

Employability Skills and Geographical Location

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We study the employability skills expected of accounting graduates in regional metropolitan areas, which may significantly differ from the diverse economies of large central metropolitan areas. We investigate the differences in technical and soft skills demanded by metropolitan areas in the state of Texas. We assess the differences in technical skills versus soft skills for 14 Metropolitan Statistical Areas (MSAs) and 12 Occupational in the State of Texas. We examine the job postings and find that Communication skills are in high demand irrespective of the size of the metropolitan area. Large metro areas have a higher demand for analytical and team/cooperative skills while Medium metro areas and Border cities have a higher demand for organizational, detail oriented/meticulous, and management skills. Although all areas show many similarities in the technical skills they demand, Medium metro areas and Border cities showed a demand for Bilingual skills. We find that the different economic needs should be addressed with a regional perspective.

Keywords: job advertising, employability skills, soft skills, hard skills

INTRODUCTION

After reaching historic highs in the number of new graduates hired into the accounting/finance functions of U.S. CPAs (2012-2016), the trend declined 11 percent in 2018. The American Institute of Certified Public Accountants (AICPA) in *Trends in the Supply of Accounting Graduates and the Demand for Public Accounting* notes that the profession has experienced an approximately 30 percent decline in the hiring of new accounting graduates (AICPA 2019). Further, a 2015 survey found that about 60 percent of U.S. CFOs declared they face challenges in finding skilled talent (Hagel 2015). Together, these issues may signal the need for a revision of accounting programs to respond to the demands of the job market.

Academia and practitioners have attributed the challenge of finding skilled candidates to the growing gap between higher education in accounting and the accounting profession (Whitfield Broome and Morris 2005; Pincus, Stout, Sorensen, Stocks and Lawson 2017). Educators have addressed this expectations gap via accounting curriculum changes, and professional bodies like the AICPA have developed frameworks defining a set of skills-based competencies needed to prepare students for the accounting profession (AICPA 2019). The AICPA framework identifies three major competencies or pillars: (1) accounting competencies (*Technical Skills*); (2) business competencies; and (3) professional competencies (*Soft Skills*)

In a similar effort, the International Accounting Education Standards Board (IAESB) has developed international education standards (IES) for use by International Federation of Accountants (IFAC) members. These standards prescribe principles of learning and development for professional accountants, which cover the initial and continuing professional development of professional accountants. Among the IESs, Standard 2 addresses *Initial Professional Development – Technical Competences*, IES 3 addresses *Initial Professional Development – Professional Skills*, and IES 4 addresses *Initial Professional Development – Professional Values, Ethics and Attitudes*. Together these outline the content that accounting education programs need to develop.

The efforts of professional bodies (and academia) to develop competencies that create value in addressing long-term career demands (Lawson et al. 2014) are a response to the forces that affect higher education and the accounting profession. Pincus et al. (2017) show, for example, that the use of new technology, which changes the way accountants work (i.e. offshoring and automation), is shaping the development of accounting curricula. Islam (2017) notes that increasing regulation and the need for new disclosure rules is another force that is affecting the accounting profession.

The development of accounting education programs has, for the most part, focused on preparing students for careers in public accounting (Lawson et al. 2014) and in satisfying the demand for skilled accountants in large central metropolitan areas. According to Henderson (1997) and Duranton and Puga (2000) large metropolitan areas tend to have a more diversified economies with a higher concentration in services and less manufacturing than do medium metropolitan areas. It is thus likely, that large central metropolitan areas and medium metropolitan areas will demand different technical and soft skills portfolios from professional accountants. This leads us to investigate the differences in technical skills and soft skills demanded by metropolitan areas in the state of Texas and to identify the most important skills for each region.

We investigate these differences in *employability* skills by exploring the technical skills and soft skills required in the job advertisements for accounting undergraduate and graduate students in the state of Texas. We focus on the differences between Large Central Metropolitan Areas¹ and Medium Metropolitan Areas. Furthermore, we analyze the different skill portfolios required by the occupations with the greatest demand (Standard Occupational Classification System)².

The scope of accounting programs and curricula should vary from university to university based, to some extent, on local needs. Overall, our research aims to make recommendations to educators that can be useful in revising their accounting programs.

Furthermore, we seek to recognize the diversity of employability skills and how the demand for specific skills by employers varies by region and occupation. Universities that complement their program by targeting geographical and industry skills should increase the employability of their students (Bridgstock 2009). Thus, an understanding of employability skills can help to reduce the perceptions gap between academia and practitioners. In order to achieve this, however, faculty, career services personnel, and employers will need to work together to identify and incorporate the desired skill sets into the curricula.

LITERATURE REVIEW

A sequence of events and disruptive technologies has changed the accounting profession and affected accounting education programs by demanding new skills. Largely the accounting literature has explored undergraduate accounting students' soft skills and hard skills using traditional methods: focus groups; interviews; and surveys. Tan and Laswad (2018), for example, examine the accounting skills demanded by employers in Australia. They find that employers are looking for routine/technical skills, intellectual skills, personal skills, interpersonal skills, and organizational skills.

International commerce has forced the accounting programs in the United States to become more global. These programs not only cover content from International Financial Reporting Standards (IFRS), but also include better coverage of business practices globally. The Master Program in Accounting from the University of North Carolina at Chapel Hill, for example, offers a course in International Tax.

