FINANCIAL SERVICES REVIEW

Financial Services Review 12 (2003) 95–114

Factors Associated with Success on the CFP® Certification Examination

E. Vance Grange[a,*], Vickie L. Hampton[b], Richard Cutler[c], Thomas P. Langdon[d], Michael T. Ryan[e]

[a]*School of Accountancy, Utah State University, 3540 Old Main Hill, Logan, UT 84322-3540, USA*
[b]*Personal Financial Planning Program, Texas Tech University, Box 41162, Lubbock, TX 79409-1162, USA*
[c]*Department of Mathematics and Statistics, Utah State University, 3900 Old Main Hill, Logan, UT 84322-3900, USA*
[d]*The American College, 270 South Bryn Mawr Avenue, Bryn Mawr, PA 19010, USA*
[e]*Professional Planning Group, 9 Granite Street, Westerly, RI 02891, USA*

Accepted 24 April 2003

Abstract

We surveyed examinees from three administrations of the CFP® Certification Examination. Factors that are statistically significantly associated with passing the exam include primary business activity; highest degree earned; undergraduate GPA; the CPA, Enrolled Agent, and securities licenses or designations; and being a personal financial planning practitioner. Other studies have identified associations between CPA exam success and both highest degree earned and undergraduate GPA. We are not aware of other studies that have established a relationship between experience in the field and success on the related professional exam. Interestingly, employer incentives for candidates, including bonuses, raises, and promotions, do not have a significant impact on pass rates. © 2003 Academy of Financial Services. All rights reserved.

1. Introduction

Certified Financial Planner Board of Standards, Inc. is a professional regulatory organization that fosters professional standards in personal financial planning so that the public values, has access to, and benefits from competent financial planning. To fulfill initial

* Corresponding author. Tel.: +1-435-797-2334; fax: +1-435-797-1475.
E-mail address: Vance.Grange@usu.edu (E.V. Grange).

certification requirements to use the CFP®, Certified Financial Planner™, and certification marks, individuals must satisfy educational, examination, work experience, and ethical requirements. In 1991, CFP Board introduced a single comprehensive examination to test the candidates' integration and application of the knowledge important to providing financial advice to clients. The CFP® Certification Examination is designed to assess a candidate's ability to apply financial planning knowledge to real-life financial planning situations.

In 1999, CFP Board's Board of Examiners, working in conjunction with CFP Board's Board of Governors and the staff of Certified Financial Planner Board of Standards, embarked on a new project. The goal of that project was to identify factors that are associated with success on the CFP® Certification Examination and, wherever applicable, to share that information with individuals selecting a CFP Board-Registered Program, candidates preparing for the CFP® Certification Examination, and CFP Board-Registered Programs evaluating their educational training.

2. Literature review

This project marked the first attempt to collect data from CFP® Certification Examination testers to identify factors that are associated with successful performance on this exam, so no literature specifically related to the CFP® Certification Examination exists. However, much can be learned from studies of factors related to success on other licensing and certification exams, especially those in allied fields. In a review of the literature concerning success on the CPA examination, several factors emerged.

Using data from the Uniform Statistical Information Questionnaire (USIQ) completed by candidates taking the November 1965 and May 1966 CPA examinations in Illinois and Kansas, Reilly and Stettler (1972) identified scholastic record in college and inherent academic ability, as measured by scores on the SAT College Entrance Exam, as being positively associated with success on the CPA exam. They found that the number of hours taken in accounting and graduate study was not statistically associated with success, and they received inconclusive results on several other variables studied. Using the USIQ completed by candidates in 49 states for the May 1970 examination, Leathers (1972) also found a positive correlation between SAT scores and success on the CPA examination. In a second study using May 1970 USIQ data, Sanders (1972) reported that candidates with higher degrees performed better than those with lower degrees, but the hours taken in accounting did not correlate with exam success. He also found that students who took classroom courses rather than correspondence courses had a higher pass rate, but work experience did not contribute to success on the CPA examination.

Several studies published in the 1980s added to this earlier work. Leathers et al. (1984) confirmed the importance of having an advanced degree, a higher grade point average (GPA), and a higher SAT score, and also found that testers who participated in a CPA review course and who spent more hours studying performed better on the CPA examination. Titard and Russell (1989) also found that having advanced degrees, high GPAs, and taking a review course were associated with successful performance on the CPA examination. In addition, they noted that those with advanced degrees passed the CPA exam at a higher rate than those without an advanced degree,

regardless of GPA. Using regression analysis, Dunn and Hall (1984) confirmed previous findings regarding SAT scores and GPA, and found that completion of a CPA review course was significantly related to passing 3 out of the 4 parts of the examination.

In response to debates concerning the raising of educational requirements for the CPA license, research continued in this area. From a study of 476 baccalaureate and 353 masters degree graduates of the School of Accountancy and Information Systems at Brigham Young University for the period from 1979 to 1988, Deppe and Smith (1992) reported that the percentage of graduates passing the CPA exam was higher for master's than for baccalaureate degree holders. In addition, the average number of years to pass the examination was about one year longer for bachelors than for masters graduates. The authors suggested that this may be because of the effectiveness of the masters program in preparing students for the examination, or that it may be the result of higher entrance requirements established for the graduate program.

