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## Examining the fit between supply and demand of the accounting professional's competencies: A systematic literature review

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## ABSTRACT

This paper reviews the accounting and educational literature, focusing on the supply of and demand for the accounting professional's competencies. Its main objective is to identify the gaps between demand and supply of the accounting professional's competencies that have been evidenced in literature and to define constructs that substantiate a conceptual model of the fit between supply and demand. Through a systematic literature review, 122 empirical articles from the last 15 years are analyzed. The results reveal that there has been consistent and growing research in this field worldwide. Research approaches and methodologies have been quite homogeneous, with most authors opting for quantitative survey strategies. Content analysis yields a significant result by identifying seven gaps, shedding light on areas where alignment between constructs may be lacking, potentially posing challenges to achieving desired outcomes or objectives. Understanding these gaps can help researchers, policymakers, and practitioners take informed actions to address the identified issues and improve the effectiveness and efficiency of their endeavors. Furthermore, this analysis provides a valuable foundation for future research to delve deeper into the underlying causes of these gaps and develop targeted strategies for fostering convergence and achieving desired outcomes.

## 1. Introduction

In a world of constant changes, the job market adjusts itself, looking for professionals with the appropriate competencies for the new or expected context. This competency requirement is directly reflected in recently graduated students and indirectly in higher education. If the competencies developed in education do not match the needs of the labor market, society will be affected (Ridwan, 2017; Yorke, 1992), so monitoring the fit between demand and supply must be close and constant. This is even more important if the profession under analysis is evolving, as is the accounting profession, which has been subject to significant changes in recent decades. Several factors have caused these changes, including rapid technological developments, more globalized and easily facilitated communications, and legislative and regulatory changes (Bui & Villiers, 2017; Burns & Scapens, 2000; Olivier, 2000; Warren et al., 2015).

Professional accounting bodies have responded to these challenges by developing competency frameworks (Institute of

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Management Accountants [IMA], 2019; International Federation of Accountants [IFAC], 2019) and reporting on future careers in accounting (Association of Chartered Certified Accountants [ACCA], 2020). So they deal with the changes, face foreseeable difficulties, and seize presumable opportunities. Their main concern is how jobs will adapt, and competencies will transform; however, the link to educational institutions is not always obvious. This is unfortunate, as a collaboration between stakeholders appears essential if misalignment is to be reduced or eliminated (Ahmed, 2019; Osmani et al., 2020).

On the part of the academic community, research has been generous. A substantial volume of studies has addressed the competencies of accounting graduates to date (e.g., de Lange et al., 2006; Dolce et al., 2020; Gray, 2010; Howcroft, 2017; Jackling & Lange, 2009; Kavanagh & Drennan, 2008; Paisey & Paisey, 2010; Tan & Laswad, 2018). If some focus only on one of the sides (demand or supply), others approach both to find the existence or not of gaps. However, what did not emerge is a uniform conclusion or even a common strategy. No consensus theory addresses the development of competencies among accounting graduates or students. This shortcoming is consistent with the reviews of higher education research, where there have been criticisms of the very limited extent and type of theory used in accounting education research (Haggis, 2009; Tight, 2004).

Recently, several authors have reviewed the literature on the impacts of emerging or digital technologies on the accounting profession (Aguar & Gouveia, 2020; Desplebin et al., 2021; Kroon et al., 2021; Moll & Yigitbasioglu, 2019; Pan & Seow, 2016; Tsigiris & Bowyer, 2021). Overall, the conclusion is that there is a need for more (empirical) research but that the impacts are significant and should be considered by higher education institutions. Before these, several specific competencies had already been focused on in literature reviews, such as communication skills (Siriwardane & Durden, 2014), graduates' attributes (Osmani et al., 2015), and critical thinking (Latif et al., 2019). Palmer et al. (2004) reviewed several international competency studies and concluded about the needed competencies for entry-level accountants.

However, all these review studies draw a picture of the desired competencies for accounting graduates but do not identify or assess the convergence with the expected competencies. As this correspondence is fundamental for the accounting profession (Osmani et al., 2015; Paseswark, 2021), we propose to study the fit between demand and supply of the competencies of the accounting professional. On the supply side, we will limit the study to higher education, which provides most of the accounting professional's initial competencies. On the demand side, we will consider the labor market, adopting a perspective that envisions society as the recipient of services provided by higher education (Richardson, 2005; Ridwan, 2017; Waldmann & Ratmatunga, 2011).

Ascertaining the current research situation, the main objective of this paper is to assess the accounting and educational literature, focused on the convergence between the expectations of the professional accounting labor market and the supply of higher education institutions of accounting professional's competencies. With this analysis, we intend to build a conceptual framework that contributes to the theoretical foundation in the field and encourages future investigation.

Two research questions guide the literature analysis:

1. What gaps are evidenced in the literature between the demand and supply of the accounting professional's competencies?
2. How do these gaps fit within the supply and demand framework for the accounting professional's competencies?

This work will answer these research questions by systematically reviewing the recent literature, following the five-step approach of a systematic literature review, as described by Denyer and Tranfield (2009, pp. 671–689): (1) formulate the research questions; (2) locate studies; (3) select and assess these studies; (4) analyze and synthesize; and (5) report and use the results.

## 2. Contribution

The competencies gap (often called the skills gap) has been a global issue for decades. Originating from constraints related to supply (universities, educators, students), they represent a mismatch between supply and demand that harms the performance of professions (Badillo-Amador & Vila, 2013; Palmer, 2018). The accounting profession is no exception. Although the field is an object of continuous study, there is a lack of studies addressing the fit between the demand and supply of the accounting professional's competencies. So, this study's first contribution is to fill the gap in the literature regarding this fit. Although there were already several systematic reviews of the literature that addressed specific competencies, none of them focused on supply-demand convergence.

Including a demand-side perspective can add innovative interpretations to the models studied so far. So, a second contribution is a conceptual framework that systematizes and structures the field of research, providing a potential vision of the fit between the labor market and higher education. It allows the clear identification of opportunities for future research and the development of future studies focused on the identified gaps. In addition, a substantial body of avenues for future research is also provided.

A third, more practical contribution is provided to higher education institutions. Firstly, it involves the identification of different actors associated with each construct and, consequently, each gap. Secondly, it offers an illustration of how these constructs are interconnected. Higher education institutions should use these research findings to facilitate and enhance the planning and development of their (future) accounting courses.

The rest of this paper is structured as follows. The next section sets out the methodology and fundamental principles of the systematic literature review. Section 4 presents and discusses the descriptive results, providing a global view of the topic. Section 5 presents the conceptual framework, highlighting the identified constructs and gaps, and Section 6 reveals an analysis of the gaps and suggestions for future research. Section 7 concludes this paper, highlighting its limitations and weaving some final considerations.

### 3. Methodology

According to Snyder (2019), a systematic review aims “to identify all empirical evidence that fits the pre-specified inclusion criteria to answer a particular research question or hypothesis” (p. 334). Using explicit and systematic methods when reviewing articles minimizes any possible bias and provides reliable findings from which conclusions can be taken and decisions can be made (Moher et al., 2010). As is valid for all research, systematic reviews should be reported comprehensively and transparently to allow readers to assess the investigation’s strengths and weaknesses (Liberati et al., 2009). It will also enable other researchers to replicate the process and achieve identical results (Xiao & Watson, 2019).

To accomplish this transparent systematization, this paper is structured by following the method outlined in the Preferred Reporting Items for Systematic review and Meta-Analysis (PRISMA) Statement (Moher et al., 2010), updated in 2021 by Page et al. (2021). The PRISMA flow chart that illustrates the different phases of this systematic literature review is shown in Fig. 1.

#### 3.1. Article collection

The first step to applying the systematic review method is to identify the location of relevant articles. The Web of Science (WoS) and SciVerse Scopus (Scopus) databases were preferred, given their scope, quality, and prestige, which ensures the quality of the articles collected (Gasparyan et al., 2013). Although the research was carried out in only two databases, they cover the majority of the high-quality publications in the social sciences (Gasparyan et al., 2013).

The keywords were defined to connect the accounting profession with the demand or supply of competencies. ‘Competencies’ is a comprehensive concept that may include knowledge, skills, attitudes, traits, motives, attributes, characteristics, personal qualities, etc. However, in the context under study, researchers use one of two designations: competency or skill, so these two designations (and their possible ramifications) were placed on one side. On the other side, there are still two components: demand and supply. These are represented, respectively, by the labor market and higher education.<sup>1</sup> The search key used in both databases (WoS and Scopus) is the following:

“skill” OR “skills” OR “competenc\*”) AND (“accountan\*” OR “account\* profession\*” OR “account\* graduate\*” OR “account\* undergraduate\*” OR “account\* student\*” OR “account\* scholar\*” OR “account\* education” OR “account\* study” OR “account\* studies”)

Using the Boolean operators AND and OR, we guarantee that at least one of the concepts from the first and one from the second part is included.

