

# Predictors Of Accounting Salaries: A Comparison Of Bachelor Degree Graduate Salaries With Associate Degree Graduate Salaries

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## ABSTRACT

*This paper reports on an investigation comparing the employment salary of bachelor degree in accounting graduates with associate degree in accounting graduates two years after their graduation. Using hierarchical regression analyses, this study shows the predictive strength of participants' academic qualifications, age, gender, GPA, professional qualifications, field of employment and type of employment on salary-level. Findings reveal that participants with a bachelor degree in accounting earn significantly more than those with an associate degree in accounting and that academic qualification, age, professional qualification and field of employment to be significant predictors of salary. Educational implications of these findings are discussed.*

**Keywords:** Salary predictors, accounting graduates, regression analysis

## INTRODUCTION

Relationships between educational qualifications and employment profile are well documented (see Baum & Payea, 2004; Stokes & Wright, 2008). Employment profiles (i.e., employment rate, length of time unemployed, salary, & job satisfaction) of college graduates are regarded as important criteria for evaluating the returns on higher education. Individuals have used employment profile information to make career-planning decisions as to whether to pursue further education and into which degree program to enroll (Ainley & McKenzie, 1999). Educationalists and human capital theorists (Larkins, 2002; Quiggin, 1995) have used employment profile as a criterion to evaluate the rate of return from an investment in higher education for both individuals and society. Larkins (2002) calculates that, for those holding bachelor degrees, there is a private return of 15% and a social return of 10%.

For young adults entering the workforce, employers place greater importance on educational qualifications than work experience, especially in employment fields that require high skill-levels (Andrews & Wu, 1998). Research (Dusseldorp Skills Forum, 1999) indicates that people without post-high school qualifications are facing increasing disadvantages in the labour market. The paradox is that the earlier a person enters the labour-force, the weaker are their long-term employment prospects.

Investigations into predictors of employment profile typically distinguish between background (e.g., ethnic origin, socio-economic status) variables (Tiggemann & Winefield, 1989), personality and attitudinal measures (Banks & Jackson, 1982), and academic performance (Roth & Clarke, 1998). However, findings from a large range of variables can have limited value when assessing the impact of specific educational qualifications on employment profile. Furthermore, there are several ways to measure returns on employment. With this in mind, this investigation focuses on salary as the employment outcome. This is supported by Clark (1998) who argues that salary is more easily measured than variables relating to other employment outcomes (e.g., job security, job contentment, and interpersonal relationships). Moreover, salary has a linear pattern.

As noted, a review of the literature into the employment outcomes of bachelor degree holders reveals an extensive literature base. However, there is a paucity of literature into the employment outcomes of associate degree graduates. Furthermore, there is limited research comparing the variables impacting on salary levels for bachelor degree holders versus associate degree holders of accounting graduates. Also, broad-based statistics reported by organizations have limited value when assessing the effect of specific educational qualifications. Finally, methodological issues can distort findings, thereby not enabling them to be applied to particular occupations and/or particular geographic locations.

Given that salary is an easily quantifiable outcome of employment, and that it is recognized to have a linear pattern, the present investigation focuses on the impact certain variables have on salary. More specifically, this investigation is directed at graduates with an accounting major. The broad research question emanating from this background is: What independent variables affect the salaries of accounting bachelor degree holders and/or accounting associate degree holders? To answer this research question, the present investigator undertook a study into the employment outcomes of two distinct cohorts of students who had graduated with an accounting degree in the same year within the same location (i.e., Melbourne, Australia).

This paper is organised as follows. The first section provides a background to the pathway to a bachelor degree in accounting and an associate degree in accounting in Australia. The second section reviews the literature relevant to determinants of salary. The method section follows as the third section. The fourth section outlines the results from data analysis. This is followed by a discussion of the findings and the conclusion. Educational policy implications emanating from the findings are proposed in the conclusion.

## **BACKGROUND TO OBTAINING AN ACCOUNTING DEGREE IN AUSTRALIA**

All universities in Australia offer bachelor degrees in accounting. In this nation, a bachelors degree, with an accounting major, encompasses approximately 72 credit hours of coursework that typically takes three years (i.e., six semesters of full-time study) to complete. Having completed this degree, graduates are eligible to sit the professional accounting bodies' exams (i.e., with *CPA Australia* or the *Institute of Chartered Accountants of Australia*).