More recently, results from a nationwide study using 1996–1998 data found scholastic aptitude, as measured by college entrance exam scores, to be the strongest indicator of success on the CPA exam, with review course preparation also being relatively important (Grant et al., 2002). Additional education had only a marginal impact on exam success, with the effect of non-accounting education being somewhat stronger than that of accounting education. Grant et al. (2002) concluded that two thirds of a CPA review course would provide the same exam success benefit as 22 extra college credit hours.

Based on the body of research related to success on the CPA examination, we expected the following factors to be associated with successful performance on the CFP® Certification Examination:

- Overall grade point average,
- Grade point average in the registered program coursework,
- Having an advanced degree,
- Taking a CFP® certification review course,
- Taking the exam soon after graduation from the registered program,
- Studying more for the CFP® certification examination, and
- Studying more hours in the registered program.

Based on previous research concerning success on the CPA examination, we would also expect that college entrance exam scores, such as SAT or ACT scores, would be associated with success on the CFP® Certification Examination, but these variables were not collected before the July 2000 exam administration. The relationship of college entrance exam scores to success on the CFP® Certification Examination will be evaluated in future work.

3. Data and methods

3.1. Data collection and characteristics

Since the November 1999 administration of the CFP® Certification Examination, CFP Board has surveyed examinees to identify factors related to successful performance on the exam. The survey document has been sent shortly after the exam with a response required

before the announcement of exam results. The questionnaire requests information on the background, experience, academic qualifications and performance, and credentials of the candidates. Additional questions probe the candidates' methods and amounts of preparation for the exam. Both the raw exam score and whether or not the candidate passed the exam were also recorded for each respondent to the survey. Some information used in the analyses was obtained directly from the application form of the examinee. The name and other identifying information for each candidate were removed from the data to ensure candidate confidentiality.

The analyses reported here relate to the examinations administered in November of 1999 and in March and July of 2000. In these three examination administrations a total of 4,829 people took the CFP® Certification Examination, and of those 2,499 (52%) responded to the questionnaire. The response rate was exceptionally high for a mail-back questionnaire. The pass rate for the respondents for the 3 administrations combined was 61.7% compared to 50.0% for the non-respondents. This difference could not be due to chance. It is difficult to know in what ways the non-respondents may be different from the respondents to the questionnaire.

A copy of the questionnaire used for the July 2000 and subsequent administrations of the examination is attached as Appendix A . The questionnaire used in the November 1999 and March 2000 exam administrations differs slightly from the July 2000 questionnaire.

Data were provided to the authors by the Certified Financial Planner Board of Standards, Inc. in the form of Microsoft Excel files. All analyses were carried out in the SAS V8.1 statistical software package. Brief descriptions of all the variables included in the analyses are given in Table 1.

3.2. Statistical methodology

We began our analyses by tabulating the number of examinees in each category of every variable. Because some categories of some variables had very few respondents, we combined some categories on those variables. For example, the first question on the questionnaire asks for the examinee's primary business activity, and "Banking" and "Banking/Trust" are two distinct alternatives. We combined these two answers into a single category which we labeled "Banking." Next, we obtained cross-tabulations of all the pairs of variables, excluding the exam scores and Pass/Fail test outcomes. This permits us to examine some of the relationships among the variables without regard to performance on the CFP® Certification Examination.

We performed univariate and multivariate statistical analyses on both the raw exam scores and the Pass/Fail outcomes. First, we cross-tabulated each variable on the questionnaire individually with the Pass/Fail results, and carried out a χ^2-test for independence (Agresti, 1996). This procedure addresses the issue of which variables are associated with passing or failing the exam without reference to any other recorded variables.

Next, we fit a logistic regression model (Frees, 1995; Agresti, 1996) with the Pass/Fail outcome as the response variable and all other variables as explanatory variables. The logistic regression model attempts to evaluate the relationship between the individual explanatory

Table 1
Explanatory variables used in statistical analyses

Variable	Description
RegInst	Registered institution attended
PBusAct	Primary business activity
Hdegree	Highest degree earned
Major	Undergraduate major (if applicable)
UGradGPA	Undergraduate GPA (if applicable)
Years Wkd	Number of years worked in financial services industry
CFA	Holder of the CFA designation (yes/no)
CPA	Examinee is a CPA (yes/no)
Attorney	Examinee is an attorney (yes/no)
InvAdv	Examinee is an Investment Advisor/Investment Advisor Rep (yes/no)
ChFC	Holder of the ChFC designation (yes/no)
EA	Examinee is an Enrolled Agent (yes/no)
RealEstate	Holder of a Real Estate license (yes/no)
InsPandC	Holder of the Property/Casualty Insurance designation (yes/no)
CLU	Holder of the CLU designation (yes/no)
PFS	Holder of the PFS designation (yes/no)
Securities	Holder of a Securities Sales license (yes/no)
InsLife	Holder of a Life/Health Insurance designation (yes/no)
PFPprac	Examinee is a Personal Financial Planning practitioner (yes/no)
Incentive	Employer offers a financial *incentive* to get CFP® designation (yes/no)
IncRaise	Employer offers a *raise* as an incentive to get CFP® designation (yes/no)
IncBonus	Employer offers a *bonus* as an incentive to get CFP® designation (yes/no)
IncProm	Employer offers a *promotion* as an incentive to get CFP® designation (y/n)
IncOther	Employer offers *other* financial incentive to get CFP® designation (yes/no)
WhyCFP	Primary reason for pursuing CFP® designation
RegLength	Time taken to complete registered educational program
RegHours	Number of hours studying in registered educational program
TimetoExam	Time between end of registered program & applying to take CFP® exam
RegGPA	GPA in registered educational program
TakeCap	Did examinee take a capstone course in registered program? (yes/no)
CapReq	Was the capstone course required or optional?
RegChoice	What was the primary factor in choosing a registered educational program?
PStudyAid	What was primary study aid used to prepare for exam?
PdelivMeth	What was primary delivery method used to prepare for exam?
WksReview	How many weeks of review before taking CFP® exam?
HrsperWk	How many hours per week of study for CFP® exam?

variables and whether or not a person passes the exam while controlling for other variables that might also be related to whether or not a person passes the exam.