Thus, on February 11, 2022, a basic search in ‘title, abstract, author keywords, and keywords plus’ was conducted at the WoS Core Collection (indexes: SCIE, SSCI, AHCI, ESCI, CPCI, BKCI, CCRIC). This search returned 979 results. The document types and language filters were applied, restricting the results to ‘articles’ written in ‘English’. These restrictions reduced the sample from 979 initial results to 603 articles that meet the defined conditions. We used time-period limitation as a final filter. As it is intended to identify the current convergence between the supply and demand of the accounting professional’s competencies, we decided to include articles from the last 15 years (2006–2021). This option will still allow obtaining relevant data to construct a conceptual framework. The time-period restriction left us with a final sample of 569 articles.

A combined search with similar content was conducted on the Scopus database on the same date. This search returned 1574 results. The document types and language filters were applied, restricting the results to ‘articles’ written in ‘English’. These restrictions reduced the initial sample by 370 works, leaving 1204 articles that met the defined conditions. Finally, as explained above, we used time-period limitation, limiting the results to ‘>2005’, which gave us a final sample of 919 articles.

The 1488 articles (569 of WoS and 919 of Scopus) returned using the combined search sequences were exported to Excel. The first step was eliminating duplicates, leaving 1078 articles to be fully assessed. Explicit inclusion and exclusion criteria were defined (Table 1) to ensure that all papers could be consistently evaluated with less subjective opinions. These criteria are derived from our study’s objective, guided by the two research questions.

A brief explanation of the exclusion criteria may guide the reader. “Not empirical” articles were excluded as they will not answer the research questions posed. The “loosely related” articles LR-1, LR-2, and LR-3 address some aspect of professional accounting competencies but not within the sought perspective. For example, LR-1 incorporates an investigation examining the effect of math and communication skills on major course selection; LR-2 includes a study investigating which accounting knowledge is needed by managers of various enterprise administration levels. LR-3 was excluded because we intended to study general education and not any kind of experimental teaching. As for the “partially related” articles PR, their focus is on the competencies of the accounting professional, but not from a demand and/or supply perspective. For example, articles that deal with the development of competence maps or articles that investigate the pressures to incorporate specific competencies in teaching accounting.

So, after removing duplicates, the 1078 pre-selected articles were reviewed by reading their titles and abstracts. This screening process was employed to exclude papers that (1) do not present empirical research (NE), (2) do not address the accounting professional’s competencies (NR), or (3) present teaching cases, teaching notes, or instructional cases (LR-4). This process reduced the

<sup>1</sup> The search key was kept very broad, restricting only skills or competencies on the one hand and accounting professionals on the other. To add words like “market” or “workplace”, they would have to be restricted by “accountants’ market” or “accountants’ workplace,” which does not give any additional articles.

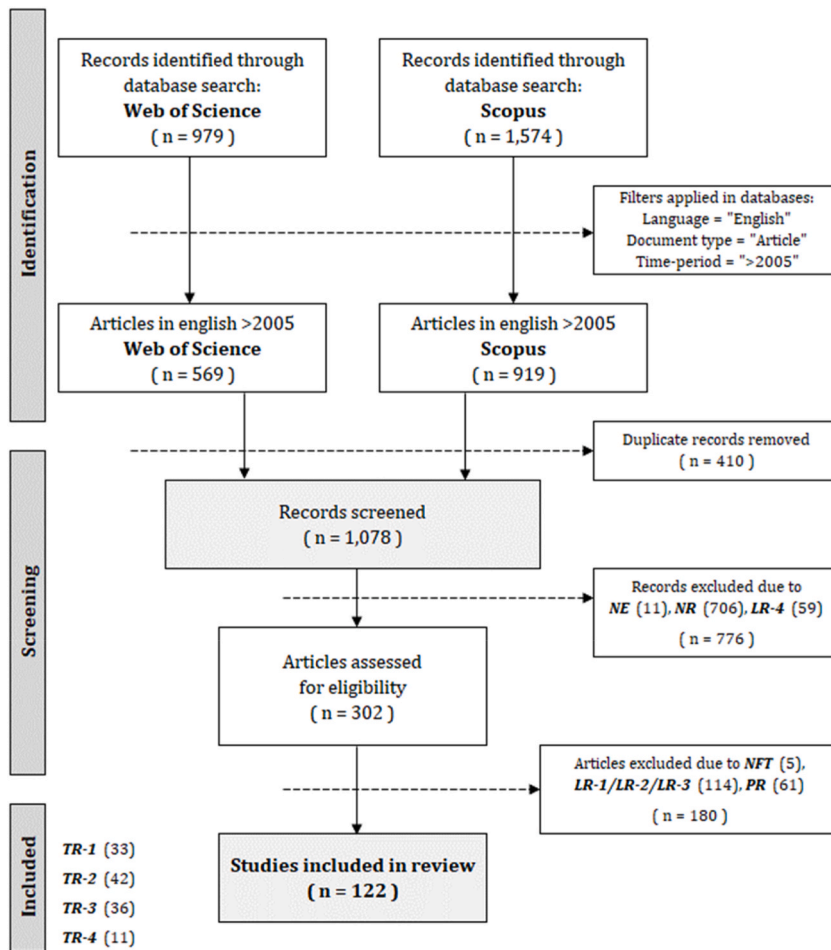


Fig. 1. Search protocol (adapted from Page et al., 2021).

**Table 1**  
Inclusion and exclusion criteria.

I/E Criteria	Reason for inclusion/exclusion
<b>Exclusion criteria:</b>	
No full text	NFT No full text available
Not empirical	NE The article does not present empirical research (e.g., literature reviews, commentaries, etc.)
Not related	NR The article does not address/focus on the accounting professional's competencies
Loosely related	LR-1 The article addresses the accounting professional's competencies as a measure of another construct
	LR-2 The article addresses the accounting professional's competencies to perform functions that are not usually those of an accountant
	LR-3 The article addresses the accounting professional's competencies as an output of a specific teaching format/case/application/choice.
	LR-4 The article presents a teaching case/teaching note/instructional case
Partially related	PR The article focuses on the accounting professional's competencies without approaching their actual or future supply or demand (university/market)
<b>Inclusion criteria:</b>	
Totally related	TR-1 The article focuses on the supply of the accounting professional's competencies (taught/acquired/developed in university)
	TR-2 The article focuses on the demand for the accounting professional's competencies (expected/desired/required by the market)
	TR-3 The article focuses on both the supply and the demand of the accounting professional's competencies
	TR-4 The article focuses on the fit between the supply and the demand of the accounting professional's competencies (gaps)

eligible articles to 302. Then, the full-text articles were obtained, excluding five that were unavailable (NFT) from the analysis. At this point, articles that do not focus on the demand or supply of the accounting professional's competencies were excluded (LR-1, LR-2, LR-3, and PR), and the remaining articles were distributed into four categories (TR-1, TR-2, TR-3, and TR-4).

Finally, all eligible papers were introduced in Citavi 6.11 (reference management and knowledge organization software) to be subject to content analysis, making it possible to highlight the answers to the research questions.

### 3.2. Data collection

Three types of information were collected from each of the included articles. First, the fundamental data of the papers were collected and placed in a table, including author(s) name(s), year of publication, paper title, and journal title. This information is presented in Appendix A.

Then, data considered relevant to describe the type of research carried out was collected and inserted into an Excel sheet, including all data analyzed descriptively in Section 4, such as regional focus (country and continent), research approach, research methodology, and research tools. One of the researchers extracted all previous data. As these are objective classifications, this will not raise any problems.

Finally, the third type of information, specific data that will allow us to answer the already stated research questions, was extracted and subject to content analysis using Citavi 6.11. Both researchers worked collaboratively on the same project. After the first screening, three major categories were created: (1) Theory/framework, (2) Findings about perceptions/existence of competencies, and (3) Findings about gaps. The first category will help define the basis of our framework. The findings about perceptions include categorizing actors and their perceptions, which will shape the constructs. Finally, the findings related to gaps will link the various constructs. One of the researchers analyzed all 122 articles and categorized the contents into subcategories of the three main categories. Subcategories were created as the articles were analyzed. After that, the second investigator did the same thing, with the advantage that many subcategories were already made. Ultimately, the researchers gathered to explore the contents that raised doubts, to analyze and overcome them.

## 4. Descriptive results

The reviewed articles show that empirical research on the fit between supply and demand for the accounting professional's competencies has been relatively consistent and homogeneous over the analyzed period. Above all, consistency can be seen in the number of papers published annually, which has gradually increased. Homogeneity is considerable in research approach, methodology, and tools, although some different tools have recently been used (e.g., PLS-SEM, IQA). Data that allow a general overview of the selected articles are presented in this section.

The analysis of the number of publications (Fig. 2) indicates that the theme remains current. The level of publications has increased gradually over the last 15 years.

Our research questions connect two research areas (accounting/management and education) reflected in the journals where the articles were published. Table 2 identifies the journals representing 37% (45 articles) of the publications, showing that the top three journals have this dual focus on Accounting (Management) and Education.

Regarding the regional focus, which was considered according to the location of the data, publications from 37 countries were found, spread over six continents. The top five countries with the most publications include the United States (18 articles), Australia (17 articles), Malaysia (11 articles), the United Kingdom (11 articles), and South Africa (7 articles). Six of the total 122 articles had more than one regional focus, and three had no identifiable regional focus.

