevance to companies in terms of envisioning and shaping the future and ensuring the company's performance in the medium and long term. In this *cluster*, it is also possible to observe the grouping of advertisements that demand general skills (e.g., critical thinking to solve problems and make decisions; knowing how to work in a team; being agile and proactive; and reviewing their own work for compliance). This *cluster* is formed mostly by large companies, which leads to the conclusion that as companies become larger, the need for knowledge in tax calculation is reduced, losing space to the management of information from accounting reports (Uwizeyemungu, Bertrand & Poba-Nzaou, 2020).

In an environment of constant changes, which require adaptations or new competencies/skills from the accounting professional, companies signal through job advertisements a position to be filled and the competencies/skills expected by the professionals applying for this position (Spence, 1973; Cellani & Singh., 2011). Thus, professionals can use this information for constant professional updating, aiming to meet the needs of companies according to their interests (size, sector of activity).

The study highlights a signaling by companies looking for professionals responsible for business management who understand the relevance of accounting information for organizations. Accounting management can determine the future of an organization, because it provides indicators that when examined help the companies' managerial decisions, supporting managers in their decision making. Therefore, companies demand professionals who have competencies/skills that go beyond the traditional technical knowledge (bookkeeping, tax calculation, and compliance with legislation), perspectives pointed out by studies from the late 20th century and early 21st century (Gomes, 1979; Camargo, 1991; Koliver, 1993; Martins, 1993; Marion, 1998; Cosenza, 2001; Schwez, 2001).

## 5 FINAL CONSIDERATIONS

In a globalized and dynamic environment, socio-economic changes emerge bringing threats, but also opportunities for the legitimacy and relevance of the accounting profession. As such, the accounting professional must be aware of the change signals and find ways to avoid or diminish the threats' effects, and thus take advantage of these possibilities to add value and meet the companies' real socio-economic needs. Gomes (1979) mentions an example of this change in the 1970s, which required professionals to have knowledge regarding balance sheet consolidation, monetary correction, and shareholder capital, and those who had such knowledge were able to benefit from this opportunity.

Thus, this study aimed to analyze the patterns of similarities of competencies and skills signaled in job advertisements for an accountant positions. According to the results, the study allowed for the verification that technical competencies and professional skills signaled by organizations through job advertisements are in line with those recommended by the IFAC. Therefore, IESs 2 and 3 can provide a basis for structuring specialized training programs for accounting professionals. It is noteworthy that a new skill (Language: English and Spanish) was found in the advertisements collected and was not correlated to any other skill recommended by the IESs' structure. However, it is important to point out that the IAESB recommends higher education institutions to make adaptations in IESs 2 and 3 according to regional and local needs.

The study showed that in addition to the technical competencies that are exclusive to accountants (e.g. ability to prepare and report financial statements according to accounting principles and tax knowledge), there is a demand for skills that go beyond technical knowledge. Thus, companies expect the accounting professional to be able to work in teams, apply critical thinking to solve problems, inform decisions, make decisions, and reach well-founded conclusions; demonstrate collaboration and cooperation to achieve organizational goals; know how to manage time and resources to meet professional commitments, anticipate challenges, and plan solutions. In other words, a professional who is agile and proactive, and who reviews his or her own work and that of others to ensure compliance to the required standards.

Thus, the skills that were once presented as a professional perspective (e.g. Gomes, 1979; Camargo, 1991; Koliver, 1993; Martins, 1993; Marion, 1998; Cosenza, 2001; Schwez, 2001) today are trends that have developed from the needs of companies and are reflected through signals in the social, cultural, and economic contexts in which they operate. Therefore, this survey contributes by highlighting them, enabling professionals to anticipate and adapt to the organizations' socio-economic needs. Furthermore, the competencies and skills were analyzed in *clusters*, since organizations require multiple competencies/skills concurrently for accountant positions. In this regard, the study points to 3 groups of competencies/skills that the hiring organizations demand from the accounting professional, "Languages", "Financial Reporting and Taxation", and "Accounting Management".

Practically speaking, the study provides accounting professional bodies, educators, business managers, recruitment consultants, and job *website* managers with a framework for understanding the requirements needed when recruiting an Accountant. As far as professional accounting bodies and educators are concerned, this study's findings may contribute to the debate regarding the skills-based approach to training accountants beyond technical activities. Specifically, when highlighting professional skills, the study indicates those that require greater attention throughout the accounting professional's training, as these are essential for the accountant who operates in a dynamic environment (Low et al. 2016; Douglas & Gammie, 2019; Maelah et al. 2012). Moreover, it is necessary to regularly examine the competency requirements demanded by the labor market and to check to what extent they are covered by the competency/skills framework advocated by the institutions that look after the profession.