Letting π denote the probability of passing the exam, the logistic regression model takes the form

$$\begin{aligned} logit(\pi) &= log(\pi/(1-\pi)) \\ &= \beta_0 + \beta_1 \text{ Variable}_1 + \beta_2 \text{ Variable}_2 + \ldots + \beta p \text{ Variable}_p. \end{aligned} \quad (1)$$

All the explanatory variables considered in our analyses were categorical. In this case, for each categorical variable, a set of "dummy" variables—variables taking on only the values zero and one—are constructed automatically by the computer software, one dummy variable

for *each* level of *each* categorical variable (Agresti, 1996:123), and the coefficient for each dummy variable estimated. Hypotheses concerning the explanatory variables were evaluated using likelihood ratio tests (Agresti, 1996:124). In particular, we tested each variable for inclusion in the model, and we computed a p-value for each variable.

The model described by Eq. (1) is sometimes known as the "log-odds" model because the quantity $\pi/(1-\pi)$ is known as the odds of an event that has probability π of occurring (Agresti, 1996:22). Odds are an alternative to probabilities for characterizing uncertainty and relative likelihood. Whereas probabilities are bounded by 0 and 1, odds lie between 0 and ∞. Odds of 1 indicate that an event is as likely to occur as not, such as getting "heads" on a fair coin toss. Odds of, say, 3 indicate an event that is 3 times as likely to occur as not.

Given two events, A, and B, with probabilities π_A and π_B, the odds ratio of event A to event B is defined to be

$$OR_{A,B} = \pi_A/(1-\pi_A) \div \pi_B/(1-\pi_B). \tag{2}$$

An odds ratio of 1 indicates two equally likely events. Odds ratios greater than 1 occur when event A is more likely than event B. If an odds ratio is, for example, 4, we might say that event A is 4 times as likely as event B (Agresti, 1996:27). Odds ratios and the relative likelihood interpretation of odds ratios are used throughout the results section of this paper.

Variables that had high p-values, and hence seemed to be unrelated to whether or not candidates passed the exam, were systematically removed from the model one at a time. At each step, the variable with the least statistically significant p-value was removed, and the model refit without that variable, until all variables remaining in the model had p-values less than some predetermined level. The level we used throughout our analyses was 0.05. This technique is called backward elimination (Hamilton, 1999; Agresti, 1996:127–128).

We carried out analyses of the raw exam scores using analogous techniques. First, we did simple, one-way analyses of variance (ANOVA) of the exam scores for each explanatory variable individually (Weiers, 1998:429–439). Next, we fit a general linear regression model (Hamilton, 1999) with the exam score as the response variable and all the other questions as explanatory variables. We systematically removed explanatory variables that were not closely associated with the exam scores by backward elimination (Hamilton, 1999). The general linear model methodology addresses the question of which variables are related to the final exam scores in the presence of other variables that may or may not be related to the exam scores.

In this report, the p-values and interpretations of variable coefficients are all based on the logistic regression model fit to the combined data from all 3 sittings of the exam. The groups of variables we identified as being significantly associated with success (or failure) on the exam by the other methods were very similar. Logistic regression and the general linear model were preferred as analysis techniques over the univariate, cross-tabulation and one-way ANOVA methods because they evaluate the effect of each variable in the model while controlling for all other variables in the model.

Some respondents elected not to answer some of the questions. Typically, the unanswered questions varied from survey respondent to survey respondent. If we had eliminated all respondents with one or more unanswered questions (the typical strategy for dealing with

missing values in regression and logistic regression) it would have resulted in about two-thirds of the respondents being eliminated from the data set. Consequently, when a respondent failed to answer a question, we used a missing value code, and we used that missing value code throughout the analyses, resulting in no observations being lost because of missing values. For example, on the question asking how many hours per week the candidate spent in preparation for the CFP® Certification Examination, 90 people said they spent fewer than 5 hours per week, 478 people said they spent between 5 and 10 hours, 640 people said they spent between 11 and 15 hours, 639 people said they spent between 16 and 20 hours, 629 people said they spent more than 20 hours, and 23 people did not respond to the question and were coded as NA. These people, with their NA code, were included in all subsequent analyses, including the multiple and logistic regression analyses.

4. Results

4.1. Respondent characteristics

There were 341 CPAs (13.65% of the sample) who responded to the survey in the 3 sittings that are the subject of this paper. Enrolled agents constituted only 1.84% (46 out of 2499) of the survey respondents. In contrast, more than half (1459 out of 2499 = 58.38%) of the survey respondents held a securities license. (These three credentials are mentioned because exam takers with these credentials tended to pass the CFP® Certification Examination at a higher rate than persons without them.)

Table 2 summarizes some other characteristics of the survey respondents. Of the 16 primary business activities listed in the questionnaire, the responses were combined into just six categories because the sample sizes for some business activities were very small. The categories, and the counts and percentages of survey respondents in each category are listed in Table 2. Note that people who say their primary business activity is personal financial planning make up the largest group of test takers.