The most adopted research approach is quantitative, accounting for 67% of the selected studies. Only 17% of the studies used a mixed approach, and 16% used a qualitative approach. Regarding the research methodology, there is substantial homogeneity, with 83% of the authors choosing to develop a survey methodology. Other methodologies include archival and documentary research (11%) and case studies (2%).

It was possible to identify seven different theoretical angles, namely: institutional theory (Crawford et al., 2011; Douglas & Gammie, 2019), theory of constructive alignment (Pan & Perera, 2012), neo-correspondence theory (Coady et al., 2018; Pan & Perera,

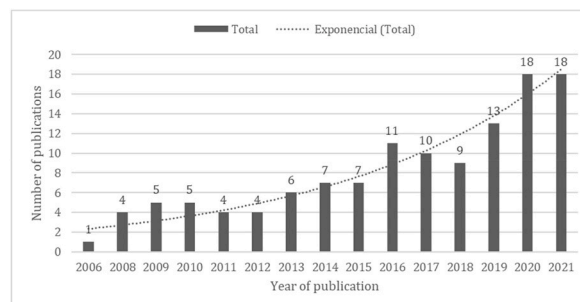


Fig. 2. Total publications per year.

**Table 2**  
Journals with the highest number of selected articles.

	Journal	Article			Scimago indicators (2021)	
		Quant.	%	% Accum.	Quartile	H-Index
1	Accounting Education	25	20.5%	20.5%	Accounting - Q2 Education - Q1	41
2	Journal of Accounting Education	5	4.1%	24.6%	Accounting - Q1 Education - Q1	38
3	Journal of Education for Business	5	4.1%	28.7%	B.,M.&Account. - Q2 Education - Q2	48
4	Asian Review of Accounting	4	3.3%	32.0%	Accounting - Q3 Finance - Q2	25
5	Accounting and Finance	3	2.5%	34.5%	Accounting - Q2 Finance - Q2	52
6	Advances in Accounting Education: Teaching and Curriculum Innovations	3	2.5%	37.0%	B.&Int.Manag. - Q3 Education - Q2	9
-	69 other journals	77	63.0%	100.0%	-	-
	<b>Total</b>	<b>122</b>	<b>100.0%</b>			

2012), media richness theory (Stone & Lightbody, 2012), stakeholder theory (Ridwan, 2017), human capital theory (Adhariani, 2020; Mhlongo, 2020), and job market signaling theory (Uwizeyemungu et al., 2020). It should be noted that only nine of the 122 articles defined their theoretical angle, which conveys that no theory brings consensus in its application to this specific field of investigation. The scarcity of studies with a theoretical framework is in line with prior literature (Haggis, 2009; Tight, 2004) and leads to the need for more theoretical developments in this area, reinforcing the importance of the work done in this article.

Several authors used already established frameworks, often adapted, to validate or compare the results obtained. This was the case with the professional capability framework (Wells et al., 2009), educational quality framework (Wells et al., 2009), and Bui and Porter's (2010) expectation–performance gap framework (Al Mallak et al., 2020; Anis, 2017; Howcroft, 2017). Other authors used a similar technique, basing their study not on an already validated framework but on studies already carried out and validated by other researchers. The advantage is obvious: (part of) the validation has already been carried out and allows direct comparisons. However, a generally accepted theoretical model has not emerged.

## 5. Conceptual framework

Content analysis of the articles allowed the construction of a conceptual framework that encompasses and structures the research dealing with the convergence of demand and supply of the accounting professional's competencies. In the following sections, we discuss the construction of the framework. The format of its basic structure and the constructs that compose it are addressed, and finally, the gaps that emerged between the various constructs are presented.

### 5.1. Framework development

The perspective adopted by the authors (demand vs. supply) was not found in any existing model that addresses the fit of expectations with performance in the accounting professional's competencies field.

Based on previous literature, Bui and Porter (2010) proposed a comprehensive framework for accounting education's expectation-performance gap. The framework was validated using a case study where they interviewed a small number of employers, students, graduates, and educators. The small number of participants is a limitation of the study, indicated by the authors, thus highlighting future research opportunities to improve the model.

Since that study's publication, several authors have used its framework to investigate the expectation-performance gap. In our selected articles, we found research focused on Sri Lanka (Abayadeera & Watty, 2014), Egypt (Anis, 2017), and Saudi Arabia (Al Mallak et al., 2020) that used the expectation-performance framework. Even though these authors found empirical evidence supporting parts of the model, none questioned its comprehensiveness. From an educational point of view, it appears to be adequate; however, it lacks a market perspective.

Howcroft (2017) applied the Bui and Porter framework to the United Kingdom and Irish reality, identifying and incorporating some relevant changes to the framework, as is the case of the professional accounting bodies' perspective. He adjusted the model to a measurable reality, investigating the educational viewpoint and a more generic reality, showing a market perspective. For this, he changed the designation of the 'educators' performance gap' to 'graduate competence assessment gap', evidencing the difference in assessment between the two actors (university and market). He also changed the name of the 'constraints gap' to 'education constraints gap'. Thus, he distanced the framework from its internal educational focus, making it more objective and connected to the profession. All these alterations align with our analysis, making this model a more coherent basis for our framework. Even so, Howcroft's framework does not embrace a supply/demand perspective, which hinders its direct adoption in the context of this investigation.

Meanwhile, in Coady et al.'s (2018) article, we found a reference to Richardson (2005), where the curriculum requirements for entry-level management accounting are explored, utilizing the SERVQUAL framework as its theoretical foundation. SERVQUAL is a



multidimensional research instrument projected by Parasuraman et al. (1985) to capture consumer expectations and perceptions of a service, measuring service quality. The correspondent service quality model, popularly known as the ‘gaps model’, has been applied in various contexts and cultural settings.

Richardson (2005) chose to apply this model in his research since it is a perceptions-minus-expectations construct that compares customers’ expectations with their perceptions of the level of service. In the market and university relationship, he understood employers as the ‘consumers’ of graduates’ competencies, as several other authors in this research area do (Ridwan, 2017; Waldmann & Ratnatunga, 2011; Yorke, 1992). He states that “it could be argued that considering employers as ‘customers’ of university teaching departments is not only valid, but also that the SERVQUAL model forms an appropriate basis for understanding employers’ perceptions of the coverage of topics in the university curriculum, and whether there are any gaps in the preparation of graduates for, say, entry-level positions.” (Richardson, 2005, p. 56). This point of view is appropriate to our investigation from a supply (university) and demand (market) convergence perspective, so our conceptual framework was built considering the previously presented models, as shown in Fig. 3.

The service quality structure was adapted to our study by creating three constructs (components) on the supply side and two on the demand side. The content analysis to build the framework focused on three aspects of competencies assessment: how, who, and what. In the articles under study, the assessment of competencies is commonly done in two ways: either through the perception of one (or several) of the actors or by directly evaluating the competencies’ presence. The five main actors identified as the primary units of analysis are students, graduates, academics, employers, and practitioners. Among these, students, graduates, and academics represent