Globalization and digitalization of transactions in real time has made accounting less mechanical and more interpretative. According to McKinney, Yoos and Snead (2017) in the current age of Big Data, accountants need skills to analyze data and order thinking skills (also known as *Big Judgment* skills). Technology is handling more and more of the routine data processing and accountants increasingly need the skills to interpret data.

Communication skills are essential for accountants and have become more important when the interpretation of data is paramount. Lin, Krishnan, Grace (2013) find that practitioner accounting graduates do not possess adequate communication skills. They suggest that accounting professionals and faculty should be responsible for helping students to develop communication skills. They recommend the use of role-playing and presentations to better prepare students for practice.

Ballou, Heitger and Stoel (2018) suggests that accounting curriculums should focus on a more “scientific approach,” where students can engage with other students, ask questions, perform research, and seek out additional information to test alternative solutions. They stress that this approach will allow students to evolve their accounting knowledge and be better prepared for their future careers. The accounting profession demands that students need to focus more on processes and less on content. Educators should thus teach the skills related to finding information when they need it, rather than rote learning of rules and techniques.

Traditional accounting education programs are designed to impart the core technical foundations essential to a successful career in accounting. According to *International Education Standard IES 2*, the primary knowledge part of a professional accounting program should include three main areas: (1) accounting, finance and related knowledge; (2) organizational and business knowledge; and (3) information technology knowledge competences. These hard skills are not, however, enough to increase students’ employability.³ Today, employers are increasingly demanding softer skills. Hard skills are thus necessary, but not sufficient. Christian Cuzick, Chair of IMA Global Directors considers intellectual curiosity, strong ethical principles, communication skills and being a team player as the skills needed in the accounting profession.

Prior research found that in New Zealand and Australia there is a lag between theory and practice which is responsible for academia being slow in responding to the needs of practitioners (France, 2010). Recent accounting professionals are lacking the skills and knowledge required to pursue a successful accounting career. They are lacking not only the general and technical skills but also communication skills and leadership skills that are very important in a business career. France (2010) found that the most frequent technical skills desired of management accountants are: budgeting, reporting, analysis, financial accounting, forecasting, costing, and calculation and analysis of variance.

According to Siegel, Sorensen, Klammer and Richtermeyer (2010) almost two-thirds of accounting graduates begin their careers in industry, and more than half of those students are not fully prepared for a professional career. The knowledge, skills, and abilities (KSAs) required of university accounting students include writing, speaking, presenting, listening, negotiating, persuading, and influencing, along with the ability to work in teams using logical, diagnostic, and reasoned approaches to business problems (or hands-on activities such as role playing). One of the strategies they propose to improve student’s skills, is to design a curriculum that includes social psychology to help graduates understand how to motivate people and resolve conflicts.

Omar, Manaf, Mohd and Kassim (2012) find that the graduate unemployment rate in Malaysia will continue to increase unless the Higher Education Institution (HFI) and the graduates are prepared to sharpen their soft skills. The authors suggest that communication skills, interpersonal skills, and team building skills can ultimately benefit students themselves, employees and customers, the community, and the economy of Malaysia as a whole.

Prior research found that in order for universities to effectively engage with the graduate employability agenda and identify the attributes that university graduate students should be aware of, they should focus on a wider set of skills rather than on the generic skills that focus on the basics of a professional career (Bridgstock, 2009). According to the author, universities should allow for university graduate students to become more involved in the curricula and allow them to form partnerships with faculty and career services

or other employers to develop those career management skills that are required to gain a successful career path in business.

IFAC IES prescribe the knowledge content of professional accounting education programs that candidates need to acquire in order to qualify as professional accountants. This foundational work is often used as a benchmark for different accounting programs around the world. As business environments become more global and more complex, this creates challenges for accounting programs. There is more to learn and less time in which to learn it. Therefore, accounting programs have become more efficient. The integration of regionalized generic employability skills has, however, been slow or non-existent. Our study investigates the association of location (Metropolitan Statistical Areas) and Skills (hard skills and soft skills). We also analyze Medium Metro Areas that are border areas and non-border areas. The null hypothesis of our study is:

H₀: There is no association between location (specific Metropolitan Statistical Areas) and the Skills required by employers.

DATA COLLECTION

The data is collected from JobsEQ⁴ database, which analyses job postings. We assess the differences in technical skills versus soft skills for the 14 Metropolitan Statistical Areas (MSAs) listed in Appendix 1, and the 12 Occupational groups listed in Appendix 2. We generate the frequencies of skills by MSA and Occupation. We also compare frequencies, to explore differences among the groups.

RESULTS

Table 1 shows the sample selection process. The table lists the total job advertisements for the state of Texas for the years 2017 through 2019. The total number of job advertisements is 117,246. The year 2019 is the year with the highest number of job advertisements. Large Central Metro and Large Fringe Metro Areas together represent 89.2% (104,666) of the job advertisements. Medium Metro Areas and Other Small Metro Areas each represent about 5.3% of the total (6,273 and 6,307).

**TABLE 1
SAMPLE SELECTION**

Year	Total Job Advertisements	Medium Metro	Large Central Metro and Large Fringe Metro	Other (Small Metro)
2017	33,320	1,827	29,789	1,704
2018	40,879	2,078	36,484	2,317
2019	43,047	2,368	38,393	2,286
Total	117,246	6,273	104,666	6,307

Table 2 presents the top ten soft skills required in each MSA Area (Medium Metro and Large Central Metro). The table shows that in the 6,273 job advertisements available in Medium Metro Areas, 1,495 are words or phrases that fall into the Communications category. Large Central Metro Areas also have Communication as the first skill, with 26,722 words or phrases presented. Communication skills are the most important skill demanded by Medium and Large Metro Areas. However, when we analyze the rest of the soft skills by area, we observe that the demand for Analytical and Cooperative/Team Player is more important in Large Central Areas. The demand for teamwork and cooperative skills may be attributable to the size of companies located in Large Central Metro areas, which are larger in terms of total assets and number of employees. It is interesting to note that Organization skills are required in Medium Metro areas,

and this may be explained by the occupations demanded in those areas such as Bookkeeping, Accounting and Auditing Clerks, and Tax Preparers.