Table 2 also contains a summary of number of years spent working in the financial services industry for test takers who responded to the survey. Over 85% of the survey respondents had been working in the financial services industry for more than 3 years; over 37% had been working in the industry for more than 10 years.

The highest earned degree for most survey respondents was a baccalaureate degree. Over 85% of the survey respondents listed a baccalaureate or masters degree as their highest academic qualification, with relatively few people at either end of the education spectrum.

Question 10 of the survey asks, *"Which one factor had the greatest influence on your decision to pursue the CFP® designation?"* Answers to this question are summarized in Table 2. Slightly more than 30% of survey respondents said it was to better serve their clients, and another 30% said it was for reasons of credibility. A surprisingly large number, 437, 17.49% of the respondents, indicated that the main reason for pursuing CFP® certification was a matter of personal achievement.

Table 2
Classification of respondents by Primary Business Activity, Years Worked in Financial Services Industry, Highest Degree, Reason for Pursuing CFP® Designation, and Registered Institution

Variable	Codes	Number of persons	Percentage of persons
Primary business activity	Accounting	259	10.36
	Banking	207	8.28
	Insurance	273	10.92
	Personal Financial Planning	847	33.89
	Securities	360	14.41
	Other	357	14.29
	NA	196	7.84
Years worked in financial services industry	Less than 1	73	2.92
	From 1 to 3	293	11.72
	From 4 to 6	656	26.25
	From 7 to 10	452	18.09
	More than 10	934	37.37
	Not working	21	0.84
	Not working in industry	51	2.04
	NA	19	0.76
Highest degree	No degree	170	6.80
	Associate degree	67	2.68
	Bachelors	1416	56.66
	Masters	728	29.13
	J.D.	68	2.72
	Ph.D.	42	1.68
	NA	8	0.32
Reason for pursuing CFP® designation	Better serve clients	783	31.33
	Career change	225	9.00
	Credibility	748	29.93
	Encouraged by employer	89	3.56
	Marketing advantage	162	6.48
	Peer recognition	22	0.88
	Personal achievement	437	17.49
	NA	33	1.32
Registered institution	Challenge Status	601	24.05
	College for Financial Planning	759	30.37
	The American College	463	18.53
	Other Academic Institutions	675	27.01
	NA	1	0.04

A *registered institution* is an institution with one or more educational programs registered with CFP Board. This is the educational institution at which the examinee studied the financial planning curriculum. Because very few institutions have enough graduates sitting for the exam to be considered as separate institutions in the analyses, most of the institutions were combined into a single "Other" category.

Among the 2,499 respondents to the survey, 601 (24.05%) fulfilled the education requirements by the challenge route, 759 (30.37%) attended the College for Financial Planning, 463 (18.53%) attended The American College, and a further 675 (27.01%) took courses and participated in programs at other academic registered institutions.

Table 3
Cross-tabulation of highest degree earned with length of review course in weeks

Length of review course in weeks	Highest degree earned					
	No degree	Associate	Bachelors	Masters	J.D.	Ph.D.
0–4 weeks	24	10	161	90	16	5
5–8 weeks	53	14	436	212	20	10
9–12 weeks	43	18	421	221	18	13
13–16 weeks	22	10	200	113	5	9
17–20 weeks	9	1	77	32	1	2
21+ weeks	15	14	109	57	7	3
Total	166	67	1404	725	67	42

4.2. *Relationships among explanatory variables*

Table 3 contains a cross-tabulation of highest degree earned (HDegree) and number of weeks of review (WksReview) before taking CFP® Certification Examination. Persons with an associate degree are more likely to take longer review courses: 14/67 = 20.9% of persons with associate degrees take a review course of more than 20 weeks in length, whereas only 7.9% = 176/2238 of persons with a bachelors degree or higher take a review course of more than 20 weeks. Interestingly, the people who do not have any degree are more like those persons who have a baccalaureate degree, or higher degree, than persons with an associate degree: only 15/166 = 9.0% of persons with no degree take a review course of more than 20 weeks in length.

Table 4 is a cross-tabulation of registered institution (with most institutions combined in a single "Other" classification) with number of weeks of review. There is a slight trend for challenge exemptions to take longer review courses: 107/598 = 17.9% of challenge exemption persons take a review course of longer than 16 weeks, whereas 222/1879 = 11.8% of persons attending educational programs took a review course of more than 16 weeks.

Both the preceding paragraphs suggest that some examinees may be substituting time in a review course for education. The cross-tabulation of the number of hours in a registered program with the number of weeks in a review course suggests exactly the opposite. There

Table 4
Cross-tabulation of registered institution with length of review course in weeks

Length of review Course in weeks	Registered institution			
	Challenge Exemption	College for Financial Planning	The American College	All Other Institutions
0–4 weeks	98	71	73	66
5–8 weeks	163	230	146	208
9–12 weeks	145	245	132	212
13–16 weeks	85	118	59	97
17–20 weeks	45	29	20	30
21+ weeks	62	58	29	56
Total	598	751	459	669

Table 5
Cross-tabulation of length of registered program in hours with length of review course in weeks