For business managers, recruitment consultants, and job *website* managers, planning to recruit an accounting professional can provide a better understanding of the competencies/skills underlying their own job advertisements, thus signaling a more explicit message to candidates. Based on the survey results, recruitment consultants and job *website* managers can better help companies intending to hire accountants to present their competency/skills requirements according to the desired profile, because the signals (requirements) issued by the market must follow the socio-economic context experienced.

Therefore, just as the competencies/skills of individuals are signals for hiring in a labor market context, the requirements demanded by the market are a point of attention for employees (Spence, 1973). For the author, the signaling power of education, work experience, and other observable personal characteristics can be used to distinguish potential employees in a labor market. On that understanding, Spence (1973) indicates that competencies and skills are a beacon that distinguishes the types of employees in an asymmetric information context, a typical labor market scenario, as analyzed in this study. The author emphasizes that education and worker earnings are positively related, this is not because education increases worker productivity, but because employers consider that an individual with a higher educational level will have greater skills and competencies to perform certain jobs (Spence, 1973).

Although this study makes theoretical and practical contributions, it also has limitations that can be addressed in future research. The first is related to the sample (sample size, sample

selection parameters). The second is related to the focus on technical competencies and professional skills. Future research can also relate professional values, ethics, and attitudes since professional competency is the integration and application of: technical competency, skills, and professional values, ethics, and attitudes. The third limitation is that the survey was applied to the Brazilian context. However, it can be applied in other countries and can be enlightening for accounting educators, in general.

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## APPENDIX

### Full Table

#### Coding Scheme for Technical Competencies and Skills

C. Technical Competencies	
C1 Accounting and Financial Reporting	C1.1 Apply accounting principles to transactions and other events.
	C1.2 Apply International Financial Reporting Standards (IFRSs) or other relevant standards to transactions and other events.
	C1.3 Assess the adequacy of accounting policies used in the preparation of the financial statements.
	C1.4 Prepare financial statements, including consolidated financial statements, in accordance with IFRSs or other relevant standards.
	C1.5 Interpret financial statements and related disclosures.
	C1.6 Interpret reports that include non-financial data and information.

C2 Managerial Accounting	C2.1	Prepare data and information to support the management's decision making process on topics such as planning and budgeting, cost management, quality control, performance measurement, and benchmarking.
	C2.2	Apply techniques to support the management's decision making process, including product costing, variance analysis, inventory management, and budgeting and forecasting.
	C2.3	Apply appropriate quantitative techniques to analyze cost behavior and cost drivers.
	C2.4	Analyze data and information to support the management's decision making process.
	C2.5	Evaluate the performance of products and business segments
C3 Finance and Financial Management	C3.1	Compare the many financing sources available to an organization, including bank financing, financial instruments, and bond, equity, and treasury markets.
	C3.2	Analyze an organization's cash flow and working capital requirements
	C3.3	Analyze the current and future financial position of an organization, using techniques including index analysis, trend analysis, and cash flow analysis.
	C3.4	Assess the adequacy of the components used to calculate an organization's capital cost.
	C3.5	Apply capital budgeting techniques in evaluating capital investment decisions.
	C3.6	Explain market, asset-based, and revenue assessment approaches used for investment decisions, business planning, and long-term financial management.
C4 Taxation	C4.1	Explain national taxation compliance and filing requirements.
	C4.2	Prepare direct and indirect tax calculations for individuals and companies.
	C4.3	Analyze the tax issues associated with non-complex international transactions.
	C4.4	Explain the differences between tax planning, tax avoidance, and tax evasion.
C5 Audit and Assurance	C5.1	Describe the objectives and phases involved in conducting a financial statement audit.
	C5.2	Apply International Standards on Auditing or other relevant auditing standards, laws, and regulations applicable to a financial statement audit.
	C5.3	Assess the risks of material misstatement in the financial statements and consider the impact on the audit strategy.
	C5.4	Apply quantitative methods used in audit work.
	C5.5	Identify relevant audit evidence, including contradictory evidence, to inform decisions, make decisions, and reach well-founded conclusions.
	C5.6	Conclude whether sufficient and appropriate audit evidence was obtained.
	C5.7	Explain the main elements of the assurance work and the applicable standards that are relevant to this work.
C6 Governance, Risk Management, and Internal Control	C6.1	Explain the principles of good governance, including the rights and responsibilities of owners, investors, and those responsible for governance, and the role of stakeholders in governance, disclosure, and transparency requirements.
	C6.2	Analyze the components of an organization's governance structure.
	C6.3	Analyze an organization's risks and opportunities using a risk management framework.
	C6.4	Analyze the internal control components related to financial reporting.
	C6.5	Analyze the adequacy of systems, processes, and controls for collecting, generating, storing, accessing, using, or sharing data and information.