The result from the Cooperative/Team player skills reveals what prior research has indicated (e.g. Watson 2002), that students that are able to work successfully in teams must possess some foundations in various skills. According to Watson, teamwork is not one skill but a compendium of many such as: communication and self-management skills. Therefore, every accounting program should assess the development of skills throughout the program, that are necessary for effective teamwork.

**TABLE 2
SOFT SKILLS**

Medium Metro		Large Central Metro and Large Fringe Metro	
Communication (Verbal and written skills)	1,495	Communication (Verbal and written skills)	26,722
Organization	535	Analytical	13,613
Detail Oriented/Meticulous	532	Cooperative/Team Player	11,868
Supervision/Management	527	Self-Motivated/Ability to Work Independently/Self Leadership	10,446
Analytical	511	Detail Oriented/Meticulous	10,070
Cooperative/Team Player	445	Organization	9,201
Ability to Work in a Fast-Paced Environment	421	Problem Solving	8,513
Self-Motivated/Ability to Work Independently/Self Leadership	418	Supervision/Management	7,417
Problem Solving	346	Ability to Work in a Fast-Paced Environment	6,067
Customer Service	313	Interpersonal Relationships/Maintain Relationships	5,523

When we analyze the soft skills in Border Areas (Table 2A), we find results similar to the Medium Size Areas, with Communication, Supervision, Organization, Analytical and Detail Oriented comprising the top five.

**TABLE 2A
SOFT SKILLS BORDER REGION**

	Brownsville-Harlingen	El Paso	Laredo	McAllen-Edinburgh-Mission	Total
Communication (Verbal and written skills)	76	383	58	195	712
Supervision/Management	23	138	27	73	261
Organization	32	130	17	80	259
Analytical	25	150	11	64	250
Detail Oriented/Meticulous	17	128	9	89	243
Cooperative/Team Player	19	167	9	44	239
Ability to Work in a Fast-Paced Environment	37	116	11	58	222

Self-Motivated/Ability to Work Independently/Self Leadership	23	115	8	54	200
Customer Service	17	99	9	41	166
Problem Solving	11	84	2	62	159

In order to test our hypothesis of an association between MSA and Skills, we use a chi square test. Based on prior literature the most common soft skills mentioned are: Communication, Ethical and Moral Values, Leadership, Problem Solving and Analytical, Team Building, and Self-Management (De Villiers 2010). We added the Managerial category to capture the functional skills used in business. We classified the number of words or phrases presented in the job advertisements based on these seven categories.

Table 3 presents the results for the Soft Skills and MSA Areas. We find that from the seven categories, Self-management skills is the most demanded (37.8%), followed by Communication skills (21.1%). Furthermore, consistent with this results the expected count and the observed count are the largest for Self-management and Communication for both Medium and Large MSA. The result for Self-management skills highlights the need for individuals to understand their capabilities (strengths and weaknesses), to be accountable, and to be adaptable. In order to increase students' employability skills, career services could provide students with assessment tools such as personality tests (e.g., the MBTI test). The chi square results are significant and suggest that MSA and Soft Skills are associated with each other. This further suggests that educators should analyze regional needs when developing and revising their programs.

TABLE 3

		MSA		Total	
		Medium	Large		
SoftSkill	Communication	Count	2123 _a	38588 _b	40711
		Expected Count	1,892	38,819	40,711
		% within SoftSkill	5.2%	94.8%	100.0%
		% within MSA	23.6%	20.9%	21.1%
		% of Total	1.1%	20.0%	21.1%
	Ethical and Moral Values	Count	544 _a	11,813 _a	12,357
		Expected Count	574	11783	12357
		% within SoftSkill	4.4%	95.6%	100.0%
		% within MSA	6.1%	6.4%	6.4%
		% of Total	0.3%	6.1%	6.4%
	Managerial	Count	164 _a	6,446 _b	6,610
		Expected Count	307	6303	6610
		% within SoftSkill	2.5%	97.5%	100.0%
		% within MSA	1.8%	3.5%	3.4%
		% of Total	0.1%	3.3%	3.4%
	Leadership	Count	932 _a	15,636 _b	16,568
		Expected Count	770	15798	16568
		% within SoftSkill	5.6%	94.4%	100.0%
		% within MSA	10.4%	8.5%	8.6%
		% of Total	0.5%	8.1%	8.6%
	Problem Solving and Analytical	Count	1,293 _a	30,116 _b	31,409
		Expected Count	1,460	29,949	31,409

Self Management	% within SoftSkill	4.1%	95.9%	100.0%
	% within MSA	14.4%	16.3%	16.2%
	% of Total	0.7%	15.6%	16.2%
	Residual	-166.7	166.7	
	Count	3,475 _a	69,605 _a	73,080
Team-Building	Expected Count	3,396	69,684	73,080
	% within SoftSkill	4.8%	95.2%	100.0%
	% within MSA	38.7%	37.7%	37.8%
	% of Total	1.8%	36.0%	37.8%
	Count	456 _a	12,182 _b	12,638
Total	Expected Count	587	12051	12638
	% within SoftSkill	3.6%	96.4%	100.0%
	% within MSA	5.1%	6.6%	6.5%
	% of Total	0.2%	6.3%	6.5%
	Count	8,987	18,4386	193,373
Total	Expected Count	8,987	18,4386	193,373
	% within SoftSkill	4.6%	95.4%	100.0%
	% within MSA	100.0%	100.0%	100.0%
	% of Total	4.6%	95.4%	100.0%

Expected Counts are rounded to the nearest whole number.