Length of review course in weeks	Length of registered program in hours				
	0–200	200–400	400–600	600–800	800+
0–4 weeks	51	70	42	13	19
5–8 weeks	44	178	160	95	77
9–12 weeks	20	146	143	137	104
13–16 weeks	4	62	81	56	64
17–20 weeks	5	16	18	15	22
21+ weeks	5	21	30	28	53
Total	124	493	474	344	339

is a strong positive association between the two variables (see Table 5). For example, 51/128 = 39.8% of persons who spent less than 200 hours in a registered program took a review course of less than 5 weeks, whereas only 13/344 = 3.8% of persons whose registered program was 600–800 hours in length took a review course of less than 5 weeks, and only 19/339 = 5.6% of persons who took a registered program of more than 800 hours, took a review course of less than 5 weeks. Also, among persons who took a registered program of less than 200 hours, the modal category for review course length was 0–4 weeks; among people who took registered programs of 200–400 or 400–600 hours, 5–8 weeks was the modal category for review course length; and among people who took a registered program of 600–800 or more hours, the modal category was 9–12 weeks for a review program.

Another question of interest is, "What kind of people are being offered (financial) incentives to pursue CFP® Certification?" Table 6 contains a cross-tabulation of primary business activity and the 5 incentive variables. Accountants do not get offered incentives to pursue CFP® Certification very often: only 15/259 = 5.8% of persons who listed their primary business activity as accounting were offered incentives. In contrast, 230/847 = 27.2% of persons who listed personal financial planning as their primary business activity were offered incentives. The figure for persons in insurance was nearly as high—65/273 = 23.8%; for securities 63/360 = 17.5%; and for banking 32/207 = 15.5%. Approximately half of the persons receiving incentives classified the incentive as something other than a raise, bonus or promotion. It is not clear what these incentives are.

Table 6
Cross-tabulation of employer incentives with primary business activity

Primary business activity	Form of incentive					Total
	Any	Raise	Bonus	Promotion	Other	
Accounting	15	13	2	0	4	259
Banking	32	7	7	6	4	207
Insurance	65	1	12	1	33	273
Personal Financial Planning	230	35	39	25	94	847
Securities	63	5	4	7	26	360
Other	55	4	12	7	17	357
Total	460	65	76	46	178	2303

Table 7
Cross-tabulation of time between end of review course and taking exam with primary business activity

Primary business activity	Time between review course and exam				Total
	0–6 Months	7–11 Months	1–2 Years	More than 2 Years	
Accounting	100	22	18	5	145
Banking	148	27	10	5	190
Insurance	95	16	19	5	135
Personal Financial Planning	500	76	35	12	623
Securities	262	31	16	4	313
Other	212	31	15	12	270
Total	1317	203	113	43	1676

There were many non-respondents to the question asking the time between completing a review course and taking the CFP® Certification Examination. Among the respondents, nearly 80% took the CFP® Certification Examination within 6 months of completing a review course (Table 7). There were differences among examinees from different professions. For example, 45/145 = 31% of accountants and 40/135 = 29.6% of persons in insurance took the exam more than 6 months after completing a review course, while only 51/313 = 16.3% of persons who listed securities as their primary business activity took the exam more than 6 months after completing a review course. Because of the small sample sizes, it is hard to draw conclusions about the people who wait a year or more before taking the CFP® Certification Examination.

There were some differences in the time between finishing a review course and taking the CFP® Certification Examination according to primary delivery method (Table 8). Among those who listed Live Presentation/Classroom as their primary delivery method, 70/441 = 16.0% took the exam more than 6 months after completing the review course. For persons who listed Self Study/Computer as their primary delivery method, 40/136 = 29.4%% took the exam after more than 6 months. Among those who listed Self Study/Text as their primary delivery method, 245/1132 = 21.6% waited more than 6 months before taking the CFP® Certification Examination.

4.3. Results of the logistic regression analysis

The primary purpose of this paper is to identify factors relating to successful performance on the CFP® Certification Examination. Table 9 contains p-values for all the explanatory

Table 8
Cross-tabulation of time between end of review course and taking exam with primary delivery method

Primary delivery method	Time between review course and exam				Total
	0–6 Months	7–11 Months	1–2 Years	More than 2 Years	
Live presentation/classroom	371	41	20	9	441
Self study/computer	96	21	14	5	136
Self study/text	887	138	77	30	1132
Total	1354	200	111	44	1709

Table 9
Variables and p-values for logistic regression models in backward elimination

Step in which variable removed	Variable name	Degrees of freedom	Wald χ^2-statistic value	p-value
1	TakeCap	2	0.0306	0.9848
2	PStudyAid	9	6.1847	0.7213
3	IncProm	1	0.1533	0.6954
4	InsLife	1	0.1834	0.6685
5	InsPandC	1	0.3013	0.5831
6	RegLength	4	2.9046	0.5739
7	CLU	1	0.3903	0.5321
8	WksReview	6	5.1098	0.5298
9	IncRaise	1	0.5520	0.4575
10	IncBonus	1	0.8095	0.3683
11	RealEst	1	0.8408	0.3592
12	ChFC	1	0.8837	0.3472
13	InvAdv	1	1.0643	0.3022
14	CapReq	3	3.8333	0.2800
15	CFA	1	1.1155	0.2909
16	Attorney	1	1.2867	0.2567
17	PFS	1	1.4279	0.2321
18	RegHours	5	7.5528	0.1827
19	YearsWkd	7	10.7224	0.1512
20	Major	8	12.0455	0.1492
21	HrsperWk	5	7.7705	0.1693
	EA	1	3.9416	0.0471
	RegChoice	6	13.3375	0.0380
	WhyCFP	7	14.9254	0.0370
	PFPprac	2	7.5046	0.0235
	Securities	1	7.0007	0.0081
	IncOther	2	9.8045	0.0074
	HDegree	6	18.9877	0.0042
	PDelivMeth	3	14.8721	0.0019
	TimetoExam	4	17.0439	0.0019
	PBusAct	6	21.4733	0.0015
	UGradGPA	6	23.7283	0.0006
	Incentive	1	15.6140	<0.0001
	CPA	1	24.8683	<0.0001
	RegGPA	7	60.5310	<0.0001
	RegInst	3	98.7484	<0.0001