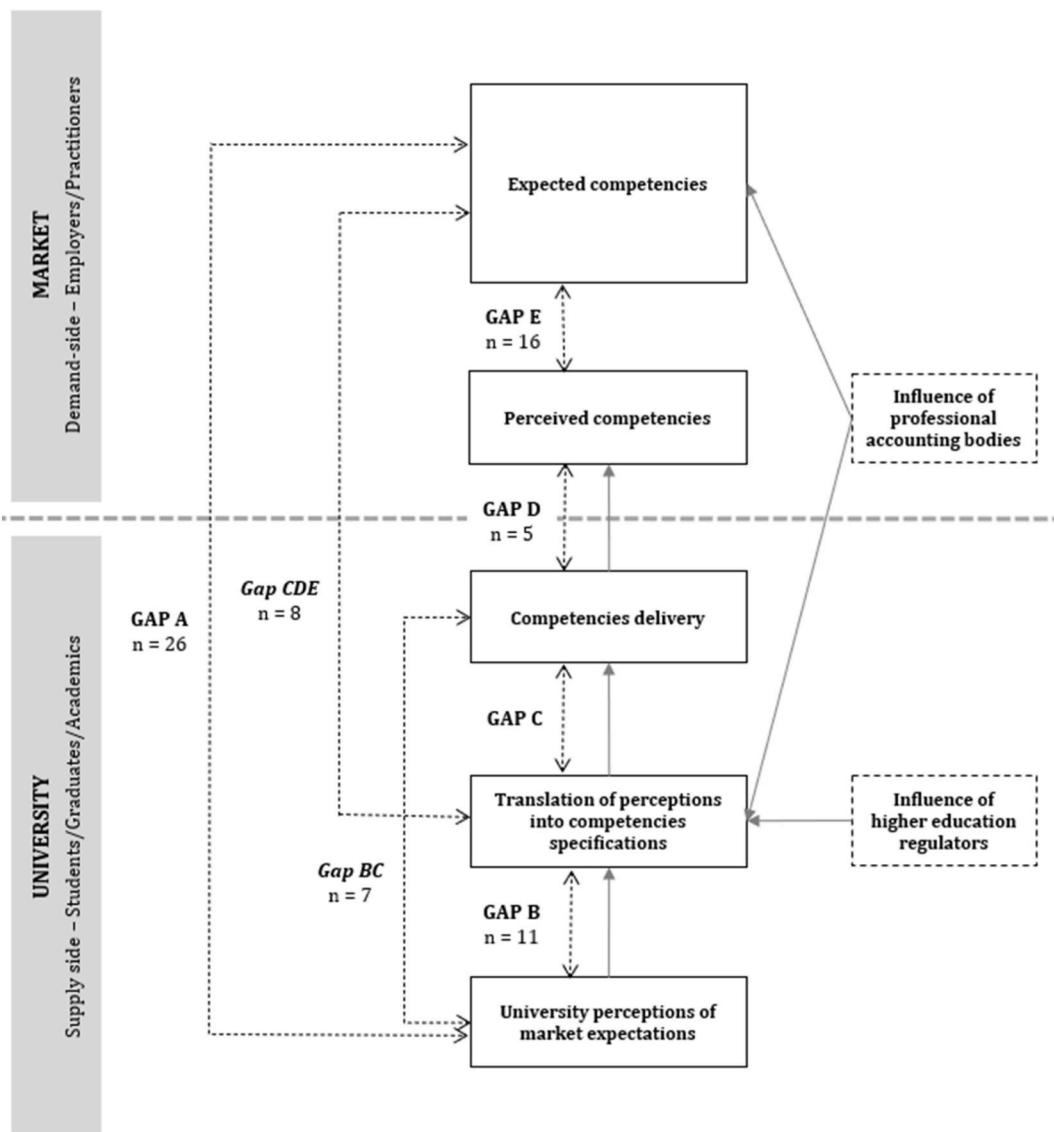


Fig. 3. Conceptual model of the university-market convergence of accounting.

the supply side, while employers and practitioners represent the demand side.

Finally, we analyzed what the articles were evaluating. We gathered the perspective from each article, which we restrained to seven categories: competencies requirement, importance of the competencies, competencies that should be taught, competencies taught in university, competencies acquired in university, demonstrated competencies, and gap existence. The constructs are based on a total of 241 perspectives collected from the analyzed articles and will allow the analysis of gaps between them. Table 3 reflects the categorization used to identify the five constructs incorporated in the framework.

In addition to the actors already mentioned, professional accounting bodies and education regulatory bodies were referred to in almost all articles. In most parts of the world, these bodies greatly influence the competencies of accounting graduates. Professional bodies determine accounting graduates' desired skills, competencies, and expected attributes through the accreditation process of accounting programs (Mhlongo, 2020). Education regulatory bodies guarantee the quality of higher education through the assessment and accreditation of higher education institutions and their study cycles (Apostolou & Gammie, 2014). Therefore, these bodies were included in the framework as influential entities.

5.2. Framework constructs

The placement of constructs in the framework followed the actual order of their appearance, starting with the supply side (at the bottom). An arrow with a solid line links those constructs that impact others. For example, university perceptions of market expectations affect how competencies are specified in accounting course curricula. Likewise, these specifications will impact the delivery of competencies and so on. Table 4 shows the definitions and ways of measuring our framework constructs.

A general difference between the previous models and our framework is that the latter includes more observation units. Students and graduates on the supply side and professionals on the demand side were added to the educators and employers incorporated by Bui and Porter (2010) and Howcroft (2017). This variation is reflected in all five constructs of the framework.

Other distinctions from previous models arise in the constructs. The UPME construct differs from Howcroft (2017) due to the market focus we adopted. In our perspective, university should satisfy market demand, so the starting point for defining competencies is the university's perception of the expectations or needs of this market. On the other hand, we found evidence of a construct not considered by Howcroft (2017): The translation of perceptions into competencies specifications (TPCS). This construct is not represented in his framework since he directly compares the competencies desired by educators with the competencies perceived in students at the end of their courses.

5.3. Framework gaps

In addition to the various constructs listed above, the articles confirmed the existence of several gaps between these constructs. The gaps were identified and classified according to the two opposing constructs (Table 5). We found seven different gaps: three on the supply side, three between the supply and demand sides, and one on the demand side. Our model (Fig. 3) refers to the number of articles (n) that addressed the various gaps. For example, gap A was studied in 26 articles analyzed. Our model represents gaps with a two-way arrow with a dashed line.

It should be noted that not all the included articles aimed to analyze a particular gap. More than fifty percent of the papers addressed only a single construct of the five presented, which does not allow the identification of gaps. We used 58 articles that studied 78 gaps to build the conceptual model.

These articles are shown in Table 6, organized according to the gap they addressed. The difference between the 78 identified gaps and the 73 gaps represented in Fig. 3 is due to five gaps that were impossible to categorize (articles identified in the last line of the table).

Still, regarding the gaps, most of them (50%) arise between demand and supply (gaps A, D, and CDE). On the supply side, gaps B and BC were studied in 23% of the studies. On the demand side, Gap E was studied in 21% of the articles. Of the residual gaps, it was impossible to include them in a category, considering that they are presented in a very generic way, not identifying with certainty what

**Table 3**  
Content categorization for the development of constructs.

Construct	How	Who	What
University perceptions of market expectations (UPME)	perception of	students; graduates; academics	competencies requirement
Translation of perceptions into competencies specifications (TPCS)	perception of	students; graduates; academics	importance of the competencies
	perception of	students; graduates; academics	competencies that should be taught
Competencies delivery (CD)	existence of	–	competencies taught in university
	perception of	students; graduates; academics	competencies acquired in university
Perceived competencies (PC)	existence of	–	demonstrated competencies
	perception of	employers; practitioners	demonstrated competencies
Expected competencies (EC)	perception of	employers; practitioners	importance of the competencies
	perception of	employers; practitioners	competencies that should be taught
	perception of	employers; practitioners	competencies requirement
	existence of	–	competencies requirement



**Table 4**  
Framework constructs' definitions and measurement basis.

Construct	Definition	Measurement basis
University perceptions of market expectations (UPME)	Competencies that the university perceives as being expected or desired by the market.	Perceptions of academics, students or graduates of: <ul style="list-style-type: none"> <li>- the importance attributed to competencies</li> <li>- competence requirements</li> <li>- competencies that should be taught.</li> </ul>
Translation of perceptions into competencies specifications (TPCS)	Competencies specifications according to university perceptions.	Perceptions of academics, students, and graduates of the competencies taught in university.
Competencies delivery (CD)	Competencies that the university perceives are being delivered to the market.	Evidence of competencies taught in university. Perceptions of academics, students, and graduates of the competencies acquired in university.
Perceived competencies (PC)	Competencies that the market perceives graduates to possess when they enter the workforce.	Assessment of demonstrated competencies. Perceptions of employers and practitioners of the demonstrated competencies.
Expected competencies (EC)	Competencies that the market expects/desires graduates to possess when they enter the workforce.	Perceptions of employers and practitioners of: <ul style="list-style-type: none"> <li>- the importance attributed to competencies</li> <li>- competence requirements</li> <li>- competencies that should be taught.</li> </ul> Evidence of competencies requirements.

**Table 5**  
Framework gaps definition.

Gap	Definition
A University perception - market expectation gap	The existence of discrepancies between university perceptions of market-expected competencies and actual market expectations of graduates' competencies.
B University perception - competencies specification gap	The existence of discrepancies between university perceptions of market-expected competencies and its own specifications of course outcomes (competencies).
C University competencies specification - competencies delivery gap	The existence of discrepancies between university specifications of course outcomes (competencies) and the competencies students demonstrate at the end of their courses.
BC University perception - competencies delivery gap	The existence of discrepancies between university perceptions of market-expected competencies and the competencies students demonstrate at the end of their courses.
D University competencies delivery - market perception gap	The existence of discrepancies between the competencies students demonstrate at the end of their courses and market perceptions of graduates' competencies.
E Market perceived competencies - expected competencies gap	The existence of discrepancies between market perceptions and market expectations of graduates' competencies.
CDE University competencies specification - market expectation gap	The existence of discrepancies between university specifications of course outcomes (competencies) and market expectations of graduates' competencies.

is being compared.

## 6. Discussion of results and implications

This section will reflect an in-depth analysis of the gaps identified in the articles and give multiple clues for future research.

### 6.1. Gap analysis

The following analysis will focus on the findings from the articles, causes, and suggestions to reduce or eliminate the gaps.<sup>2</sup>

#### 6.1.1. University perception – market expectation gap (gap A)

**6.1.1.1. The existence of discrepancies between university perceptions of market-expected competencies and actual market expectations of graduates' competencies.** University may not always understand what the market connotes to high-performance graduates in advance, what competencies the graduates must possess to meet market needs, and what levels of competencies are needed to deliver high-quality entry-level accounting professionals. The construct of university perceptions of market expectations is the foundation of our framework. If this perception does not align with the actual market expectations, achieving a good fit between the effective demand and supply of accounting professional competencies becomes challenging.

In this category, we found the most significant number of articles (33%) reflecting its importance. It is also the category where the findings are less consistent, with very diverse conclusions regarding the gap's existence and dimension. Some studies concluded both

<sup>2</sup> We could not identify any tendency or order in the findings, which would be interesting to elaborate on. All gaps are studied in a dispersed way over the years, with no common evolution over time.