Most TAFE (Technical and Further Education) Institutes in Australia offer associate degrees in business (accounting). These programs require two years (i.e., four semesters of full time study) to complete. It is possible for an associate degree holder to continue their study to obtain a bachelor degree, however the process of securing a place can be problematic and is dependant upon the university to which an applicant applies. Notably, an associate degree holder is not eligible to sit the accounting profession's exams.

## **LITERATURE REVIEW**

Research relating to variables that predict salary tend to focus on participants academic qualifications, age, gender, grade-point-average, professional qualifications, field of employment and type of employment (see Roth & Clarke, 1998). This section is organized along those seven variables. Directional hypotheses arising from the literature are proposed.

**Academic qualifications:** Studies (see Gilbreath & Powers, 2006) show that people with a bachelor degree earn 30% more than those with an associate degree and 60% more than those with no qualifications. This phenomenon appears to be true for all age groups and for both genders. Also, the trend suggests the gap is widening. Long, McKenzie, and Sturman (1996) undertook a longitudinal study into the salary outcomes of participating in educational programs. For their cohort aged 25 years, Long et al. found that, when compared to those with no educational qualifications, workers who had completed Year 12 only were paid 5.8% higher incomes, versus 6.9% for apprenticeship qualifications, versus 11.7% higher for associate degree qualifications, and 23.7% more for those with bachelor degrees. Further findings of Long et al. (1996) indicate that bachelor degree holders' earnings increase with age at a faster rate than that of other groups. Furthermore, Long et al. found that 41.5% of fulltime workers in the highest 10% of income-earners held bachelor degrees while only 3.3% of fulltime workers in the lowest 10% of income-earners did so. Accordingly, it is hypothesised that:

*H1: Level of academic qualifications is associated positively and significantly with salary.*

**Age:** Research (see Ainley & McKenzie, 1999) found age to be a significant predictor of salary. That is, average salaries increase with age about 10% for every five years, presumably reflecting the effect of previous work experience. More recently, PayScale.com (PayScale.com) shows median salary for those holding a bachelor in accounting for less than one year to be \$44,594, increasing to \$86,198 for those holding that qualification for more than 20 years. Consequently, it is hypothesised that:

*H2: Level of salary is positively and significantly associated with age.*

**Gender:** It has been over thirty years since “equal pay for equal work” legislation was enacted in Australia. Yet, despite this passage of time, the issue of pay-parity is still topical as females, as a group, are presently being paid less than their male counterparts (see ABC, 2008). Statistics released by the NCVER (2001) show that male TAFE graduates are paid an average of 15% more than their female peers (\$23,000) while male university graduates average 10% more than their female peers (\$33,000). These findings are supported by recent statistics (see GCCA, 2008) showing that starting salaries in accounting for female university graduates are 93.3% of starting salaries for male university graduates. Therefore, there is evidence that, even in the same field of employment (e.g., accounting), males earn more than females. Accordingly, it is hypothesised that:

*H3: Level of salary is significantly associated with gender.*

**Grade-point-average (GPA):** Academia and business have long debated the usefulness of academic grades for predicting occupational outcomes. Business argues that grades are an important predictor of job performance because they reflect cognitive ability, motivation, and other useful skills that applicants bring to a job. Personnel managers appear to respond more favourably to resumes documenting high GPA (Roth & Clarke, 1998). Interviewers often use an applicant’s GPA when making hiring decisions as they believe that high grades are associated with high probability of success in employment fields such as accounting and engineering. Additionally, individuals with high grades might be able to gain entrance into graduate school to prepare themselves for highly paid professional occupations. However, academics (see Roth & Clarke, 1998) argue that grades do not take into account a number of important skills (e.g., interpersonal skills) that lead to job success, citing meta-analytic studies which show that grades have limited value in predicting outcomes such as job performance, salary, and promotion. Roth and Clarke show that relationships between grades and starting salary to be modest at  $r = .13$ , moderate for current salary at  $r = .18$ , and negligible for salary growth at  $r = .05$ . Thus, the following hypothesis is proposed:

*H4: Grade-point-average is positively and significantly associated with level of salary.*