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	189.680 ^a	6	.000

Table 3A, shows our analysis of Medium MSAs. We again partition the sample into Border Areas and Non-Border Areas. The result from the chi square test indicates that there is no difference between Medium MSA Soft Skills and Border Area Soft Skills. This suggests that the regions share several characteristics in common. Despite their difference among Medium MSA areas, borders and non-borders areas have many similarities.

TABLE 3A

SoftSkill	Communication		Medium MSA		Total
			Border City	Non-Border City	
		Count	1,027 _a	1,096 _a	2,123
		Expected Count	1,042	1,081	2,123
		% within SoftSkill	48.4%	51.6%	100.0%
		% within BorderCity	23.3%	24.0%	23.6%
		% of Total	11.4%	12.2%	23.6%
Ethical and Moral Values		Count	262 _a	282 _a	544
		Expected Count	267	277	544
		% within SoftSkill	48.2%	51.8%	100.0%
		% within BorderCity	5.9%	6.2%	6.1%

	% of Total	2.9%	3.1%	6.1%
Functional	Count	73 _a	91 _a	164
	Expected Count	81	84	164
	% within SoftSkill	44.5%	55.5%	100.0%
	% within BorderCity	1.7%	2.0%	1.8%
	% of Total	0.8%	1.0%	1.8%
Leadership	Count	466 _a	466 _a	932
	Expected Count	457	475	932
	% within SoftSkill	50.0%	50.0%	100.0%
	% within BorderCity	10.6%	10.2%	10.4%
	% of Total	5.2%	5.2%	10.4%
Problem Solving and Analytical	Count	648 _a	645 _a	1293
	Expected Count	635	658	1,293
	% within SoftSkill	50.1%	49.9%	100.0%
	% within BorderCity	14.7%	14.1%	14.4%
	% of Total	7.2%	7.2%	14.4%
Self Management	Count	1,694 _a	1,781 _a	3,475
	Expected Count	1,706	1,769	3475
	% within SoftSkill	48.7%	51.3%	100.0%
	% within BorderCity	38.4%	38.9%	38.7%
	% of Total	18.8%	19.8%	38.7%
Team-Building	Count	242 _a	214 _a	456
	Expected Count	224	232	456
	% within SoftSkill	53.1%	46.9%	100.0%
	% within BorderCity	5.5%	4.7%	5.1%
	% of Total	2.7%	2.4%	5.1%
Total	Count	4,412	4,575	8,987
	Expected Count	4,412	4,575	8,987
	% within SoftSkill	49.1%	50.9%	100.0%
	% within BorderCity	100.0%	100.0%	100.0%
	% of Total	49.1%	50.9%	100.0%

Expected Counts are rounded to the nearest whole number.

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	5.903 ^a	6	.434

Table 4 presents the top ten Hard Skills from Medium and Large Central Areas. Both areas job advertisements cite Microsoft Excel as a highly demanded skill.

**TABLE 4
HARD SKILLS**

Medium Metro		Large Central Metro and Large Fringe Metro	
	2,3		51,0
Microsoft Excel	35	Microsoft Excel	19
	1,8		24,3
Accounting	61	Microsoft Office	65
	1,4		22,3
Microsoft Office	39	Accounting	15
Understanding of Generally Accepted	92		18,2
Accounting Principles (GAAP)	3	Finance	21
	88	Understanding of Generally Accepted	17,6
Finance	7	Accounting Principles (GAAP)	38
	77		13,3
Personal Computers (PC)	1	Microsoft PowerPoint	66
	70		12,9
Microsoft Outlook	9	Public Accounting	23
	65		12,6
Reconciliation	5	Reconciliation	51
	65		11,4
Microsoft PowerPoint	3	SAP	49
	64		10,6
Bilingual	5	Microsoft Word	65

It is important to highlight that Bilingual skill is valued in Medium MSA areas. Table 4 A confirms the importance of this skill. According Potter and Hoque (2014) the Hispanic population will likely exceed the Anglo population by 2020 and make up the majority of the State by 2042. This demographic change has started to impact the need for bilingual employees. Moore et al. 2014, find that Spanish-English bilingual ability improves both the likelihood of employability, as well as higher levels of income for the Latino population. Furthermore, Spanish and English literacy are positively associated with not only employability, but also income level, and Spanish literacy, shows a significant, positive relationship with employment. Two universities in the region have addressed the need of bilingual literacy by offering MBAs in Spanish (Texas A&M International University and The University of Texas Rio Grande Valley).

**TABLE 4 A
HARD SKILLS BORDER REGION**

	Brownsville- Harlingen	El Paso	Laredo	McAllen- Edinburgh- Mission	Total
Microsoft Excel	86	635	85	349	1155
Accounting	127	482	71	331	1011
Microsoft Office	43	372	51	201	667
Understanding of Generally Accepted Accounting Principles (GAAP)	53	274	24	143	494
Personal Computers (PC)	43	193	42	186	464
Finance	51	261	43	71	426

Bilingual	74	180	32	106	392
Reconciliation	30	246	15	84	375
Marketing	60	150	25	68	303
Word Processing	46	110	37	102	295

In order to better analyze the hard skills, we categorize the different skills into seven categories: Business, Computer, Intellectual knowledge, Language, Routine activities, Operating equipment, and Other.