**Table 6**  
Articles by gap.

Gap	Articles
Gap A	Kavanagh and Drennan (2008); Mgaya and Kitindi (2008); Jackling and Lange (2009); Mgaya and Kitindi (2009); Shahwan and Roudaki (2009); Awayiga et al. (2010); Memiyanty et al. (2010); Crawford et al. (2011); Lin et al. (2013); Senik et al. (2013); Baker (2013); Abayadeera and Watty (2014); Ragland and Ramachandran (2014); Abayadeera and Watty (2016); Lim et al. (2016); Anis (2017); Howcroft (2017); Nicolaescu et al. (2017); Bruna et al. (2017); Coady et al. (2018); Ballou et al. (2018); Yanto et al. (2018); Ahmed (2019); Dolce et al. (2020); Maali and Al-Attar (2020); Aryanti and Adhariani (2020)
Gap B	de Lange et al. (2006); Kavanagh and Drennan (2008); Memiyanty et al. (2010); Crawford et al. (2011); Araujo et al. (2015); Towers-Clark (2015); Abayadeera and Watty (2016); Rackliffe and Ragland (2016); Smith et al. (2018); Al Mallak et al. (2020); Alshbili and Elamer (2020)
Gap BC	Hassall et al. (2010); Ragland and Ramachandran (2014); Anis (2017); Oussii and Klibi (2017); Howcroft (2017); Asonitou and Hassall (2019); Dolce et al. (2020)
Gap D	Ragland and Ramachandran (2014); Howcroft (2017); Anis (2017); Coady et al. (2018); Maali and Al-Attar (2020)
Gap E	Memiyanty et al. (2010); Gray (2010); Gray and Murray (2011); Abayadeera and Watty (2014); Siriwardane et al. (2014); van Romburgh and van der Merwe (2015); Siriwardane et al. (2015); Low et al. (2016); Howcroft (2017); Anis (2017); Ridwan (2017); Asonitou and Hassall (2019); Kunz and Jager (2019a); Kunz and Jager (2019b); Adhariani (2020); Daff (2021)
Gap CDE	Jackling and Lange (2009); Wells et al. (2009); Pan and Perera (2012); Mandilas et al. (2014); Montoya-del-Corte and Farías-Martinez (2014); Abayadeera and Watty (2016); Agrawal et al. (2021); Akande and Atiku (2021)
-	Berková et al. (2019); Senan (2019); Walker et al. (2020); Al-Aroud (2021); Al-Hattami (2021)

groups (university and market) shared common perspectives on the most important and least important individual skills (Abayadeera & Watty, 2016; Coady et al., 2018; Crawford et al., 2011; Yanto et al., 2018). For others, there is a similarity in opinion about the importance of skills, even though the ranking is not exactly the same (Shahwan & Roudaki, 2009). According to Crawford et al. (2011), these findings may indicate that employers were able to convey their needs to universities, which accepted them in their beliefs. Still, there may also have been external influences that influenced both sides of supply and demand to share the same perceptions. Professional bodies (Adhariani, 2020; Lakshmi, 2013) and higher education accreditation bodies (Crawford et al., 2011; Hancock et al., 2009) may have played an essential role in this equation.

On the other hand, most studies found significant differences in opinion about the importance of competencies between accounting educators and practicing accountants (Baker, 2013; Lin et al., 2013; Mgaya & Kitindi, 2008; Ragland & Ramachandran, 2014), indicating the existence of a gap. Generally, the findings suggest one of the two: (1) the market gives importance to competencies different from the university, or (2) the market assigns more importance to a particular competence than the university. It is interesting to note that the opposite situation exists, where the university attaches greater importance to certain competencies than the market. This inversion happens in Abayadeera and Watty's (2014) study regarding various generic skills. They justify this situation by the specific context of the course in which students were surveyed, as this accounting degree program was specifically designed to develop competent accounting graduates who meet the job market requirements.

Kavanagh and Drennan (2008) found some commonality between perceptions of students and expectations of employers but stated that significant gaps still exist. We believe evaluating this difference is important, considering that students' motivation is closely linked to the perception of the importance of specific competencies for their future careers (Al-Aroud, 2021). With this information, educators can reinforce the importance of competencies where gaps exist, improving their development among students.

The remaining articles in this category assume an intermediate position, in which some agreements are identified but also several disagreements. Analysis of confronting employers and academics (Anis, 2017; Howcroft, 2017) reports that employers consider most competencies more important than academics. On the other hand, students and employers partially agree (Dolce et al., 2020), while practitioners and academics clearly differ in some of the skills addressed (Ballou et al., 2018).

We consider this gap not problematic on its own. Still, as the construct of university perception of market expectations is the basis of competencies' supply, it might be the beginning of a failure to meet actual market expectations. As the primary stakeholder in finding well-prepared professionals, the market must ensure their expectations reach universities. It will be up to universities to use this information best, preparing accounting graduates with the competencies demanded by the market.

### 6.1.2. University perception – competencies specification gap (gap B)

6.1.2.1. *The existence of discrepancies between university perceptions of market-expected competencies and its own specifications of course outcomes (competencies).* This category's literature analysis shows that universities have difficulties defining the best way for their students to obtain the necessary competencies. Among the 11 articles analyzed within this gap, students' and graduates' perceptions are generally negative, as they believe that many essential competencies are not sufficiently developed in university accounting programs (Araujo et al., 2015; de Lange et al., 2006; Kavanagh & Drennan, 2008; Smith et al., 2018). The results suggest that the existing accounting programs do not achieve their goal of providing graduates with a broad-based general education in conjunction with a specialized professional education to address the needs of the accounting profession (de Lange et al., 2006). Academics in Malaysia mostly share the opinion of students, identifying dissatisfaction with the current state of accounting education (Memiyanty et al., 2010). This raises a question about the mission of universities: Do they aim to prepare students for the job market, or do they have a broader mission? Competencies specifications will follow the main guidelines of the university, so if the focus is not on preparing future accounting professionals, competencies will not align with market expectations. In this regard, Al Mallak et al. (2020) found that graduates perceive universities not to prioritize graduates' employability, evidencing a university priority constraint.

"It can be argued that academics' beliefs and assumptions are reflected in their teaching routines and behaviors" (Crawford et al., 2011, p. 127). However, academics may be underestimating the usefulness of including some competencies in accounting courses to prepare students, or academics do not believe the benefit of having these competencies in class outweighs the cost (Rackliffe & Ragland, 2016). This leads us to the factors influencing universities in specifying the programs and consequent competencies. How is academic thinking shaped? What is the major influence on the way of establishing programs? It could be external influences, such as professional bodies, educational standards, and benchmarking references, or the internal network of academics itself.

Regardless of the answer, one of the universities' main constraints is the legal/educational standards (Pasewark, 2021). These standards are being implemented in many parts of the world, with apparent advantages and disadvantages. If, on the one hand, they allow for the standardization of teaching, this same standardization can impair flexibility in the design of course programs (Duncan & Schmutte, 2006). Even if academics manage to escape this considerable constraint, there will be others that do not allow for the best competencies specifications. Several authors mention that time is limited (Al Mallak et al., 2020; de Lange et al., 2006). Within this context, academics may not be able to include the contents they consider necessary, but only the ones that are possible. In this regard, attention must be given to which competencies should be prioritized in light of time and resource constraints (Kavanagh & Drennan, 2008; Memiyanty et al., 2010). We believe identifying priorities is one of the main contributions researchers in this field are delivering to reduce or eliminate the identified gap.

On the other hand, higher education regulators should closely monitor the alignment of demand and supply and adapt education standards accordingly. If the complaint about the lack of time to transmit the necessary competencies is widespread (Al Mallak et al., 2020; de Lange et al., 2006; Jackling & Lange, 2009), perhaps it is essential to make profound changes. Finally, professional bodies

could also play a role in reducing this gap, for example, by taking on the training of some specific competencies, thus relieving the education system (Adhariani, 2020).

Finally, contrary to the rest of the literature analyzed in this section, accounting educators in the UK seem to incorporate adequate coverage of vocational skills into their accounting curricula, and the accounting students perceive these skills sufficiently (Alshbili & Elamer, 2020). This is remarkable since it is the only evidence pointing to the absence of gaps. It might be a good model for competencies specification in other countries.

### 6.1.3. University perception – competencies delivery gap (gap BC)

6.1.3.1. *The existence of discrepancies between university perceptions of market-expected competencies and the competencies students demonstrate at the end of their courses.* Howcroft (2017) identified this gap as an ‘education constraints gap’ where students’ ability, attitude, and institutional constraints play a role. According to him, once the competencies have been specified, developing these competencies may fail because of educators’ difficulties in passing on knowledge or students’ difficulties in developing the knowledge. We see this gap as the sum of the difficulty in satisfactorily specifying competencies (gap B) with the failure to effectively develop these competencies in students during their courses, which could configure another gap (gap C). Significant challenges in specifying competencies were already approached in the previous section, leaving the analysis of the development of the defined competencies for this section. However, our systematic search did not identify any article addressing this gap. In this sequence, the reasons for the failure of competencies development in university may not come to light in this study, as we eliminated articles that were only loosely or partially related to our research question. Articles classified as LR-3 (articles that address the accounting professional’s competencies as an output of a specific teaching format/case/application/choice) could be of great value in this analysis, as they investigated various teaching formats. We emphasize that we searched and included only the papers that focused on the supply or demand of competencies.