variables considered in the logistic regression model. For clarity, variables are arranged in order of increasing statistical significance (decreasing p-values). For all variables with p-values less than 0.05 (and hence deemed statistically significantly associated with passing or failing the exam), the p-values were obtained from the final fitted model. For variables with p-values greater than 0.05, the p-value was obtained from the model fit immediately before that variable was removed from consideration. These p-values are slightly different from those that are computed when all the variables are included in the logistic regression model.

Among the non-significant variables (the variables that were not included in the final model) there are some surprises. For example, IncBonus, IncRaise, and IncProm, all of which

concern employer incentives to obtain CFP® certification, are non-significant. WksReview and HrsperWk address the amount of effort on the part of the candidate to prepare for the exam, and PStudyAid concerns the primary study aid used to prepare for the exam. None of these variables was statistically significant. Nor do many professional designations, including PFS and CFA, seem to be associated with success on the CFP® Certification Examination. RegLength and RegHours address the length of the registered educational programs; neither of these variables is statistically significantly associated with success or failure on the CFP® Certification Examination.

It is possible that some of the variables that do not appear to be associated with success on the exam when considering the entire, November 1999/March 2000/July 2000 dataset may be important for selected subgroups of the examinee population. Further analyses will be conducted to consider subgroups and other topics of interest. Data from additional exam administrations will also be considered.

Table 10 contains odds ratios for the different categories of all the statistically significant variables that comprised the final logistic regression model. For each variable, the odds ratios are computed relative to one level, a *reference* level, of that variable. The reference level for each variable is denoted in Table 10 by having the odds ratio exactly equal to 1.

Holders of the EA, CPA, and Securities licenses all pass the examination at higher rates than nonholders. Enrolled Agents (EA) are about twice as likely to pass the exam as persons who are not Enrolled agents; CPAs are almost three times as likely to pass the exam as non-CPAs. Holders of Securities licenses are about 1.3 times as likely to pass the exam as persons who do not.

Persons whose primary business activity (PBusAct) is personal financial planning are about 1.5 times as likely to pass the CFP® Certification Examination as persons whose primary business activity is accounting or insurance. This result is consistent with the observation that examinees who say they are personal financial planning practitioners (PFPprac) are about 1.36 times as likely to pass the exam as those who are not personal financial planning practitioners. Examinees working in banking pass the exam at a rate of about 1.75 times the rate of examinees in insurance and accounting. Examinees working in securities are about twice as likely to pass the exam as persons in accounting or banking. The relatively low pass rate for persons in accounting (compared to other business activities) does not contradict the observation in the previous paragraph about CPAs passing the exam at nearly 3 times the rate of non-CPAs because many people whose primary business activity is accounting are not CPAs.

Employer incentives do not seem to lead to higher pass rates—quite the opposite, in fact. This may be because such incentives encourage people to take the CFP® Certification Examination even if they are not well prepared. Persons who said their employer offered an incentive for passing the CFP® Certification Examination or obtaining CFP® certification (Incentive) were only about two-fifths as likely to pass the exam as those who were offered no such incentive. None of the variables IncBonus, IncProm, or IncRaise (indicating financial incentives in the form of a bonus, promotion, or raise, respectively) were significant or included in the final logistic regression model. The variable IncOther *is* statistically significant, but as with Incentive, persons who respond "Yes" to this question passed the exam at a lower rate than those who responded "No." The questionnaire does not ask for

Table 10
Odds ratios for levels of significant variables in logistic regression model

Variable name	Variable level	Odds ratio
EA	No	1.000
	Yes	2.160
RegChoice	Price	1.000
	Reputation of program	1.152
	Subsidized by employer	1.313
	Recommended by colleague	1.391
	Length of program	1.860
	Delivery method	1.832
	NA	1.599
WhyCFP	Personal achievement	1.000
	Better serve clients	1.249
	Career change	1.191
	Credibility	1.578
	Encouraged by employer	1.253
	Marketing advantage	1.736
	Peer recognition	1.909
	NA	1.730
PFPprac	No	1.000
	Yes	1.364
	NA	1.264
Securities	No	1.000
	Yes	1.331
IncOther	No	1.000
	Yes	0.635
	NA	0.594
HDegree	Bachelors	1.000
	No degree	0.499
	Associate	0.394
	Masters	1.013
	J.D.	1.672
	Doctorate	1.389
	NA	0.224
PDelivMeth	Self-study/computer	1.000
	Self-study/text	1.855
	Live Presentation	1.693
	NA	1.742
TimetoExam	More than 2 years	1.000
	From 1–2 years	0.948
	From 6 months to 1 year.	1.105
	6 months or less	1.750
PBusAct	Accounting	1.000
	Banking	1.757
	Insurance	1.060
	Personal financial planning	1.511
	Securities	2.011
	Other	1.541
	NA	1.007

(continued on next page)

Table 10 *(continued)*

Variable name	Variable level	Odds ratio
UGradGPA	2.00 to 2.49	1.000
	2.50 to 2.99	0.839
	3.00 to 3.49	1.071
	3.50 to 4.00	1.625
	No Degree	1.332
	Don't remember	1.247
	NA	1.602
Incentive	No	1.000
	Yes	0.400
CPA	No	1.000
	Yes	2.858
RegGPA	2.00 to 2.49	1.000
	2.50 to 2.99	1.111
	3.00 to 3.49	2.182
	3.50 to 4.00	4.322
	Less than 2.00	2.062
	Don't remember	0.648
	Pass/fail	1.583
	NA	1.914

what the other incentives might be, but we speculate that they might include such things as reimbursement for fees or expenses.