Table 5 shows that Computer skills is the most desired skill in Texas with 52.1%, Intellectual skills are second at 32.6%, Routine skills are listed in 7.9% of advertisements, Business skills in 3.9%, Language skills in 1.8%, and Operations in 0.9%. These results are consistent with prior studies that highlight the need for accounting students to have technology skills in order to be successful in the accounting profession (e.g., Andiola, Masters, and Norman 2020). When analyzing accounting software products to automate processes, Large MSA demand knowledge of how to use ERP solutions (e.g. SAP, ORACLE), while Medium areas demand Quickbooks. The complexity of large standardized ERP solutions and the time constraints within accounting programs has challenged faculty from Medium MSAs to choose what students from these regions need to know. Following Hingorani, Beasley, and Bradford (2015) we consider the use of Quickbooks as the best alternative since this accounting software uses the same nomenclature that is used in large standardized ERP solutions.

TABLE 5

HardSkill	Business	Count	MSA		Total
			Medium	Large	
		Count	786 _a	16530 _b	17316
		Expected Count	958	16,358	17,316
		% within HardSkill	4.5%	95.5%	100.0%
		% within MSA	3.2%	3.9%	3.9%
		% of Total	0.2%	3.7%	3.9%
	Computer	Count	11,698 _a	22,1072 _b	23,2770
		Expected Count	12,872	219,898	232,770
		% within HardSkill	5.0%	95.0%	100.0%
		% within MSA	47.3%	52.4%	52.1%
		% of Total	2.6%	49.5%	52.1%
	Intellectual	Count	7,879 _a	137,811 _b	145,690
		Expected Count	8,056	137,634	145,690
		% within HardSkill	5.4%	94.6%	100.0%
		% within MSA	31.9%	32.6%	32.6%
		% of Total	1.8%	30.8%	32.6%
	Language	Count	1,226 _a	6,786 _b	8,012
		Expected Count	443	7,569	8,012
		% within HardSkill	15.3%	84.7%	100.0%
		% within MSA	5.0%	1.6%	1.8%
		% of Total	0.3%	1.5%	1.8%
	Operations	Count	495 _a	3,426 _b	3,921
		Expected Count	217	3,704	3,921
		% within HardSkill	12.6%	87.4%	100.0%
		% within MSA	2.0%	0.8%	0.9%

	Other	% of Total	0.1%	0.8%	0.9%
		Count	204 _a	3,560 _a	3,764
		Expected Count	208	3,556	3,764
		% within HardSkill	5.4%	94.6%	100.0%
		% within MSA	0.8%	0.8%	0.8%
	Routine	% of Total	0.0%	0.8%	0.8%
		Count	2,420 _a	32,928 _b	35,348
		Expected Count	1,955	33,393	35,348
		% within HardSkill	6.8%	93.2%	100.0%
		% within MSA	9.8%	7.8%	7.9%
Total	% of Total	0.5%	7.4%	7.9%	
	Count	24,708	422,113	446,821	
	Expected Count	24,708	422,113	446,821	
	% within HardSkill	5.5%	94.5%	100.0%	
	% within MSA	100.0%	100.0%	100.0%	
		% of Total	5.5%	94.5%	100.0%

Expected Counts are rounded to the nearest whole number.

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	2,109.728 ^a	6	.000

Table 5 A shows that Medium MSA areas share several characteristics. Despite their difference with Medium MSA areas, borders and non-border areas have many similarities. Therefore, we reject the null hypothesis that asserts Border Cities and Soft Skills are independent of each other, the data suggests that the variables are not associated with each other.

TABLE 5A

SoftSkill	Communication		BorderCity		Total
			Border City	Non Border City	
	Communication	Count	1,027 _a	1,096 _a	2,123
		Expected Count	1,042.	1,081	2,123
		% within SoftSkill	48.4%	51.6%	100.0%
		% within BorderCity	23.3%	24.0%	23.6%
		% of Total	11.4%	12.2%	23.6%
		Residual	-15.2	15.2	
	Ethical and Moral Values	Count	262 _a	282 _a	544
		Expected Count	267	277	544
		% within SoftSkill	48.2%	51.8%	100.0%
		% within BorderCity	5.9%	6.2%	6.1%
		% of Total	2.9%	3.1%	6.1%
		Residual	-5.1	5.1	
	Functional	Count	73 _a	91 _a	164

