

THE EFFECT OF THE 150-HOUR RULE ON VOLUNTARY TURNOVER IN PUBLIC ACCOUNTING FIRMS

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ABSTRACT

Certification requirements for public accountants have changed in recent years as a result of the American Institute of Certified Public Accountants' (AICPA) endorsement of an education requirement that consists of 150 semester hours. Some jurisdictions continue to debate related issues such as the amount and type of experience required to become certified.

The AICPA anticipated that one benefit of the 150-hour rule would be a reduction in voluntary employee turnover in public accounting firms. Prior research indicates that the completion of certification experience requirements affects the timing of turnover in public accounting because individuals refrain from resigning until they have met the experience requirement. This study utilizes event history analysis to compare voluntary turnover by CPA-firm staff in Florida, a state which has implemented the 150-hour rule with no experience requirement, to Georgia, which has not yet implemented the 150-hour education requirement.

While benefits may accrue from the 150-hour education requirement, reduced employee turnover does not appear to be one of them. The timing of employee turnover does appear to be affected by the experience requirement of the jurisdiction. The results of this study may have implications for the public accounting profession as a whole in evaluating the impact of the changes in the certification requirements on the profession, and for public accounting firms in particular in planning for their human resource needs.

INTRODUCTION

Over the past twenty-five years, practitioners and academics in the accounting profession have asserted the need for post-baccalaureate education for accountants. The American Institute of Certified Public Accountants' (AICPA) interest in changing the education requirements began over two decades ago (AICPA, 1990) and culminated in a by-law change in 1988 requiring 150 hours of education for institute membership. Thirty-nine jurisdictions have now adopted the "150 Hour Rule" with implementation dates through the year 2001. Fewer jurisdictions have made changes to the amount and type of experience required for certification, however, the debate regarding the experience requirement continues.

The stated intent of the AICPA's recommendation is to improve the quality of service provided by public accountants to society. Other arguments for post-baccalaureate education include the need for increased competency of CPAs and the public's confidence in them. The Commission on Professional Accounting Education (CPAE) issued a report in 1983 stating that post-baccalaureate education would "attract higher caliber students ... enhance their professional awareness and contribute to their commitment to the profession" with results including improvement in client service, staff retention and staff advancement (CPAE, p. 25). If this is the case, these regulatory changes may impact the management of public accounting firms as business enterprises. Robson, Barefield, and Smith (1992) indicate that the experience requirement impacts the timing of voluntary employment turnover in public accounting firms. It is possible that lengthening the education requirement will also impact turnover. If so, both the experience and education requirement will impact firms' hiring, training, and retention costs.

The purpose of this study is to provide empirical evidence of whether post-baccalaureate education impacts voluntary employment turnover in public accounting. The approach will be to compare turnover patterns in Florida, a large state that adopted a 150 hour education requirement with a zero experience requirement in 1984, to turnover patterns in Georgia, a state that until recently had the "old" policy calling for a baccalaureate degree and two years of public accounting experience. Voluntary turnover is also compared for staff with and without master's degrees.

HISTORY OF THE 150 RULE AND SUBSEQUENT STUDIES

The AICPA's interest in changing the current education and experience requirements began over two decades ago (AICPA, 1990). In 1967, the AICPA's Committee on Education and Experience Requirements for CPAs (the Beamer Committee) ascertained that the accounting curricula for CPAs needed more specific guidance. The committee formulated ten statements of education policy (including statements calling for at least five years of education and no qualifying experience). These ten statements were adopted by the AICPA in 1969.

Adoption of the 150-hour rule by most jurisdictions came only after the AICPA membership voted in 1988 to make the 150-hour education requirement part of the AICPA bylaws. Until 1987, only three states (Hawaii, Florida, and Utah) had adopted the 150-hour education requirement.

