

**Trend in Accounting Student Characteristics: Results from 2005-
2010 Archival Transcript Data**

Annhenrie Campbell
California State University, Stanislaus

Freddie Choo
San Francisco State University

David H. Lindsay
California State University, Stanislaus

Kim B. Tan
California State University, Stanislaus

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ABSTRACT

Prior studies (e.g., Nelson et al. 1996, 2002, 2008) that have investigated the characteristics of accounting students were done using survey data. This paper uses archival transcript data to investigate some characteristics of accounting students at one institution, such as trend in graduation rates, distribution of male versus female students, and distribution of transfer versus native students. This study also examines how the grade from the intermediate accounting class can be used as a predictor of the cumulative GPA at the time of graduation.

Keywords: Accounting education, transfers, intermediate accounting, GPA.

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INTRODUCTION AND MOTIVATION

The demand for accountants continues to be strong. Ali Velshi (2011) reported that, according to the Bureau of Labor Statistics, accounting jobs will grow 22% between 2008 and 2018 as more accountants are needed to keep track of international trade in a global environment. Velshi stated that “globally attractive jobs such as public accounting require four-year degrees, then an advanced degree or CPA (certified public accountant) designation, which takes years” (p. 42). Thus, accounting education has an important role in shaping the supply side of future accountants.

Accounting education has been going through some turbulent times. In 1989, the Accounting Education Change Commission (AECC) called for improvements in accounting education. Accounting education should have a broader focus on general education and business organization knowledge; more decision making, problem solving, communication and interpersonal skills, and greater use of technology (AECC, 1990; Boyd et al., 2000). In 1990, the American Institute of Certified Public Accountants (AICPA) endorsed a move towards a 150-hour AICPA member requirement (Boyd et al., 2000). Many professional organizations such as the American Institute of Certified Public Accountants (AICPA), the National Association of State Boards of Accountancy (NASBA) and the Federation of Schools of Accountancy (FSA) have expressed their support of the 150-hour requirement. Legislation has made the 150-hour education effective in most American states for licensing; currently, the Uniform Accountancy Act, the model for state-by-state legislation, requires 150 hours of college education in order to

sit for the uniform CPA examination. In 2000, four major groups (i.e, the Institute of Management Accountants (IMA), the American Institute of Certified Public Accountants (AICPA), the American Accounting Association (AAA), and the then Big 5 accounting professional service firms co-sponsored a study on accounting education by Albrecht and Sack (2000). Albrecht and Sack concluded that accounting education faces severe challenges in the future because fewer and less qualified students are choosing accounting as a major.

The 150-hour requirement has resulted in changes in the accounting curriculum (Lin & Hunter, 1992; Hurt, 2007) at a time when accounting programs are challenged by a general shortage of accounting PhDs (Lin & Hunter, 1992; Danko-McGhee et al., 1992; Sharman, 2007; Fogarty & Markarian, 2007), by a lack of suitable textbooks or reading materials (Lin & Hunter, 1992), and by the continuing expansion of new accounting knowledge. The increase of the educational requirement to 150 hours and the availability of other attractive business majors were expected to lead to a decline in student enrollment and first-time CPA exam candidates (Abels, 2004; Schroeder & Franz, 2004). However, Nelson et al. (2008) recently found that student quality appears to be continuing to increase and interest in careers in public accounting is high, “it would appear that accounting is still attracting good students” (p. 385) and “clearly, with the implementation of Sarbanes-Oxley (SOX, 2002), the job market for accountants has been very good in recent years” (p. 386).

Given the changes in accounting education, there is an increasing interest in understanding the characteristics of accounting students. The Federation of Schools of Accountancy (FSA) conducts an ongoing survey of the characteristics of accounting students from schools in the FSA. Nelson et al. (2008) analyzed the FSA data and noted that there are limitations with survey data. They called for additional research using, for example, non-survey

data. In this study, we answer their call by using non-survey data. We use five years (2005-2010) of archival undergraduate alumni transcript data collected from a medium-sized AACSB-accredited public university. Our study provides further insights to the nature of the accounting student characteristics as accounting education undergoes changes in response to the 150-hour education requirement.

FURTHER INSIGHTS FROM ARCHIVAL DATA

Number of Accounting Majors

The American Institute of Certified Public Accountants (AICPA) has for many years surveyed schools regarding the number of students in accounting departments. In their 2009 report, accounting enrollment continued to grow at the Bachelor's level as follows (p. 17):

<u>2000-01</u>	<u>2001-02</u>	<u>2002-03</u>	<u>2003-04</u>	<u>2006-07</u>	<u>2007-08</u> ¹
134,775	133,435	141,175	142,735	173,299	181,075

In this study, we examined 5-year data from the academic years 2005-06 to 2009-10. We expect that trends in this program are similar to the above surveyed AICPA national trend from 2005 to 2008.