Total	Expected Count	81	83	164	
	% within SoftSkill	44.5%	55.5%	100.0%	
	% within BorderCity	1.7%	2.0%	1.8%	
	% of Total	0.8%	1.0%	1.8%	
	Residual	-7.5	7.5		
	Leadership	Count	466 _a	466 _a	932
		Expected Count	458	474	932
		% within SoftSkill	50.0%	50.0%	100.0%
		% within BorderCity	10.6%	10.2%	10.4%
		% of Total	5.2%	5.2%	10.4%
		Residual	8.5	-8.5	
	Problem Solving and Analytical	Count	648 _a	645 _a	1,293
		Expected Count	635	658	1,293
		% within SoftSkill	50.1%	49.9%	100.0%
		% within BorderCity	14.7%	14.1%	14.4%
		% of Total	7.2%	7.2%	14.4%
		Residual	13.2	-13.2	
	Self Management	Count	1,694 _a	1,781 _a	3,475
		Expected Count	1,706	1,769	3,475.0
		% within SoftSkill	48.7%	51.3%	100.0%
% within BorderCity		38.4%	38.9%	38.7%	
% of Total		18.8%	19.8%	38.7%	
Residual		-12.0	12.0		
Team-Building	Count	242 _a	214 _a	456	
	Expected Count	224	232	456	
	% within SoftSkill	53.1%	46.9%	100.0%	
	% within BorderCity	5.5%	4.7%	5.1%	
	% of Total	2.7%	2.4%	5.1%	
	Residual	18.1	-18.1		
Total	Count	4,412	4,575	8,987	
	Expected Count	4,412	4,575	8,987	
	% within SoftSkill	49.1%	50.9%	100.0%	
	% within BorderCity	100.0%	100.0%	100.0%	
	% of Total	49.1%	50.9%	100.0%	

Expected Counts are rounded to the nearest whole number

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	5.903 ^a	6	.434

Table 6 presents the top ten occupations for large and medium metro areas. Accountant is the most demanded occupation for both areas. However, the second and third most important occupations for the

medium metro area are Bookkeeping and Tax Preparers respectively. This result is not surprising due to type of businesses that settle in these regions. On the other hand, large metro areas advertise for Department Financial Managers and Financial

Analysts occupations second and third most often. This shows that there is a complex service industry in large metro areas.

**TABLE 6
OCCUPATIONS**

Medium Metro		Large Central Metro and Large Fringe Metro	
Accountants	1,472	Accountants	28,036
Bookkeeping, Accounting, and Auditing Clerks	910	Financial Managers, Branch or Department	12,930
Tax Preparers	544	Financial Analysts	11,736
Financial Managers, Branch or Department	468	Bookkeeping, Accounting, and Auditing Clerks	10,171
Financial Analysts	293	Auditors	6,045
Auditors	248	Management Analysts	4,188
Treasurers and Controllers	244	Treasurers and Controllers	3,143
Business Operations Specialists, All Other	163	Tax Preparers	2,111
Credit Analysts	131	Business Operations Specialists, All Other	1,953
Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	131	First-Line Supervisors of Office and Administrative Support Workers	1,523

Table 7 shows that the group of occupations in the highest demand for both MSAs are Financial Specialist and Operations Specialties Managers. The need for Financial Specialist and the need of Accounting Hard Skills (Table 4) suggests the need to promote rigorous coursework in the fundamental accounting courses. In addition, the demand for Operations Specialties Managers indicates the need for programs to develop strong knowledge in Business (Hard Skills) along with Leadership (Soft Skills). These results are consistent with our previous results.

The result from the chi square test indicates that there is a difference between occupations and MSA area. This suggests that the Medium and Large MSAs have different economic needs that should be addressed with a regional perspective.

TABLE 7

Occupation	Count	MSA		Total
		Medium	Large	
Advertising, Marketing, Promotions, Public Relations, and Sales Managers	Count	12 _a	412 _b	424
	Expected Count	21.8	402.2	424.0
	% within Occupation	2.8%	97.2%	100.0%
	% within MSA	0.3%	0.5%	0.5%
	% of Total	0.0%	0.5%	0.5%
	Residual	-9.8	9.8	
Business Operations Specialists	Count	324 _a	7782 _b	8106

	Expected Count	417	7,689	8,106
	% within Occupation	4.0%	96.0%	100.0%
	% within MSA	7.4%	9.7%	9.6%
	% of Total	0.4%	9.2%	9.6%
	Residual	-93.2	93.2	
Financial Specialists	Count	2,981 _a	51,920 _b	54,901
	Expected Count	2,826	52,075	54,901
	% within Occupation	5.4%	94.6%	100.0%
	% within MSA	68.4%	64.7%	64.9%
	% of Total	3.5%	61.3%	64.9%
	Residual	155.5	-155.5	
Operations Specialties Managers	Count	742 _a	17,118 _b	17,860
	Expected Count	919	16,941	17,860
	% within Occupation	4.2%	95.8%	100.0%
	% within MSA	17.0%	21.3%	21.1%
	% of Total	0.9%	20.2%	21.1%
	Residual	-177.2	177.2	
Other Management Occupations	Count	205 _a	2,468 _b	2,673
	Expected Count	138	2,535	2,673
	% within Occupation	7.7%	92.3%	100.0%
	% within MSA	4.7%	3.1%	3.2%
	% of Total	0.2%	2.9%	3.2%
	Residual	67.4	-67.4	
Top Executives	Count	93 _a	601 _b	694
	Expected Count	36	658	694
	% within Occupation	13.4%	86.6%	100.0%
	% within MSA	2.1%	0.7%	0.8%
	% of Total	0.1%	0.7%	0.8%
	Residual	57.3	-57.3	
Total	Count	4,357	80,301	84,658
	Expected Count	4,357	80,301	84,658
	% within Occupation	5.1%	94.9%	100.0%
	% within MSA	100.0%	100.0%	100.0%
	% of Total	5.1%	94.9%	100.0%

Expected Counts are rounded to the nearest whole number

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	92.550 ^a	15	.000

Table 7 A results show that there is a statistically significant association between Border Cities and Occupations. That is, demand is different for different occupations between Border and Non-Border Cities. These results indicate that there are different economic characteristics and needs in terms of the jobs.