Initial arguments for imposing a post-baccalaureate education requirement included one that turnover would be reduced overall. In the Commission on Professional Accounting Education's report (p. 25), in a section entitled "Reduced Personnel Turnover", the Committee said:

"Persons entering the profession with post-baccalaureate education will be better qualified in several important respects to more quickly grasp the complexities of the business environment, to offer improved services to the public, and, consequently, to be successful practitioners. Therefore, a larger percentage of those who have post-baccalaureate are] likely to be retained by firms than has been the case with persons having only an undergraduate education."

In the same section of the report, the Commission said (p. 25):

"On the other hand, it can be argued that, because they are more competent, persons with post-baccalaureate education will have more options for alternative employment and therefore will voluntarily leave public accounting at a higher rate than bachelor's degree holders."

The CPAE provided anecdotal evidence from public accounting firms supporting both sides of the turnover argument.

Researchers have supported the CPAE's argument that post-baccalaureate education results in better qualified, more committed employees. Ellyson (1983) hypothesized that post-baccalaureate education would result in an increase in commitment of those entering the profession. Anderson (1988) repeated the CPAE's argument that improved retention could result from post-baccalaureate education due to an increased commitment as students made a greater investment in their professional education. In addition, it has been argued that stature is gained through graduate education (Holder, Larsen, and Williams, 1985), and such stature results (supposedly) in higher calibre students entering the profession (Ellyson, 1983). Siegel (1987) provided some evidence that individuals with post-baccalaureate education had much higher retention rates than individuals without advanced degrees. Deppe, Smith, and Stice (1992), however, found that the average duration of employment was no different for individuals with bachelor's degrees versus those with master's degrees.

SAMPLE SELECTION AND METHODOLOGY

Data were obtained from personnel records for staff accountants employed in four offices of two big-six accounting firms. Three of the four offices represented one CPA firm and the fourth represented the second CPA firm. The data were collected for the period 1984-1988 which came after the 1983 effective date of Florida's 150-Hour Rule and allowed for employees hired in 1988 to have up to three years tenure at the time of data collection. Of the 648 new-hires between 1984 and 1988, 216 were eliminated from the sample due to missing data or due to employee having had prior public-accounting experience. Only employees who voluntarily left the firms were included in the sample.

Table 1 summarizes the sample used to analyze turnover patterns. The table shows the number of new-hires by year of hire, type of degree, gender, and department (audit or tax) for both Georgia and Florida.

Table 1 Sample Selection & Breakdown by State, Department & Gender						
New-Hires 1984-88	648					
Previous Experience	(106)					
Missing Data	(110)					
Final Sample Size	432					
Year of Hire	Georgia			Florida		
	Bachelor's	Master's	% with Master's	Bachelor's	Master's	% with Master's
1984	26	16	38	18	11	38
1985	33	12	27	21	13	38
1986	25	16	39	45	8	15
1987	41	10	20	26	13	33
1988	43	12	22	32	11	26
Total	168	66	28	142	56	28
Male	75	45	38	74	34	31
Female	93	21	18	68	22	24
Audit	151	32	17	112	30	21
Tax	17	34	67	30	26	46

We include as a Master's degree, 11 observations of additional degrees beyond a Bachelor's other than a Master's.

For the five year period, there is no significant difference in the proportion of new-hires between Georgia and Florida. The proportion of males, females, and audit staff obtaining Master's degrees is not significantly different between Georgia and Florida, but the proportion of tax new-hires with a Master's degree in Georgia is significantly greater in Georgia than in Florida ($\chi^2 = 4.44$, $p < .035$).

Interestingly, the Florida offices hired bachelor degree students in the same proportion as the Georgia offices. This is surprising given that the employees needed the additional hours of education for AICPA membership. Informal discussions with CPA firm management indicated that many of the employees hired subsequent to Florida's education requirement change completed the additional hours on a part-time basis after beginning employment.