The AICPA also asked surveyed schools to predict future enrollment and found that for 2007-2008, "predictions of future enrollments are, unsurprisingly, markedly different from those of a year ago. At the Bachelor's degree level, 41% of respondents expect lower enrollments going forward (only 4% were in this category a year ago) ... Those citing "unknown" as a response are fully 50% at the Bachelor's level (only 4% a year ago) ... Conversely, those expecting higher enrollments for Bachelor's candidates dropped from 60% to 4% ... Clearly, the economic factors and uncertainties that are affecting both schools and students are driving these

¹ No numbers were reported for 2004-2005 and 2005-2006 (AICPA 2009, p. 17).

findings” (AICPA, p. 6). Thus, even though the survey indicated growth in student numbers, the prediction regarding future enrollment growth was mixed. In this study, we expect the number of accounting majors to fluctuate beyond 2008 due to job availability since “job availability is increasingly the most influential factor in students’ decisions to major in accounting” (Nelson et al., 2008, p. 373). Year-to-year changes in public support due to economic conditions and budgetary constraints may also contribute to fluctuating numbers.

Gender

The survey by the American Institute of Certified Public Accountants (AICPA) reported that in 2007-2008, there were 53% females to 47% males (AICPA 2009, p. 18). Nelson et al. (2008, p. 375) reported that “the gender mix at the undergraduate level has been remarkably consistent since the first survey administration in 1991 (54% female).” Thus, in this study, we expect more female than male students in our archival data.

Accounting Student Performance

Laband et al. (1997, p. 525) reported that cumulative grade point average (GPA) is described to be the “best measure of students’ ability to perform scholastically.” Other measures, such as SAT scores, are often either unavailable or are a noisy signal of academic performance (Laband et al., 1997; Mohrweis, 2010). In this study, we developed regression models to provide further insights into accounting student characteristics and their performance. The independent variables are Gender, Admit Status, and Intermediate I Grade. Gender is included to determine if there is a gender effect.

Laband et al. (1997) found that GPAs of transfer students were higher than grades of native students, and they stated that this may be an indication of grade inflation at the two-year college level. They also found the performance in the upper-level accounting courses of transfer

students to be similar to those of native students (p. 524). We use Admit Status to proxy for transfer versus native students, and to determine if transfer students perform differently than native students.

The intermediate accounting grade seems to be a good predictor of a student's success in the accounting program. Frakes (1977) found the Intermediate accounting grade to be closely related to a student's overall grade point average (GPA). In addition, Hicks and Richardson (1984) also found the Intermediate accounting grade to be related to both the overall GPA and the accounting GPA. In this study, we expect Intermediate accounting (Intermediate I)² grade to be related to the overall GPA, university GPA, and accounting GPA. The overall GPA is the cumulative GPA for all courses completed at our university as well as those courses completed elsewhere and transferred into our university. The university GPA is the cumulative GPA for courses completed at our university, and the accounting GPA is the cumulative GPA of all upper-division accounting courses. The regression models are set up as follows:

$$\text{Overall GPA} = \alpha + \beta_1 \text{Intermediate I Grade} + \beta_2 \text{Gender} + \beta_3 \text{AdmitStatus}$$

$$\text{University GPA} = \alpha + \beta_1 \text{Intermediate I Grade} + \beta_2 \text{Gender} + \beta_3 \text{AdmitStatus}$$

$$\text{Accounting GPA} = \alpha + \beta_1 \text{Intermediate I Grade} + \beta_2 \text{Gender} + \beta_3 \text{AdmitStatus}$$

DATA COLLECTION AND RESULTS

After obtaining university Institutional Review Board (IRB) approval, we obtained and analyzed transcript information of our undergraduate accounting students who graduated from Fall 2005 to Summer 2010.

Number of Accounting Majors

² At our university, the Intermediate accounting course is called Intermediate I.

Table 1 below shows that there were 392 accounting undergraduates who graduated from fall 2005 to summer 2010.

Table 1: Number of Undergraduate Accounting Graduates

Academic Year	Number of graduates
2005-2006	68
2006-2007	82
2007-2008	81
2008-2009	77
2009-2010	84
Total	392

As noted earlier, the AICPA (2002) survey from 2000 to 2008 shows a continuous increase in student enrollment. As shown in Table 1, our university trend is similar to the surveyed AICPA national trend from 2005-06 to 2007-08. There was a drop in 2008-2009 but a recovery of numbers in 2009-2010. As expected, our university student numbers shows fluctuation over the years due to perceptions of accounting job availability by students (Nelson et al., 2008; Velshi, 2011).