We found seven studies approaching the BC gap. Academics were the actors most surveyed about this gap, and they generally believe there is a gap between perceived graduate competencies and their importance (Anis, 2017; Howcroft, 2017; Rackliffe & Ragland, 2016). But also studies with students and graduates show similar results. Students indicate they believe that their aptitudes are sometimes poorly developed (Asonitou & Hassall, 2019; Oussii & Klibi, 2017), and Dolce et al. (2020) showed significant differences in graduates’ expectations of the skills considered necessary by companies and their perception of possessing them.

We identified several barriers to good competency development, such as large class sizes, poor quality of the lecturers, and the lack of funding (Hassall et al., 2010; Howcroft, 2017). According to Anis (2017), accounting educators should be trained to adopt and use teaching methods to enhance students’ overall skills, such as case studies, role-playing, and internships. Also, different strategies, such as real-life scenarios, are recommended (Dolce et al., 2020). This analysis may be complemented by Al Mallak et al. (2020), who refer to ten factors that may constrain skills development from the student’s perspective.

The results of the articles investigating this gap are generally negative, confirming the existence of a gap and, therefore, deserving further investigation. We posit a deeper exploration of this gap can yield exciting results and thus complement this study.

### 6.1.4. University competencies specification – market expectation gap (gap CDE)

6.1.4.1. *The existence of discrepancies between university specifications of course outcomes (competencies) and market expectations of graduates’ competencies.* Even if universities manage to specify their courses according to what they consider the most suitable, the market may not share this vision. Thus, this gap may originate from a wrong perception that universities have of the expected competencies or improper execution of the correct perceptions.

Of the eight articles that investigated this gap, only Wells et al. (2009) are genuinely optimistic about the unity between the calls from the profession and the response by the universities. They found a substantial convergence between the importance of specific professional capabilities and the extent to which these skills were developed in university courses. Pan and Perera (2012) were less optimistic, although they found only a slight difference between the analyzed accounting program and the views highlighted in the employer responses. They suggest a possible reason for the still-existing discrepancies may be the strict compliance with accreditation guidelines, which may leave little room for universities to adjust their programs to current demand, even if they are aware of the need. In the remaining articles of this category, convergence is residual and limited to some technical (accounting) skills (Jackling & Lange, 2009). Generally, the results show a significant separation between the competencies training received by the accountants newly graduated from universities and the labor market demands (Akande & Atiku, 2021; Mandilas et al., 2014; Montoya-del-Corte & Farías-Martínez, 2014).

Highlighting the study by Agrawal et al. (2021), we find that while the conclusion aligns with most articles in this category, it introduces a novel dimension by examining a previously unexplored actor: professional bodies. As the requirements of professional accounting bodies heavily influence the accounting curriculum (Duff et al., 2020), it makes sense to obtain the opinion and consider the guidelines of these professional bodies, in addition to the other widely surveyed actors. Furthermore, several authors have called for greater involvement of professional bodies in training future accounting professionals (Abayadeera & Watty, 2016; Jackling & Lange, 2009).

Assuming accounting programs should consider market preferences when preparing new courses or updating existing courses, at the very least, awareness of the changes needed should help close the information gap between employer requirements and accounting course content. For this, links between universities and employers should be strengthened to increase the involvement of employers in

degree course design and delivery (Abayadeera & Watty, 2016).

#### 6.1.5. University competencies delivery – market perception gap (gap D)

6.1.5.1. *The existence of discrepancies between the competencies students demonstrate at the end of their courses and market perceptions of graduates' competencies.* In the literature that approached this gap, the perception of students' competencies at the end of their courses does not always meet a consensus between the university and the market. Howcroft (2017) compares educators' and employers' perceptions, concluding that educators assess graduates' competence more highly than employers do. Ragland and Ramachandran (2014) found that new hires' perceptions of Excel proficiency are significantly less than those of employers. Both studies evidence a gap, even though in opposite directions. On the other hand, some studies evidence a degree of consensus between the university and the market (Anis, 2017; Coady et al., 2018; Maali & Al-Attar, 2020). However, these three studies also identified some disagreements, mostly on less critical competencies.

We reckon this gap arises mainly from previous experiences, causing different assessments of the same competencies. As Ragland and Ramachandran (2014) state, "the degree of perceived knowledge on how to use specific Excel functions is largely dependent on usage and/or experience with Excel" (p. 121). An academic who has never been a professional accountant may not understand the need for a specific competency. Due to these varying backgrounds, it is likely that this gap will not be easy to eliminate. Either way, we consider it essential to realize that (or when) this gap exists not to influence the assessment between delivered and expected competencies.

#### 6.1.6. Market perceived competencies – expected competencies gap (gap E)

6.1.6.1. *The existence of discrepancies between market perceptions and market expectations of graduates' competencies.* This gap can only be avoided by eliminating all other gaps in the framework. It can be quantified, but identifying its underlying causes is impossible. For this reason, the research included in this category did precisely that: check whether gaps exist and, if so, indicate whether it is relevant based on the actors' perspective.

For example, related to communication skills, authors consistently find discrepancies between expectation and performance (Gray, 2010; Gray & Murray, 2011; Siriwardane et al., 2015). Studies that addressed a variety of competencies, above all, return negative perspectives, with exhibited performance substantially lower than the perceived importance (Abayadeera & Watty, 2014; Anis, 2017; Asonitou & Hassall, 2019; Howcroft, 2017; Kunz & Jager, 2019b; Memiyanty et al., 2010; Ridwan, 2017; van Romburgh & van der Merwe, 2015). The only exception is a slightly more optimistic perspective found by Low et al. (2016), who indicate that the expectation gap is not as vast as previous literature has suggested. They concluded that more than half of employers believed universities prepare students adequately for the workplace. However, this seemed to be tempered by an opinion among employers that this is "as well as an academic institution can do" (Low et al., 2016, p. 52).

The findings of studies on this gap are essential to understand which competencies are subject to a mismatch between supply and demand. After identifying this alignment failure, its reasons must be sought with the help of the other gaps in the framework.

### 6.2. Future research suggestions

The in-depth analysis of the 122 articles allows us to provide avenues for future research at five levels: (1) competencies and competencies assessment, (2) competency gaps, (3) diversification of actors, (4) diversification of contexts, and (5) diversification of research approach, methodology, and tools.

#### 6.2.1. Competencies and competencies assessment

Identifying the competencies (or competency categories) that present the largest and the smallest gaps would be beneficial. This would help stakeholders focus on what needs improvement and maintain what is already working well. However, this reality seems like a mirage, considering the often contradictory results found in the 122 studies analyzed. One possible reason for the (apparent) contradictions is the lack of uniformity in the studies. The variety may be due to studying different actors, constructs, or conceptions of competencies. The first two can be overcome by doing replication studies. Some authors have already done so (Alshbili & Elamer, 2020; Asonitou & Hassall, 2019; Kavanagh & Drennan, 2008), but there is still room for many other studies to be replicated and compared in their results. The latter may be a little more complex, given the lack of a uniform and generally accepted definition of competence. It is crucial to seek this standardization so that the body of studies can build a consistent theory instead of creating a pile of isolated studies with non-comparable conclusions.

A form of research already suggested many years ago is to connect the demonstrated competencies of accounting professionals and the success or failure of their professional careers. Fatt (1995) made this suggestion related to personal qualities, but it seems to fit well with the whole package of competencies (knowledge, skills, attitudes, characteristics, and traits). However, this stresses the issue of assessing competencies. What is the most reliable form of evaluation? How and who should make this assessment? Can the assessment be considered exempt if it is based on a stakeholder's perception? How do we check for under- or over-estimation (perception vs. reality)? One of the suggestions is to monitor the development of students' competencies throughout their educational path, that is, to carry out longitudinal studies. Another way of obtaining more objective assessments is to use actual business documents instead of artificial tests that may not represent reality.

### 6.2.2. Competency gaps

Our framework is presented as a comprehensive gaps model, which can be investigated piecemeal. Of the seven identified gaps, gap BC may be one of the most interesting to analyze further, as the reasons for its emergence did not come to light. We purposely excluded from this SLR articles that investigated new formats, methods, or ways of developing competencies in higher education, which was the reason for not being possible to deepen the gap BC. However, we believe a deeper investigation of this gap can yield excitement.

Otherwise, all gaps are susceptible to further future investigations, individually or in an integrated manner, as the magic formula that will close all gaps is still not found. Even though in the last 15 years, 58 studies have addressed this topic, questions remain regarding the reasons for the appearance of the gaps. There may not be a universal answer to these questions, so the search for answers in different contexts should continue. As applied in this SLR, content analysis is a purely descriptive method describing the information that is present. Therefore, more research is needed to find the reasons for the gaps' existence and reduce or even eliminate them. Is this long-awaited elimination possible? And if so, would employers not readjust their expectations if this happens (Kunz & Jager, 2019a), creating a new expectation-performance gap?