**Professional qualifications:** As noted, research shows that degree qualifications are positively and significantly associated with higher salaries. Moreover, evidence suggests that professional qualifications are also positively associated with salaries (Andrew, 1998). Subsequently, it is hypothesised that:

*H5: Professional accounting qualifications are associated positively and significantly with salary.*

**Field of employment:** Salary is also likely to be largely affected by field of employment, denoting the skills and the responsibility required of that role. Within the field of accounting, there are a wide range of occupations. Payscale.com (2008) shows the following average annual salaries for jobs within the accounting field; bookkeeper, \$28,000; accounting clerk, \$28,500; payroll administrator, \$32,500; and senior accountant, \$48,000. Furthermore, the website notes that those who move from being an accountant earning \$42,000 per year to become a Chief Financial Officer earn \$112,508 per year. Thus, the following is hypothesised:

*H6: Field of employment is significantly associated with salary.*

**Employer type:** Employer type refers to the ownership structure of the organization within which the accountant is working; that is, government (federal, state, local), company (public or private), non-profit, or private practice.

Statistics from Payscale.com (2008) show an interesting trend. Presently, accountants employed by the federal government earn the highest salaries (\$82,000); considerably more than those working for a private practice firm (\$55,121), a company (\$63,116), a non-profit organization (\$61,037), and state/local government (\$42,952). This trend is possible evidence of the growing professionalism of the federal government (see Taylor, 2005). Thus, the following hypothesis is proposed:

*H7: Employer type is significantly associated with salary.*

## **RESEARCH METHOD**

To answer the research question noted earlier, the present investigator surveyed two groups of graduates; namely, those who had graduated from two universities in Melbourne, Australia with a bachelor degree in accounting, and those who had graduated from a TAFE Institute in Melbourne, Australia with an associate degree in accounting. Note that participants were excluded if they were not working full-time (as part-time earnings would distort income levels).

For the bachelor degree cohort (n = 162), ages range between 22 and 27 years with a mean of 25 years (SD = 1.39 years). Notably, mean age when commencing their degree is 18 years. Other demographic statistics show 64% to be male, 90% are Australian-born, and 96% have English as their first language. 73% work as accountants, 17% in accounting-related positions, 4% in office-related positions and 6% not in office-related jobs. Notably, of this cohort, 46 participants (28%) had completed professional accounting qualifications with 78% completing CPA exams (with CPA Australia) and 22% completing exams with the Institute of Chartered Accountants (ICAA). Of the 36 participants holding CPA qualifications, eight are employed in public accounting firms, 24 in private industry, and three in state government. Meanwhile, the 11 holders of ICAA qualifications are all employed in public accounting firms.

The associate degree cohort comprised 78 respondents who indicate their mean age to be 27 years (SD = 7.80 years) ranging between 21 and 50 years. Females comprise 55%. Of all participants in this group, 69% were born in Australia and English is the first language for 67%. Mean age when commencing this degree was 24 years (ranging between 18 & 48 years; SD = 8.07 years). 62% work as assistant accountants, 28% in accounting-related positions, 16% in office-related positions and 4% not in office-related jobs. None had completed professional accounting exams.

The survey instrument, *Employment and Further Education Questionnaire* (EFEQ), was developed by the present investigator. The section of the EFEQ that relates to employment outcomes is adapted from a Graduate Careers Council of Australia questionnaire (GCCA, 2000) and focuses on graduates' type of employment (e.g., accountant, accounting-related, office-related), current industry sector in which they are employed (e.g., public accounting, government), and their present gross salary (in \$10,000 bands: e.g., \$30,000-\$39,999).

The EFEQ was mailed to participants approximately two years after they had graduated. In line with Tiggeman (1989), the two-year period was chosen by the present investigator to provide time for graduates to secure full-time employment in their chosen field. Participants were asked to complete and return the questionnaire within two weeks of receiving it. One month after the EFEQ was mailed, reminder letters, with the same questionnaire and another reply-paid envelope attached, were sent to participants who had not responded to the first mailing. No further follow-up was undertaken beyond the first reminder mail-out. The response rate for the bachelor degree graduates is 30% whilst the response rate for the associate degree graduates is 28%. Data is analysed using SPSS.

## **RESULTS**

Descriptive statistics regarding salary levels per cohort are reported in Table 1.