METHODOLOGY

The methodology used in this study is called event history analysis (see Allison, 1984 or Tuma and Hannan, 1978). Event history analysis (also referred to as survival analysis) is useful when the phenomenon of interest is a qualitative event happening to a sample member. In this study, the event of interest is voluntary employment termination. Event history analysis has gained popularity in recent years in turnover research due to its ability to deal with both the occurrence and timing of turnover. In addition, event history analysis has an advantage over traditional statistical methods in its ability to accommodate "censored data." Censored data are those cases in which the subject is employed at the end of the observation window. Traditional statistical techniques used in turnover research would treat these observations as missing or equal to the longest observed time which could lead to inappropriate assumptions or a loss of information.

The two basic functions utilized in event history analysis are the hazard rate, denoted by h_t , and the survival function, denoted by S_t (Lee, 1980). The hazard rate is the conditional probability (or rate) of an event occurring during a given time interval $(t, t+1)$ given that the event has not occurred prior to time t (Hutchinson, 1988). The survival function is a cumulative function that characterizes the probability that a subject "survives" to time t . In this study, the survival function denotes those subjects who do not voluntarily leave the firms.

Event history analysis focuses on duration, therefore the sample data were input in units of time. Each staff member's employment data were recorded in six month intervals from the point of hire until they voluntarily terminated, or until the time of observation if still employed.

RESULTS

Survival functions, S_t , and hazard rates, h_t , are shown partitioned by state in Table 2. One can observe in Table 2 that 176 subjects survived until their sixth interval of employment at which point 23 voluntarily exited the firm ($h_t=.1460$). The estimated probability of a subject surviving until the end of the sixth interval (i.e., not voluntarily terminating) is .7159. The probabilities are not the result of a straight frequency count, but rather the result of the estimations of the functions given below Table 2.

Period (half-years) (1)	Number Entering (2)	Censored (3)	Number Exiting (4)	Hazard Rate ^a $h(t)$ (5)	Survival Function ^a $S(t)$ @ end of period t . (6)	
1	233	0	0	0	1	
2	233	1	13	.0575	.9441	
3	219	3	7	.0327	.9137	G
4	209	4	12	.0597	.8607	E
5	193	10	7	.0379	.8287	O
6	176	14	23	.1460	.7159	R
7	139	14	18	.1463	.6183	G
8	107	1	3	.0286	.6009	I
9	103	5	7	.0722	.5590	A
10	91	5	4	.0462	.5337	
11	82	82	0	0	.5337	
1	198	0	0	0	1	
2	198	1	7	.0361	.9646	
3	190	2	14	.0769	.8931	F
4	174	8	20	.1250	.7880	L
5	146	13	18	.1379	.6864	O
6	115	12	21	.2132	.5541	R
7	82	12	7	.0966	.5031	I
8	63	9	4	.0708	.4687	D
9	50	6	3	.0659	.4388	A
10	41	7	5	.1429	.3803	
11	29	27	2	.1379	.3312	

Tests For Homogeneity Across Survival Distributions: 1 df
 Log-Rank 7.6666; probability = .00563
 Generalized Wilcoxon 9.9842; probability = .00158

^a Let n_j = the number of observations and r_j = the risk set = $n_j - C_j / 2$ where C_j is the number of censored observations. Let m_j be the number exiting and q_j the proportion (m_j / r_j). The proportion surviving (S_j) is $(1-q_{j-1})S_{j-1}$. The hazard rate, $h_t = 2q_j / (w(2-q_j))$ where w is the interval width.

Column six of Table 2 indicates that the survival rate in Georgia (53.37%) is greater than in Florida (38.03%) after 10 periods (five years). The Generalized Wilcoxon and Log-Rank homogeneity tests allow us to reject the proposal that the differences are due to chance.