TABLE 7A

Occupation		BorderCity		Total
		Border City	Non Border City	
Advertising, Marketing, Promotions, Public Relations, and Sales Managers	Count	2 _a	10 _b	12
	Expected Count	5.7	6.3	12.0
	% within Occupation	16.7%	83.3%	100.0%
	% within BorderCity	0.1%	0.4%	0.3%
	% of Total	0.0%	0.2%	0.3%
	Residual	-3.7	3.7	
Business Operations Specialists	Count	138 _a	186 _b	324
	Expected Count	155	169	324
	% within Occupation	42.6%	57.4%	100.0%
	% within BorderCity	6.6%	8.2%	7.4%
	% of Total	3.2%	4.3%	7.4%
	Residual	-17.0	17.0	
Financial Specialists	Count	1,446 _a	1,535 _a	2,981
	Expected Count	1,426	1,555	2,981
	% within Occupation	48.5%	51.5%	100.0%
	% within BorderCity	69.4%	67.5%	68.4%
	% of Total	33.2%	35.2%	68.4%
	Residual	20.2	-20.2	
Operations Specialties Managers	Count	325 _a	417 _b	742
	Expected Count	354.9	387.1	742.0
	% within Occupation	43.8%	56.2%	100.0%
	% within BorderCity	15.6%	18.3%	17.0%
	% of Total	7.5%	9.6%	17.0%
	Residual	-29.9	29.9	
Other Management Occupations	Count	119 _a	86 _b	205
	Expected Count	98	107	205
	% within Occupation	58.0%	42.0%	100.0%
	% within BorderCity	5.7%	3.8%	4.7%
	% of Total	2.7%	2.0%	4.7%
	Residual	20.9	-20.9	
Top Executives	Count	54 _a	39 _b	93
	Expected Count	45	48	93
	% within Occupation	58.1%	41.9%	100.0%
	% within BorderCity	2.6%	1.7%	2.1%

	% of Total	1.2%	0.9%	2.1%
	Residual	9.5	-9.5	
Total	Count	2,084	2,273	4,357
	Expected Count	2,084	2,273	4,357
	% within Occupation	47.8%	52.2%	100.0%
	% within BorderCity	100.0%	100.0%	100.0%
	% of Total	47.8%	52.2%	100.0%

Expected Counts are rounded to the nearest whole number

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	26.091 ^a	5	.000

CONCLUSION

Recent trends indicate a decline in the hiring of accounting graduates and a growing difficulty for CFOs to find adequate talent for their firms. This pointed up to a revision of accounting programs to respond to the demands of the job market.

In order to fill in the gap, the American Institute of Certified Public Accountants developed a framework that identifies technical, business, and professional skills needed to prepare professional accountants. Also, the International Accounting Education Standards Board developed international education standards to address technical and professional skills and professional values, ethics, and attitudes, for use for International Federation of Accountants members.

The development of accounting programs around these standards is primarily directed to preparing students for careers in public accounting and in satisfying the demand for skilled accountants in large central metropolitan areas.

In this paper, we investigated the differences in technical and soft skills demanded by metropolitan areas in the State of Texas and we identified the most important skills in demand in each region.

We collected data from JobsEQ database, which analyses job postings. We assessed the differences between technical and soft skills for 14 Metropolitan Statistical Areas (MSAs) and 12 Occupational groups for the State of Texas.

We studied 117,246 job advertisements from 2017 to 2019. Large Central Metro and Large Fringe Metro Areas together represent 89.2% (104,666) of the job advertisements. Medium Metro Areas and Other Small Metro Areas each represent about 5.3% of the total (6,273 and 6,307).

Communication skills are noticed the most in job advertisements by all metro areas regardless of size. The demand for Analytical and Cooperative/Team Player is the next more important skill in Large Central Areas while Organization skills are the next more important in Medium Metro areas. We found similar results in Border Areas with Communication, Supervision, Organization, Analytical and Detail Oriented skills being the most emphasized.

We used a chi square method to test our hypothesis of an association between Metropolitan Statistical Areas and Skills. We classified the number of words or phrases presented in the job advertisements based on seven skills: Communication, Ethical and Moral Values, Leadership, Problem Solving and Analytical, Team Building, Self-Management, and Managerial.

Our results found that Self-management skills is the most demanded (37.8%), followed by Communication skills (21.1%). The chi square results are significant and imply that MSA and Soft Skills are associated, which suggests that a study of regional needs is in order when developing and revising

accounting programs. We also partitioned the sample into Border Areas and Non-Border Areas. We found that there is no difference between Medium MSA Soft Skills and Border Area Soft Skills.

To study hard skills, we categorized them as Business, Computer, Intellectual knowledge, Language, Routine activities, Operating equipment, and Other. Computer and Intellectual knowledge are the skills in most demand in Texas. Large MSA demand knowledge of how to use ERP solutions (e.g. SAP, ORACLE) while Medium areas demand Quickbooks. We also found that border and non-border areas have many similarities. Thus, we rejected the null hypothesis that Border Cities and Soft Skills are independent of each other.

We found that the most sought occupation in all areas is accountant. Large metro areas, however, also had a high demand for financial managers and financial analysts while medium and border areas demanded Bookkeepers and Tax preparers after accountants.

We found by applying a chi square test that the group of occupations in the highest demand for both MSAs are Financial Specialist and Operations Specialties Managers and that there is a statistically significant association between Border Cities and Occupations. That is, there is a different demand for occupations between Border and Non-Border Cities.