As hypothesized, academic qualifications and performance before taking the CFP® Certification Examination do seem to be associated with success or failure on the exam. Persons with no degree or just an associate degree were less than half as likely to pass the exam as persons with a baccalaureate degree or higher (HDegree). Persons with a master's degree passed the exam at about the same rate as persons with a bachelor's degree. Persons with a doctorate or a J.D. degree were 1.39 and 1.67 times, respectively, as likely to pass the exam as persons with a bachelor's degree.

In general, persons with higher GPAs in their undergraduate degree programs (UGradGPA), and in the registered programs they took (RegGPA), passed the CFP® Certification Examination at higher rates than those persons with lower GPAs. Persons with undergraduate GPAs in the range 3.5 to 4.0 were about 1.6 times as likely to pass the CFP® Certification Examination as those with GPAs less than 3.5. Persons with GPAs of between 3.00 and 3.49 were about twice as likely to pass the exam as persons with GPAs between 2.00 and 2.99. Persons with GPAs in the range 3.5 to 4.0 in their registered program were more than 4 times as likely to pass the exam as those with GPAs between 2.00 and 2.99, and about twice as likely to pass the exam as persons with GPAs in the range 3.00 to 3.49. Interestingly, persons with GPAs less than 2.00 in the registered program were about twice as likely to pass the exam as persons with GPAs in the range 2.00 to 2.99, but there were only 5 such people, so the result is not meaningful.

The time between completing the registered program and taking the CFP® Certification Examination (TimetoExam) is also statistically significant as hypothesized. Persons taking the exam within 6 months of having completed the registered program were about 1.7 times as likely to pass as persons who waited for a longer period of time. This may be because the

material was fresher in the minds of the candidates who took the exam within 6 months of completing the program, but there are other possibilities, such as better prepared candidates taking the exam earlier than less well-prepared candidates.

With regard to motivation to obtain CFP® certification (WhyCFP), persons who answered personal achievement had the lowest pass rates. Examinees who answered to better serve clients or were encouraged by employer were about 1.25 times as likely to pass the exam as the personal achievement group. Persons who answered credibility were more than 1.5 times as likely to pass the exam as the personal achievement group; persons who listed marketing advantage were about 1.75 times as likely to pass the exam; and persons who listed peer recognition as their primary reason for pursuing CFP® Certification were almost twice as likely to pass the exam as persons who listed personal achievement as their primary reason.

Examinees who chose the registered program they enrolled in on the basis of price (RegChoice) did not fare as well on the exam as persons who chose any of the other options for this variable. Persons who selected a registered program on the basis of the program's length or delivery method were about 1.8 times as likely to pass the CFP® Certification Examination as those who chose the program on the basis of price. The NA group for this variable includes persons who chose the challenge exemption rather than completing a registered educational program. Persons in the challenge exemption group passed the CFP® Certification Examination at a higher rate than non-challenge exemption persons.

Finally, persons who prepared for the CFP® Certification Examination by attending live lectures and presentations, or through self-study using a text book, were about 1.7 times as likely to pass the exam as persons who prepared for the exam using computer self-study materials (PDelivMeth). Study materials, particularly computer-based study materials, are changing rapidly, and it will be interesting to see if the effects of the levels of this variable change over time.

The variable RegInst is the result of the recoding of the registered educational institutions into just 4 categories. RegInst was highly statistically significant in all analyses, including the logistic regression analysis, but it is deliberately omitted from Table 10 because most registered institutions were grouped into one "Other" category.

4.4. Comparison of results with results of CPA exam studies

In our study and several of the cited studies related to the CPA exam, both grade point average and advanced degrees are positively associated with exam success. The authors of one CPA exam study determine that work experience is *not* associated with exam success. In our study, we find that years worked is *not* associated with exam success but being a personal financial planning practitioner *is* associated with exam success. It may be that work experience in the specific area of personal financial planning *is* positively associated with exam success. In several of the CPA exam studies, the authors determine that taking a review course is related to exam success. Since almost all of the people in our study took a review course, it was not possible to determine the relationship between taking a review course and performance on the exam.

5. Concluding comments

As part of an ongoing research program, we analyzed data from examinees from 3 administrations of the CFP® Certification Examination. We identified some variables that are associated with success on the exam. As we hypothesized, educational achievement and performance, and taking the CFP® Certification Examination soon after graduation from the registered program are positively associated with success on the exam. The primary business activity of the examinees and some professional designations or licenses are also associated with success on the examination. Other variables that we thought might be associated with success on the exam did not seem to be. For example, the amount of preparation for the exam by the examinees (WksReview and HrsperWk), and the primary study-aid providers (PStudyAid) all seem to be unrelated to success or failure on the exam. Taking a CFP® certification review course was not predictive of success on the CFP® Certification Examination because nearly all the candidates reported that they had taken some kind of a review course. In the analyses reported here, we made no attempt to find out which variables might be associated with success on the CFP® Certification Examination for selected subsets of the examinee population (such as CPAs, or persons working in insurance or personal financial planning). We are currently conducting such analyses and will soon report our results.