The hazard rate shown in column five of Table 2 indicates the effect the experience requirement has on the timing of voluntary turnover in the two states. Voluntary turnover is more likely in intervals six and seven (the third year) in Georgia, whereas in Florida the rates are higher in periods four, five, and six (1.5 to 2.5 years). Since Florida has no experience requirement and Georgia has a two-year experience requirement, these results imply that an experience requirement effect exists. It appears that subjects in Georgia delay termination until the experience has been met. Similar support was found by Robson, et. al. (1992) in a comparison of one- and two-year experience requirement jurisdictions.

Table 3 presents hazard and survival rates for the subjects partitioned by the type of degree held. We are unable to reject the hypothesis that there is no difference in voluntary turnover patterns between subjects with a Master's degree at the time of hire and subjects with Bachelor's degrees. Generalized Wilcoxon and Log-Rank tests (reported below Table 3) indicate that the two survival distributions do not differ statistically from each other.

Table 3: New-Hires With A Master's and A Bachelor's Degree						
Period (half-years) (1)	Number Entering (2)	Censored (3)	Number Exiting (4)	Hazard Rate ^a h(t) (5)	Survival Function ^a S(t) @ end of period t. (6)	
1	122	0	0	0	1	M A S T E R S
2	122	0	4	.0333	.9672	
3	118	1	7	.0614	.9096	
4	110	2	8	.0762	.8428	
5	100	4	6	.0632	.7912	
6	90	10	12	.1519	.6795	
7	68	7	8	.1322	.5952	
8	53	1	3	.0588	.5612	
9	49	3	3	.0652	.5258	
10	43	6	5	.1333	.4601	
11	32	32	0	0	.4601	
1	309	0	0	0	1	B A C H E L O R S
2	309	2	16	.0533	.9481	
3	291	4	14	.0496	.9021	
4	273	10	24	.0938	.8213	
5	239	19	19	.0864	.7533	
6	201	16	32	.1808	.6284	
7	153	19	17	.1259	.5540	
8	117	9	4	.0362	.5343	
9	104	8	7	.0725	.4969	
10	89	6	4	.0476	.4738	
11	79	77	2	.0506	.4504	
Tests For Homogeneity Across Survival Distributions: 1 df						
Log-Rank .1646; probability = .68496						
Generalized Wilcoxon .45987; probability = .49768						
^a Let n_j = the number of observations and r_j = the risk set = $n_j - C_j / 2$ where C_j is the number of censored observations. Let m_j be the number exiting and q_j the proportion (m_j / r_j). The proportion surviving (S_j) is $(1 - q_{j-1})S_{j-1}$. The hazard rate, $h_j = 2q_j / (w(2 - q_j))$ where w is the interval width.						

CONCLUSIONS

The comparison of turnover patterns across jurisdictions clearly does not support the view that post-baccalaureate education, along with dropping the experience requirement will improve employee retention. The observation was, in fact, the opposite. The results are consistent with prior research (Robson, et. al., 1992) indicating that employees tend to delay quitting until they have completed the experience requirement. Absent an experience requirement, subjects in Florida tend to quit earlier than those in Georgia. Even though one might expect retention rates to equalize after 3 or 4 years, this was not the case given that survival rates were consistently lower in Florida after the second year.

Attributing cause to behavior is difficult in turnover research due to the complexity of the phenomenon. The ability to generalize our results is limited due to the restricted sample. In addition, factors which may be office-specific that may affect turnover are excluded and could produce a biased sample. In addition, we use retention on the first job as an indicator of the subject's commitment to the profession. Employees who voluntarily terminate may be committed to the profession yet choose to practice in a different firm. Our initial sample, however, included only 16% of subjects with previous public accounting experience. This suggests that most voluntary terminations are associated with departure from public accounting. It seems reasonable to assume that tenure on the first job is an important indicator of commitment to the public accounting profession.

An additional limitation of the study is that the quality of the post-baccalaureate education received was not addressed. Many schools focus on degree programs for the additional education requirement as opposed to a patchwork of courses taken to meet the requirement. This is an important issue if competence and commitment are the result of the type of post-baccalaureate education obtained.

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