Table 2 shows a comparison of the demographics between this study and the study by Nelson et al. (2008). As expected, consistent with Nelson et al. (2008), there are more female (68%) than male (32%) accounting graduates from 2005-2010. This is also consistent with

results from other studies such as Graves et al. (1993), Nelson and Venzryk (1996), and Nelson et al. (2002). In addition, in comparison to Nelson et al.'s Federation of Schools of Accountancy (FSA) schools, our university has more Mexican American/Hispanic and Asian American/Pacific Island students, and fewer Caucasian/White students. About 40% of our accounting students are less than 25 years old in comparison to more than 80% of Nelson et al.'s (2008) accounting students. A majority (76.3%) of our accounting students are transferred students, which has no comparable data in Nelson et al.'s study.

Table 2: Comparison of Demographics Between this Study and the Study by Nelson et al. (2008)

	Nelson et al. (2008)		This study
	Seniors		Undergraduates
	<u>2000</u>	<u>2006</u>	<u>2005-2010</u>
Number of schools	20	20	1
Number of respondents	986	1005	392
Gender (%)			
Male	44.6	43.2	32.4
Female	55.4	56.8	67.6
Ethnic Background (%)			
Caucasian/White	86.7	75.8	35.7
African American/Black	2.9	5.2	1.3
Native American/Indian	0.7	0.4	0.3
Mexican American/Hispanic	3.3	5.2	21.7
Asian American/Pacific Island	4.1	7.9	21.9
Other American Ethnic Group	0.6	1.5	0.0
Non-U.S. Citizen/Foreign	1.7	4.0	2.6
Decline to state			16.5
Age (%)			
Less than 25	82.5	84.3	41.6
25 – 30	9.9	9.2	30.9
30 – 40	4.8	4.5	15.6
Over 40	2.8	2.0	11.9
Status (%)			
Full-time	94.9	94.4	N.A.
Part-time	5.1	5.6	N.A.

Transfer	N.A.	N.A.	76.3
Native	N.A.	N.A.	23.7

Table 3 shows that the GPA from archival data is different from Nelson et al.'s survey (self-reported) data. Our university's archival data contains both "overall" GPA (i.e., cumulative GPA for all courses, even those courses were transferred into the university) and "university" GPA (i.e., cumulative GPA for courses completed at the university). In comparison to Nelson et al., we have fewer students with high (3.6 – 4.0) accounting GPA.

Table 3: Comparison of Student Quality with Study by Nelson et al. (2008)

	Nelson et al. (2008)		This study
	Seniors		Undergraduates
	<u>2000</u>	<u>2006</u>	<u>2005-2010</u>
Undergraduate GPA			
3.6 – 4.0	27.7	32.9	
3.2 – 3.5	32.9	34.7	
2.8 – 3.1	26.0	24.6	
Below 2.8	13.4	7.8	
Overall GPA			
3.6 – 4.0			20.7
3.2 – 3.5			32.1
2.8 – 3.1			30.9
Below 2.8			16.3
University GPA			
3.6 – 4.0			21.7
3.2 – 3.5			32.9
2.8 – 3.1			26.8
Below 2.8			18.6
Accounting GPA			
3.6 – 4.0	37.2	28.5	16.8
3.2 – 3.5	24.9	26.5	21.5
2.8 – 3.1	32.0	31.7	25.5
Below 2.8	15.9	13.3	36.2

Table 4 shows the descriptive statistics of the variables used in the regression models.

Table 4: Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Overall GPA	392	2.07	4.00	3.18	.42
University GPA	392	2.12	4.00	3.18	.44
Accounting GPA	392	1.72	4.00	2.98	.54
Intermediate I Grade	375 ³	2.00	4.00	3.09	.70

Panel A of Table 5 shows the regression output for Overall GPA = $\alpha + \beta_1$ Intermediate I Grade + β_2 Gender + β_3 AdmitStatus. The model has an adjusted R² value of 39.5%, F value of 82.449, and is significant at p = 0.000. Intermediate I grade is a significant (at p = 0.000) predictor of overall GPA (overall GPA is the cumulative GPA of all courses, including those transferred in). This suggests that if students do well in Intermediate I, they will also do well in the remainder of their courses. Gender is also a significant variable (p = 0.023) and the negative regression coefficient indicates that male students are more likely to have lower overall GPA than female students. AdmitStatus is not significant, which suggests that whether a student is a transfer student or native student, it has no impact on their overall GPA.