Table 1: Salary according to cohort and gender

Salary	Bachelor degree graduates ( <i>n</i> =162) %	Associate degree graduates ( <i>n</i> =78) %
Less than \$20,000	3.7	10.4
\$20,000 to \$29,999	14.6	32.8
\$30,000 to \$39,999	37.2	35.8
\$40,000 to \$49,999	25.0	14.9
\$50,000 to \$59,999	9.8	6.0
\$60,000 to \$79,999	7.3	0.0
\$80,000 to \$99,999	1.2	0.0
Males		
- mean	\$34,700	\$27,700
- SD	(1.44)	(1.14)
Females		
- mean	\$35,200	\$26,900
- SD	(1.07)	(0.98)
All		
- mean	\$35,000	\$27,300
- SD	(1.26)	(1.05)

Table 1 reveals that the bachelor degree cohort is paid a 28% higher salary than their associate degree counterparts (\$35,000 vs. \$27,300). However, there appears to be no significant differences, according to gender, in the salaries paid. In fact, female bachelor degree holders report their salaries to be 1.5% higher than their male peers, while female associate degree holders indicate their annual salary to be less than 3% that of the male grouping. Also, salaries exceeding \$60,000 per annum are paid to 8.5% of bachelor degree holders yet to none of the associate degree holders. Thus, findings reported in Table 1 support the overall proposition that the higher the qualification then the higher the salary, but does not support any significant disparity of salary according to gender. Accordingly, *H1* is supported while *H3* is not.

To investigate the impact of the other independent variables (e.g., age, GPA, professional qualifications) upon salary, a three-step hierarchical multiple regression analysis was employed for each cohort to determine predictors of salary. Variables were entered in three blocks (see Table 2). Background variables (i.e., gender, current age) were entered as Block 1. Educational variables (i.e., GPA, professional qualifications) were entered as Block 2. The third block of variables entered included type of employment (i.e., accountant, accounting-related, office-related).

Table 2: Independent variables for hierarchical regression analysis on salary

Variable	Code	Explanation
<i>Block 1</i>		
• Gender	GENDER	1 = male, 0 = female
• Current age	AGE	Continuous
<i>Block 2</i>		
• GPA	GPA	Average of course grades
• Professional qualifications	PROFQUAL	1 = yes, 0 = no
<i>Block 3</i>		
• Employment type 1	ACCTNG	1 = accountant; 0 = not accountant
• Employment type 2	ACCREL	1 = accounting-related, 0 = not accounting-related
• Employment type 3	OFFREL	1 = office-related; 0 = not office-related

Following Tabachnik and Fidell (1996), Tables 3 and 4 display correlations between variables; unstandardised regression coefficients (*B*) and intercept; standardised regression coefficients ( $\beta$ ); semipartial correlations ( $sr_i^2$ ); and multiple *R*,  $R^2$ , and adjusted  $R^2$ , after entry of all independent variables.

**Bachelor degree graduates.** After Step 1, with *current age* in the equation,  $R^2 = .04$ ,  $F_{inc}(1, 109) = 4.41$ ,  $p < .05$ . After Step 2, with *professional qualifications* in the equation,  $R^2 = .17$ ,  $F_{inc}(2, 108) = 10.83$ ,  $p < .001$ . Step 3 introduced *accounting related employment* into the equation,  $R^2 = .25$ ,  $F_{inc}(3, 107) = 11.67$ ,  $p < .0001$ . With all independent variables entered into the equation Adjusted  $R^2 = .23$ ,  $F_{inc}(3, 107) = 11.67$ ,  $p < .0001$  (see Table 3). Thus, higher salaries are paid to older employees holding professional accounting qualifications and working in accounting-type positions (e.g., manager), rather than as accountants.

**Associate degree graduates.** At Step 1, with *current age* in the equation,  $R^2 = .05$ ,  $F_{inc}(1, 96) = 4.70$ ,  $p < .05$ . Step 2 did not add any variables to the equation. At Step 3, two variables were added; *Accounting related position*,  $R^2 = .10$ ,  $F_{inc}(2, 95) = 5.67$ ,  $p < .01$ ; and *Accountant*,  $R^2 = .14$ ,  $F_{inc}(3, 94) = 5.23$ ,  $p < .01$ . With all independent variables entered into the equation Adjusted  $R^2 = .12$ ,  $F_{inc}(3, 94) = 5.24$ ,  $p < .01$  (see Table 4). Thus, for this cohort, higher salaries are paid to older employees working in accounting or accounting-related positions.