These overall results of this study indicate the need to account for regional economic needs in the revision of accounting programs and the employability of accounting graduates.

ENDNOTES

1. Large central metropolitan counties are areas of 1 million or more population. Medium metropolitan counties are areas of population of 250,000 to 999,999 (NCHS 2013)
2. The Standard Occupational Classification system (SOC) is used to classify workers into occupational categories.
3. "Employability is defined as the set of achievements, understandings and personal attributes that make individuals more likely to gain employment and be successful in their chosen occupations" (Knight and Yorke, 2004 p. 22)
4. JobsEQ is a Software as a Service (Saas) that gives 24-hour online access to labor market data. <http://www.chmuraecon.com/data/>

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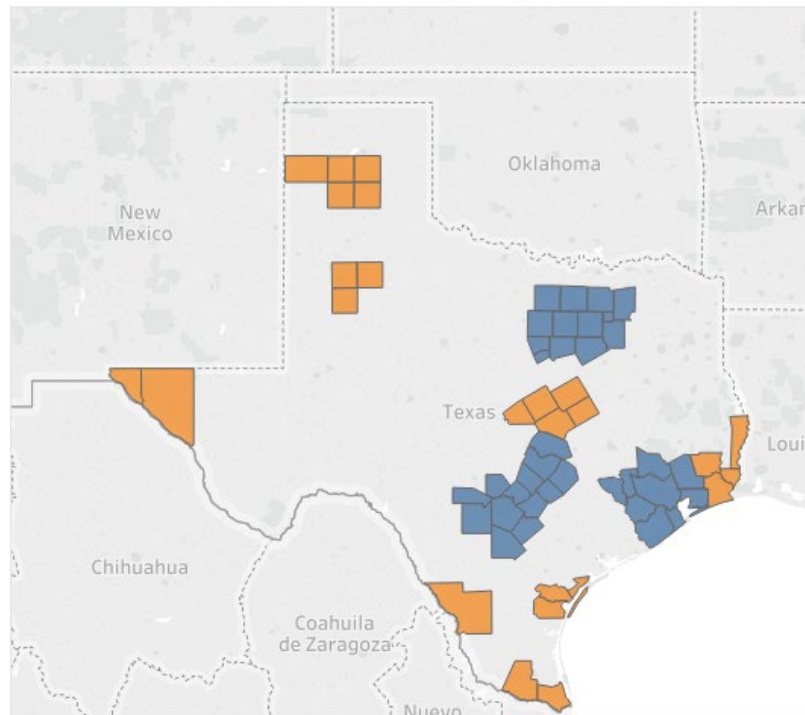
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APPENDIX

APPENDIX 1
 TEXAS METROPOLITAN STATISTICAL AREAS (MSA) AND COUNTIES

No	Metropolitan Statistical Area (MSA)	Metropolitan Counties Name	Metropolitan Counties Number	NCHS Urban Rural Classification (2013)
1	Amarillo	Armstrong, Carson, Oldham, Potter and Randall	6, 33, 180, 188 and 191	Medium Metro
2	Beaumont-Port Arthur	Hardin, Jefferson, Newton and Orange	100, 123, 176, and 181	Medium Metro
3	Brownsville-Harlingen	Cameron	31	Medium Metro
4	Corpus Christi	Aransas, Nueces and San Patricio	4, 178 and 205	Medium Metro
5	El Paso	El Paso and Hudspeth	141 and 229	Medium Metro
6	Killeen-Temple	Bell, Coryell and Lampasas	14, 50 and 141	Medium Metro
7	Laredo	Webb	240	Medium Metro
8	Lubbock	Crosby, Lubbock, Lynn	54 ,152 and 153	Medium Metro
9	McAllen-Edinburgh-Mission	Hidalgo	108	Medium Metro
10	Waco	Falls and McLennan	73 and 155	Medium Metro
11	Austin-Round Rock	Bastrop, Caldwell, Hays, Travis and Williamson	11, 28, 105, 227 and 246	Large Central Metro and Large Fringe Metro
12	Dallas-Fort Worth-Arlington	Collin, Dallas, Denton, Ellis, Hood, Hunt, Johnson, Kaufman, Parker, Rockwall, Somervell, Tarrant and Wise	43, 57, 61, 70, 11, 116,126,129, 184, 199, 213, 220 and 249	Large Central Metro and Large Fringe Metro
13	Houston-The Woodlands-Sugar Land	Austin, Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery and Waller	8, 20 ,36, 79, 84, 101, 146,170 and 237	Large Central Metro and Large Fringe Metro
14	San Antonio-New Braunfels	Atascosa, Bandera, Bexar, Comal, Guadalupe, Kendall, Medina and Wilson	7, 10, 15, 46, 94, 130, 163 and 247	Large Central Metro and Large Fringe Metro

Metropolitan Statistical Area (MSA)



Map based on Longitude (generated) and Latitude (generated). Color shows details about NCHS Urban Rural Classification (2013). Details are shown for Metropolitan Counties Name.

NCHS Urban Rural Classification (2013)

- Large Central Metro and Large Fringe Metro
- Medium Metro

APPENDIX 2

TOP OCCUPATIONS STANDARD OCCUPATIONAL CLASSIFICATION (SOC) SYSTEM

SOCS	Occupations
11-1000	Top Executives
11-2000	Advertising, Marketing, Promotions, Public Relations, and Sales Managers
11-3000	Operations Specialties Managers
11-9000	Other Management Occupations
13-1000	Business Operations Specialists
13-2000	Financial Specialists