C7 Business Laws and Regulations	C7.1	Explain the laws and regulations governing the different forms of legal entities
	C7.2	Explain the laws and regulations applicable to the environment in which professional accountants operate.
	C7.3	Apply data protection and privacy regulations when collecting, generating, storing, accessing, using or sharing data and information.
C8 Information and Communication Technology	C8.1	Explain the impact of Information and Communication Technology (ICT) developments on an organization's environment and business model.
	C8.2	Explain how ICT supports data analysis and decision making.
	C8.3	Explain how ICT supports risk identification, reporting, and management in an organization.
	C8.4	Use ICT to analyze data and information
	C8.5	Use ICT to increase communication efficiency and effectiveness
	C8.6	Apply ICT to increase the efficiency and effectiveness of an organization's systems.
	C8.7	Analyze the adequacy of ICT processes and controls.
	C8.8	Identify improvements in ICT processes and controls
C9 Business and Organizational Environment	C9.1	Describe the environment in which an organization operates, including key economic, legal, regulatory, political, technological, social, and cultural aspects.
	C9.2	Analyze the aspects of the global environment that affect international trade and finance
	C9.3	Identify the characteristics of globalization, including the role of multinationals and emerging markets.
C10 Economics	C10.1	Describe the fundamental principles of microeconomics and macroeconomics.
	C10.2	Describe the effect of changes in macroeconomic indicators on business activity.
	C10.3	Explain the different types of market structures, including perfect competition, monopolistic competition, monopoly, and oligopoly.
C11 Business Strategy and Management	C11.1	Explain the various ways in which organizations can be designed and structured.
	C11.2	Explain the purpose and importance of the different types of functional and operational areas in organizations.
	C11.3	Analyze the external and internal factors that can influence an organization's strategy.
	C11.4	Explain the processes that can be used to develop and implement an organization's strategy.
	C11.5	Explain how organizational behavior theories can be used to improve individual, team, and organizational performance.
<b>S. Professional Skills</b>		
S1 Intellectual	S1.1	Assess data and information from a variety of sources and perspectives through research, integration, and analysis.
	S1.2	Apply critical thinking skills to solve problems, inform decisions, make decisions, and reach well-founded conclusions.
	S1.3	Identify when it is appropriate to consult experts
	S1.4	Recommend solutions to unstructured and multifaceted problems.
	S1.5	Respond effectively to changing circumstances or new information to solve problems, inform decisions, make decisions, and reach well-founded conclusions.

S2 Interpersonal and communication	S2.1	Demonstrate collaboration, cooperation, and teamwork when working toward organizational goals.
	S2.2	Communicate clearly and concisely when presenting, discussing, and reporting in formal and informal situations.
	S2.3	Demonstrate awareness of cultural and language differences in all communications.
	S2.4	Apply active listening and effective interviewing techniques.
	S2.5	Apply negotiation skills to reach solutions and agreements
	S2.6	Apply consultative skills to minimize or resolve conflicts, solve problems, and maximize opportunities
	S2.7	Present ideas and influence others to provide support and commitment
S3 Personal	S3.1	Demonstrate a commitment to lifelong learning.
	S3.2	Set high personal performance standards and monitoring through reflective activities and <i>feedback</i> from others
	S3.3	Manage time and resources to meet professional commitments.
	S3.4	Anticipate challenges and plan potential solutions
	S3.5	Apply an open mind to new opportunities.
	S3.6	Identify the potential impact of personal and organizational bias
S4 Organizational	S4.1	Perform assignments according to established practices to meet prescribed deadlines.
	S4.2	Reviewing their own work and that of others to determine if it complies with the organization's quality standards.
	S4.3	Apply people management skills to motivate and develop others.
	S4.4	Apply delegation skills to deliver assignments.
	S4.5	Apply leadership skills to influence others in working toward organizational goals
S5 – Languages	S5.1	Communicate in English
	S5.2	Communicate in Spanish

**Note.** The language area was included during the advertisements collection.

Source: prepared by the authors based on IAESB (2019a) and IAESB (2019b).