It is apparent from regression analyses that current age and working in accounting related employment is a significant predictor of salary level for all participants. Additionally, a significant predictor of salary for bachelor degree graduates is holding professional qualifications, while for associate degree graduates it is working as an accountant. Notably, gender and GPA are non-significant predictors of salary. Thus, *H2*, *H5*, and *H6* are supported by the findings whereas *H4* and *H7* are not.

**Table 3: Bachelor degree graduates**

Variable	SALARY (DV)	AGE	PROFQUAL	ACCTREL	B	$\beta$	$sr_i^2$ (inc)
AGE	.20*				.12	.19	.03*
PROFQUAL	.38***	.14			1.05	.36	.12**
ACCTREL	.25**	.12	-.12		.86	.29	.08**
				Intercept = 1.44			
Means	\$34,770	26.0	.20	.72			
SD	1.16	1.97	.40	.45			
						$R^2 = .25$	
						Adjusted $R^2 = .23$	
						Multiple R = .49***	

**Note.** <sup>a</sup> $F = 11.67$ ,  $df = 3$  (107),  $p < .0001$ . \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

**Table 4: Associate degree graduates**

Variable	SALARY (DV)	AGE2	ACCTREL	ACCTNG	B	$\beta$	$sr_i^2$ (inc)
AGE2 <sup>b</sup>	.22*				.03	.22	.04*
ACCTREL <sup>c</sup>	.23*	-.05			.55	.25	.06*
ACCTNG <sup>d</sup>	.01	.11	-.65***		.52	.25	.04**
			Intercept = 1.25				
Means	\$25,710	29.58	0.31	0.49			
SD	1.04	8.13	0.46	0.50			
						$R^2 = .14$	
						Adjusted $R^2 = .12$	
						Multiple R = .37**	

**Note.** <sup>a</sup> $F = 5.24$ ,  $df = 3$  (94),  $p < .01$ . \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

**DISCUSSION**

Findings support *H1*. That is, bachelor degree graduates report having significantly higher salaries than their associate degree peers. These findings are in line with an extensive body of literature showing that holders of

bachelor degrees are advantaged when seeking employment, especially in fields requiring high skill-levels (e.g., accounting).

Overall, findings resulting from hierarchical regression analyses support *H2*, *H5* and *H6*. That is age, professional qualifications, and field of employment are positively associated with higher salaries. For bachelor degree participants, higher salaries are associated significantly with being older. Furthermore, for this cohort, holding a professional qualification is significantly associated with higher salary levels. Meanwhile, associate degree graduates employed in accounting related positions are paid significantly higher salaries than those working in non-accounting-related positions. However, findings do not support *H2*, *H4*, and *H7*. That is gender, GPA, nor employer-type do not influence salary.

## CONCLUSION

Clearly, students holding a bachelor degree in accounting earn higher salaries than do students with an associate degree in accounting. It is for this reason that obtaining a bachelor degree is increasingly sought. It is anticipated that the distinct advantage in the employment market held by bachelor degree graduates will encourage further growth in university enrolments. This labour-market advantage is even more pronounced for young adults wanting to pursue a career in accounting for, as previously noted, entry into the accounting profession (e.g., CPA, CMA) is dependent upon, firstly, completing a bachelors degree in accounting. Hence, students holding only an associate degree in accounting will only be able to work as paraprofessional accountants instead of professional accountants.

The educational implications of these findings suggest that universities in Australia should provide a guaranteed place for applicants who have completed an associate degree. To not provide an offer to these students can deny them the opportunity to fulfil their career ambitions. Although it is satisfying to see universities accepting higher proportions of associate degree applicants, it is apparent that not all capable students are provided with a university place (see StudentWeb, 2008). Hence, it is suggested by the present investigator that government policy should stipulate that all associate degree graduates applying to complete a bachelor degree should be offered a university place, thereby providing them with an opportunity to forge a career as a professional accountant rather than a paraprofessional accountant.

## AUTHOR INFORMATION

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