For instance, consider gap D, which is the least explored among the gaps (appearing in only five articles). Gap D involves the assessment of the same competencies at the same moment, albeit by different actors: academics and employers. Why does this discrepancy in perception exist? We can address and attempt to resolve the issue only when we understand the underlying reasons for this difference.

Our analysis was based on the gaps between the various constructs; however, in some articles, it was possible to identify that there are also many potential internal gaps. These gaps are the differences in perceptions between respondents of the same construct, for example, perceptions of employers vs. practitioners, perceptions of students vs. academics, or perceptions of different types of students. These gaps provide another excellent research opportunity due to their direct influence on external gaps.

### 6.2.3. Diversification of actors (units of analysis)

A limitation of our study is that we only considered higher education. This choice was conscious, taking into account that most jobs in the accounting field require this type of preparation. However, several professional courses prepare their students in accounting, who can thus fill vacancies that require less academic preparation. Analyzing the perspectives of these students, academics, and future employers can generate additional data, so we suggest their further study.

On the demand side, we considered the labor market to be the 'consumer' of accounting professionals, disregarding other possible consumers (e.g., clients). This focus was also a deliberate choice, centering our already comprehensive analysis. However, it would be fascinating to incorporate the perspective of accounting clients (Reddrop & Mapunda, 2019). They are the consumers of the accountants' services, so they can make an interesting contribution.

For the rest, we did not limit our study, accepting the units of analysis that the authors of the selected articles preferred. Strangely, only one of the articles considered a representative of a professional accounting body essential for the study, not meeting what many suggest as future research. Investigating the influence of professional bodies on the curricula and employers' expectations would help better understand the needs of key stakeholders in accounting education.

Another stakeholder absent from the analysis is regulatory education bodies. Although various articles used several International Education Standards (IESs) as a source of competencies to be investigated, their perspective is not considered directly as a research unit. Legal requirements may condition the definition of curricula, so obtaining the perspective of these entities is an opportunity to better understand the impact of these restrictions. On the other hand, future research could investigate whether higher education institutions and academics respond adequately to legal requirements for competencies incorporation into the curriculum design.

### 6.2.4. Diversification of contexts

The realities studied (economic, social, geographical context) differ considerably, leading to diverse conclusions. Comparative studies in diverse contexts can clarify the reasons for divergences. This could be accomplished on the supply side by investigating various academic institutions. For instance, do different educational institutions teach varying sets of competencies?

On the demand side, the research could approach different types of industries, sectors (corporate or public), or company dimensions. Future research could consider using a stratified sample of firms from each industry. It would also be interesting to understand whether the size of the employer's company or the sector in which it operates (private or public) impacts competency expectations.

In the same sense, although studies in this area cover a vast geographic territory (thirty-seven different countries), there is an evident concentration in the USA, Australia, Malaysia, the UK, and South Africa. It would be helpful to replicate studies cross-culturally to better understand the revealed gaps. Other significant variables of the educational environment could be considered, as well as the economic situation of the country or the needs of different economic sectors, to contrast the consistency in geographic contexts. As [Al Mallak et al. \(2020\)](#) state: "There is no 'one size fits all' solution to solve the skills gap problem" (p.410). Rather, it is necessary to consider constraints in the context of a country's culture and educational system to help bridge the competencies gap problem.

We concluded from our analysis that most articles address the competencies of the accounting professional without linking them to a specific accounting role or area (77% of the articles). Future research may complement the limited existing studies, focusing on the different career options in accounting (public accounting, company financial accounting, cost/management accounting, auditing, tax accounting, etc.).

### 6.2.5. Diversification of research approach, methodology, and tools

We believe that there are many ways to diversify the research carried out to date, as the vast majority have chosen to use a survey



methodology with a quantitative basis. Case studies or other types of exploratory research can be particularly useful for examining the fit of supply and demand and its context. Why is there, or not, a particular gap? How can it be reduced or eliminated? Who should intervene to make this happen? Instead of quantifying, it would contextualize the problem.

We also suggest two more specific paths that seem particularly interesting to us. A group of English and Spanish researchers applied a fascinating and apparent useful concept in analyzing the importance of competencies and their respective development: the weighted importance indicator or indicator of priority (Hassall et al., 2005; Montano et al., 2001). The indicator makes it possible to verify where an investment in competencies development should be made. An enlightening visual effect is achieved by pouring the data into strategic maps (graphs). Two other authors recently used this same indicator (Asonitou & Hassall, 2019; Coady et al., 2018). It seems that the results, even if not generalizable, can be applied in the context in which they were studied. We believe it is a research tool that can and should be used in contexts other than those surveyed by the authors.

Considering the difficulty in validating perceptions, a final recommendation we leave is to investigate the existence of competencies. Only 20 articles used this approach, mainly through document analysis (job advertisements, programs curricula, and manuals adopted). This type of investigation should be reinforced, mainly through direct assessment (testing) of competencies.

## 7. Final considerations

In this systematic literature review, 122 articles were analyzed to gather information about the fit between the demand of the labor market and the supply by higher education of the accounting professional's competencies. The focus was on the convergence between the supply and demand side, on which a conceptual model was built.

The first research question focused on the gaps already identified in the literature. We realize that studies in the field are vast worldwide, but there is no framework in which the convergence between supply and demand is reflected. Many studied only one of the identified constructs; others studied several constructs, allowing the latter to find possible gaps. We identified seven gaps in these articles: three on the supply side, three between the supply and demand sides, and one on the demand side. Based on the detected gaps, we build our conceptual framework, which uniquely emphasizes both the supply and demand sides, distinguishing it from existing models. To this end, we adapted the format of the SERVQUAL model to the constructs and gaps identified in the analyzed articles. This framework is a noticeable contribution to the field and is particularly useful for researchers. It allows researchers to continue building theory and solve practical problems evolving the various stakeholders.

Another contribution of this study is the identification of the actors in this relationship. As might be expected, employers, professionals, academics, graduates, and students are the primary units of observation; however, there are others. The professional accounting and education regulatory bodies are much referred to but little studied. Not being direct actors but having a noticeable influence on the development of competencies of accounting students and professionals, they were considered in the framework as influencers. A more significant commitment and collaboration among academics, practitioners, professional bodies, and regulators are recommended when the intention is to close existing gaps.

The substantial body of avenues for future research is a final but considerable contribution. Like the conceptual framework, both help develop this research field in a consistent and progressive way.

Several limitations should be considered when analyzing the results of this study. Only two reference databases of peer-reviewed literature were used to collect the articles (WoS and Scopus). Articles in languages other than English were excluded, and the period was limited to the last 15 years since we used both restrictions as a search criterion. Although the keywords were defined very broadly, which can be confirmed by the high number of articles returned, they may have limited the scope of the study.

Finally, inclusion and exclusion criteria were defined in detail, even though their evaluation contains a subjective component. Also, by excluding articles related to educational (pedagogical) research, a gap that we believe may exist on the supply side may not have been evidenced. The identified literature did not address this gap between competencies specifications and delivered competencies.

Despite these limitations, the analysis allowed us to conclude that this area of investigation still has much to offer. As presented in this article, future research should aggregate and complement the conclusions already drawn from published studies. Above all, we suggest developing studies to identify the reasons for the various gaps between supply and demand. When the reasons for their existence are understood, reducing or eliminating them will become much more manageable.

### Author statement

All authors equally participated in the ideation and development process of this manuscript.

### Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

### Data availability

Data will be made available on request.