Panel B of Table 5 shows the regression output for University GPA = $\alpha + \beta_1$ Intermediate I Grade + β_2 Gender + β_3 AdmitStatus. The adjusted R² value is 51.1% and it has an F value of 131.323 and the regression model is significant at p = 0.000. Intermediate I grade is significant (at p = 0.000) predictor of the cumulative GPA of courses completed at our university (i.e.,

³ Some of the transfer students did their Intermediate I in other universities, and their Intermediate I grade was not recorded on our university transcript.

university GPA). This suggests if students do well in Intermediate I, they are most likely to do well in their other university courses. AdmitStatus is significant at $p = 0.042$ and has a negative coefficient, this indicates that transfer students have lower university GPA than native students. Gender is not significant, which suggests that it has no impact on university GPA.

Panel C of Table 5 shows the regression output for Accounting GPA = $\alpha + \beta_1$ Intermediate I Grade + β_2 Gender + β_3 AdmitStatus. The model has an adjusted R^2 value of 58.1%, F value of 174.009, and it is significant at $p = 0.000$. Intermediate I grade is a significant (at $p = 0.000$) predictor of the GPA of upper-division accounting courses (i.e., accounting GPA). Gender and AdmitStatus are not significant variables, which indicate that they have no impact on the GPAs of upper-division accounting courses. The insignificant AdmitStatus is consistent with Laband et al. (1997) who found that the performance in upper-division accounting courses was not different for transfer and native students.

Overall, the three regression models in Table 5 suggest that Intermediate I grade is a significant determinant of the cumulative GPAs (1) for courses completed at our university as well as courses transferred in (i.e., overall GPA), (2) for courses completed only at our university (i.e., university GPA), and (3) for upper division accounting courses (i.e., accounting GPA).

The gender variable is only significant when the dependent variable is overall GPA, which is the cumulative GPA of all courses transferred and those completed at our university, suggesting that transferred female (male) students have higher (lower) GPAs prior to coming to our university. However, once they are enrolled in our university, the gender effect does not impact their university GPAs and accounting GPAs.

Table 5: Regression Output*

Panel A: Overall GPA = $\alpha + \beta_1$ Intermediate I Grade + β_2 Gender + β_3 AdmitStatus

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	2.220	.104		21.332	.000
Intermediate I Grade	.376	.024	.638	15.689	.000
Gender	-.080	.035	-.092	-2.277	.023
AdmitStatus	-.049	.039	-.051	-1.260	.208

Adjusted R² value = 39.5%, F value = 82.449, p = 0.000.

Panel B: University GPA = $\alpha + \beta_1$ Intermediate I Grade + β_2 Gender + β_3 AdmitStatus

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.937	.100		19.383	.000
Intermediate I Grade	.457	.023	.724	19.811	.000
Gender	-.020	.034	-.021	-.583	.560
AdmitStatus	-.076	.037	-.074	-2.044	.042

Adjusted R² value = 51.1%, F value = 131.323, p = 0.000.

Panel C: Accounting GPA = $\alpha + \beta_1$ Intermediate I Grade + β_2 Gender + β_3 AdmitStatus

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.213	.113		10.734	.000
Intermediate I Grade	.591	.026	.767	22.675	.000
Gender	-.005	.038	-.004	-.130	.897
AdmitStatus	-.028	.042	-.023	-.673	.501

Adjusted R² value = 58.1%, F value = 174.009, p = 0.000.

*GPAs for Overall, University, Accounting, and Intermediate I; Gender (1=Female,2=Male), and AdmitStatus (1=Native, 2=Transfer)

LIMITATION AND CONCLUSION

This study has limitations. First, archival transcript data was collected from only one university, which limits its generalizability. Second, the archival transcript data collection was limited to 5 years.

Following Nelson et al. (2008), we examined the trend in accounting student characteristics. They used surveyed data while we used archival transcript data. The results from the archival data provide further insights into student enrollment, demographics and performance. We also reported a detailed analysis of student performance in Intermediate accounting and its impact on overall, university, and accounting GPAs.

The archival data in this study supports the notion that intermediate accounting is a good predictor of student outcomes measured as the overall, university and accounting GPA at the time of graduation. This may help CPA firms to recruit student interns because they usually identify candidates at the intermediate accounting level. Of course, GPA is not the only measure of potential success for student interns and other accounting graduates as other factors like prior work experience, leadership skills, communication skills and teamwork are also important.

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