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## Appendix A

Authors	Publication Year	Article Title	Source Title
Abayadeera N., Watty K.	2014	The expectation-performance gap in generic skills in accounting graduates: Evidence from Sri Lanka	Asian Review of Accounting
Abayadeera N., Watty K.	2016	Generic skills in accounting education in a developing country: Exploratory evidence from Sri Lanka	Asian Review of Accounting
Adhariani D.	2020	The influence of the ASEAN economic community on the future of the management accounting profession	Meditari Accountancy Research
Adhariani D., Siregar S.V., Yulius R.	2019	Borderless with unequal opportunity? Experts' perspectives on the asean economic community and impact on indonesian accountant profession	Qualitative Report
Agrawal P., Birt J., Holub M., van Zyl W.	2021	Professional scepticism and the accounting classroom	Accounting Education
Ahmed I.E.	2019	Bridging the gap between governmental accounting education and practice	Accounting
Akande J.O., Atiku S.O.	2021	Developing Industry 4.0 accountants: implications for higher education institutions in Namibia	Development and Learning in Organizations
Al Mallak M.A., Tan L.M., Laswad F.	2020	Generic skills in accounting education in Saudi Arabia: students' perceptions	Asian Review of Accounting
Al-Aroud S.F.	2021	Evaluation of accounting education and the extent of compatibility and the labor market needs (Field study: External auditors auditin jordan)	International Journal of Entrepreneurship
Albu C.N., Albu N., Faff R., Hodgson A.	2011	Accounting competencies and the changing role of accountants in emerging economies: The case of Romania	Accounting in Europe
Al-Hattami H.M.	2021	University accounting curriculum, IT, and job market demands: Evidence from Yemen	SAGE Open
Alshbili I., Elamer A.A.	2020	The vocational skills gap in accounting education curricula: Empirical evidence from the UK	International Journal of Management in Education
Andiola L.M., Masters E., Norman C.	2020	Integrating technology and data analytic skills into the accounting curriculum: Accounting department leaders' experiences and insights	Journal of Accounting Education
Anis, A	2017	Auditors' and accounting educators' perceptions of accounting education gaps and audit quality in Egypt	Journal of Accounting in Emerging Economies
Araujo, VD; dos Santos, DG; Cavalcante, PRN; Barbosa, ET	2015	Academic formation in accounting sciences and its relationship with the labor market: The perception of the accounting sciences' students of a higher education federal institution	Revista de Gestão Finanças e Contabilidade
Aryanti C., Adhariani D.	2020	Students' perceptions and expectation gap on the skills and knowledge of accounting graduates	Journal of Asian Finance, Economics and Business
Asonitou S., Hassall T.	2019	Which skills and competences to develop in accountants in a country in crisis?	International Journal of Management Education
Awayiga J.Y., Onumah J.M., Tsamenyi M.	2010	Knowledge and skills development of accounting graduates: The perceptions of graduates and employers in Ghana	Accounting Education
Baker W.M.	2013	Empirically assessing the importance of computer skills	Journal of Education for Business
Ballou B., Heitger D.L., Stoel D.	2018	Data-driven decision-making and its impact on accounting undergraduate curriculum	Journal of Accounting Education
Banasik E., Jubb C.	2021	Are accounting programs future-ready? Employability skills	Australian Accounting Review
Berková K., Krpálek P., Krellová K. K.	2019	Future economic professionals: Development of practical skills and competencies in higher education from the point of view of international employers	Economic Annals-XXI
Berková K., Kubišová A., Kolářová D.	2021	Differences of opinion among students of czech higher education institutions on the competences of accountants required by the labour market	Universal Journal of Accounting and Finance
Berry R., Routon W.	2020	Soft skill change perceptions of accounting majors: Current practitioner views versus their own reality	Journal of Accounting Education
Bhasin M.L.	2016	Contribution of forensic accounting to corporate governance: An exploratory study of an asian country	International Business Management
Bruna I., Senkus K., Subaciene R., Sneider R.	2017	Evaluation of perception of accountants role at the enterprise in Latvia and Lithuania	European Research Studies Journal

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Cernusca, L	2020	Soft and hard skills in accounting field - Empiric results and implication for the accountancy profession	Studia Universitatis Vasile Goldis Arad Seria Stiinte Economice
Chaffer C., Webb J.	2017	An evaluation of competency development in accounting trainees	Accounting Education
Chaplin, S	2017	Accounting education and the prerequisite skills of accounting graduates: Are accounting firms' moving the boundaries?	Australian Accounting Review
Coady P., Byrne S., Casey J.	2018	Positioning of emotional intelligence skills within the overall skillset of practice-based accountants: employer and graduate requirements	Accounting Education
Crawford L., Helliard C., Monk E.A.	2011	Generic skills in audit education	Accounting Education
Daff L.	2021	Employers' perspectives of accounting graduates and their world of work: software use and ICT competencies	Accounting Education
De Lange P., Jackling B., Gut A.-M.	2006	Accounting graduates' perceptions of skills emphasis in undergraduate courses: An investigation from two victorian universities	Accounting and Finance
De Villiers, RR; Viviers, HA	2018	Evaluating the effective development of pervasive skills: The perceptions of students at two south african SAICA-accredited universities	Journal for New Generation Sciences
Debreceny R.S., Farewell S.M., Scarlata A.N., Stone D.N.	2020	Knowledge and skills in complex assurance engagements: The case of XBRL	Journal of Information Systems
Dolce V., Emanuel F., Cisi M., Ghislieri C.	2020	The soft skills of accounting graduates: perceptions versus expectations	Accounting Education
dos Santos, AM; Amorim, TNGF; da Cunha, TM	2021	The accountant's competences from the point of view of professionals working in the city of Vitoria de Santo Antao - PE	Revista Ambiente Contábil
Douglas S., Gammie E.	2019	An investigation into the development of non-technical skills by undergraduate accounting programmes	Accounting Education
Dunbar, K; Laing, G; Wynder, M	2016	A content analysis of accounting job advertisements: Skill requirements for graduates	E-Journal of Business Education & Scholarship of Teaching
Ghani E.K., Muhammad K.	2019	Industry 4.0: Employers' expectations of accounting graduates and its implications on teaching and learning practices	International Journal of Education and Practice
Ghani E.K., Rappa R., Gunardi A.	2018	Employers' perceived accounting graduates' soft skills	Academy of Accounting and Financial Studies Journal
Gray E.F., Murray N.	2011	A distinguishing factor': Oral communication skills in new accountancy graduates	Accounting Education
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Hamid, SFA; Zainuddin, ZN; Sulaiman, S	2016	Competences level and its perceived importance: A case study in Malaysian companies	Asia-Pacific Management Accounting Journal
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Howcroft D.	2017	Graduates' vocational skills for the management accountancy profession: exploring the accounting education expectation-performance gap	Accounting Education
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Ismail Z., Ahmad A.S., Ahmi A.	2020	Perceived employability skills of accounting graduates: The insights from employers	Elementary Education Online
Jackling B., De Lange P.	2009	Do accounting graduates' skills meet the expectations of employers? A matter of convergence or divergence	Accounting Education
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Jones R.	2014	Bridging the gap: Engaging in scholarship with accountancy employers to enhance understanding of skills development and employability	Accounting Education
Junger da Silva R., Tommasetti R., Zaidan Gomes M., da Silva Macedo M.A.	2020	Accountants' IT responsibilities and competencies from a student perspective	Higher Education, Skills and Work-based Learning
Kavanagh M.H., Drennan L.	2008	What skills and attributes does an accounting graduate need? Evidence from student perceptions and employer expectations	Accounting and Finance
Keneley M., Jackling B.	2011	The acquisition of generic skills of culturally-diverse student cohorts	Accounting Education
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King A.Z.	2021	Data analytics in Association to Advance Collegiate Schools of Business-accredited U.S. university accounting programs: A quantitative research study	Journal of Education for Business

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Král B., Mikolajewicz G., Nowicki J., Šoljaková L.	2021	Management accountants' professional competences: Requirements in the Czech Republic and Poland. The normative approach and business practice	Acta Universitatis Agriculturae et Silviculturae Mendelianae Brunensis
Ku Bahador K.M., Haider A.	2017	Incorporating information technology competencies in accounting curriculum: A case study in Malaysian higher education institutions	Journal of Engineering and Applied Sciences
Kunz R., de Jager H.	2019	Performance of newly employed trainee accountants in Gauteng, South Africa, versus the skills expectations of employers: How big is the gap?	Industry and Higher Education
Kunz, R; de Jager, H	2019	Exploring the audit capabilities expectation-performance gap of newly employed first-year trainee accountants in Gauteng: Audit managers at large firms' perceptions	South African Journal of Accounting Research
Lakshmi G.	2013	An exploratory study on cognitive skills and topics focused in learning objectives of finance modules: A UK perspective	Accounting Education
Leitner-Hanetseder S., Lehner O. M., Eisl C., Forstenlechner C.	2021	A profession in transition: actors, tasks and roles in AI-based accounting	Journal of Applied Accounting Research
Lim Y.-M., Lee T.H., Yap C.S., Ling C.C.	2016	Employability skills, personal qualities, and early employment problems of entry-level auditors: Perspectives from employers, lecturers, auditors, and students	Journal of Education for Business
Lin P., Krishnan S., Grace D.	2013	The effect of experience on perceived communication skills: Comparisons between accounting professionals and students	Advances in Accounting Education: Teaching and Curriculum Innovations
Ling L.M., Nawawi N.H.A.	2010	Integrating ICT skills and tax software in tax education: A survey of Malaysian tax practitioners' perspectives	Campus-Wide Information Systems
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Maali B., Al-Attar A.M.	2020	Accounting Curricula in Universities and Market Needs: The Jordanian Case	SAGE Open
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Memiyanty H.A.R., Rozainun H.A. A., Lin B.	2010	Perception on professional capabilities of accounting graduates	International Journal of Management in Education
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Pan P., Perera H.	2012	Market relevance of university accounting programs: Evidence from Australia	Accounting Forum
Paulsson G.	2012	The role of management accountants in new public management	Financial Accountability and Management
Pilipczuk O.	2020	Toward cognitive management accounting	Sustainability (Switzerland)
Pitulice I.C., Proftoiu A.G., Ștefănescu A.	2018	Government accounting education for university undergraduates	Transylvanian Review of Administrative Sciences
Ragland L., Ramachandran U.	2014	Towards an understanding of excel functional skills needed for a career in public accounting: Perceptions from public accountants and accounting students	Journal of Accounting Education
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Yoon S.W., Vedd R., Jones C.G.	2013	IFRS knowledge, skills, and abilities: A follow-up study of employer expectations for undergraduate accounting majors	Journal of Education for Business
Zhyvets, A	2018	Evolution of professional competencies of accountants of small enterprises in the digital economy of Ukraine	Baltic Journal of Economic Studies
Zubairu U., Ismail S., Fatima A.H.	2019	The quest for morally competent future Muslim accountants	Journal of Islamic Accounting and Business Research
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