We are also currently conducting analyses on additional administrations of the CFP® Certification Examination. Given the evolving nature of items such as study aids and, in particular, computer-based study materials, it will be interesting to see if these variables become more closely associated with success on the exam over time.

The survey instrument is slowly evolving over time, with questions being added to address other issues. In particular, starting from the July 2000 administration of the exam, the questionnaire asks for ACT and SAT scores, and if the examinee is taking the exam for the first time or retaking the exam. Preliminary analyses (based only on the July 2000 data) suggest that whether or not the examinee is retaking the exam is strongly associated with performance on the exam.

The public is served by having qualified financial planners to assist them with financial planning. Methods of improving financial planning education and preparation for the CFP® Certification Examination should help to more effectively prepare qualified financial planners. Further analysis of existing data and analysis of data yet to be obtained may help to both train and test the competence of financial planners. We hope that this iterative process of discovery may provide useful guidance for financial planning students, financial planners, financial planning educators and Certified Financial Planner Board of Standards.

Acknowledgments

We acknowledge Greg Opitz, Colleen McArdell, and Kathryn Ioannides, CFP®, of CFP Board for their considerable assistance and comments. We also thank Conrad Ciccotello and two anonymous referees for numerous helpful comments that led to substantial improvements in this manuscript. The authors worked in cooperation with Certified Financial Planner Board of Standards, Inc.

Appendix A: Questionnaire (July 2000)

Please mark your answers to the following questions on the enclosed answer sheet and fax the answer sheet to 303-839-0762, or mail to CFP Board, 1700 Broadway, Ste 2100, Denver, CO 80290-2101. For best results, please darken the circles completely and use blue or black ink.

1. What is your primary business activity (darken only one)?
2. What is the highest educational degree you hold?
3. If you have an undergraduate degree, what was your major?
4. If you have an undergraduate degree, what was your grade point average?
5. What was your SAT and/or ACT score?
6. How many years have you worked in the financial services industry?
7. What professional designations and/or licenses do you currently hold (darken all that apply)?
8. Are you a personal financial practitioner*?
   **Defined as a person who is capable and qualified to offer objective, integrated, and comprehensive financial advice to or for the benefit of clients to help them achieve their financial objectives and who engages in financial planning using the financial planning process in working with clients.*
9. Does your employer provide a financial incentive for passing the CFP Certification Examination and/or obtaining the CFP designation?
10. Which one factor had the greatest influence on your decision to pursue the CFP designation?
11. How important do you perceive the CFP license to be in your career?
12. What percentage of the questions do you think you answered correctly on the CFP Certification Examination?
13. How long did you take to complete the CFP Board Registered Educational Program?
14. Approximately how many total hours did you spend studying in the Registered Educational Program (include classroom time/personal study/study groups)?
15. How much time passed between your completion of the Registered Program and applying for the CFP Certification Examination?
16. Was the Registered Program you completed a degree program or certificate program?
17. What was your approximate grade point average upon completion of the Registered Program?
18. Did you take a capstone course as part of the curriculum (exclude exam review course)? If yes, was it required or optional?
19. What was the primary factor that influenced your choice in CFP Board Registered Programs?

IF YOU DID NOT USE EXAM PREPARATORY MATERIALS FOR THIS CFP CERTIFICATION EXAMINATION PLEASE SKIP TO QUESTION 23.

20. How many different exam preparatory providers did you use for this exam?
21. Which of the following exam preparatory providers did you use as your primary study aid for this exam?
22. What delivery method did you use as your primary study aid for this exam?
23. Approximately how many weeks prior to the exam itself did you begin reviewing for the CFP Certification Examination
    (exclude time spent completing the educational requirement)?
24. Approximately how many hours on average per week did you spend studying for the CFP Certification Examination
    (exclude time spent completing the educational requirement)?

Appendix A: Questionnaire, Page 2 (July 2000)

PLEASE FAX THIS PAGE TO 303-839-0762 NO COVER PAGE PLEASE
Or mail to CFP Board 1700 Broadway Ste 2100 Denver CO 80290-2101

Darken circles completely using blue or black ink like this: O not like this O O

1. O Accounting O Education O Insurance O Retirement Planning
   O Banking O Estate Planning O Law O Securities
   O Banking/Trust O Government O Personal Financial Planning O Tax Preparation
   O Corp/Admin. O Human Resources O Real Estate O Other
2. O No Degree O Associate O Bachelors O Masters O JD O Doctorate
3. O Accounting O Business O Economics O Consumer Science/Human Ecology/Family Finance
   O Finance O Other O No Degree
4. O <2.0 O 2.0-2.49 O 2.5-2.99 O 3.0-3.49 O 3.5-4.0 O Don't Remember O No Degree
5. SAT O 0-800 O 801-950 O 951-1050 O 1051-1150 O 1151-1250 O 1251-1600 O Don't Remember O N/A (combined score)

   ACT O 0-15 O 16-20 O 21-23 O 24-26 O 27-30 O 31-36 O Don't Remember O N/A
6. O <1 year O 1-3 years O 4-6 years O 7-10 years O >10 years O Not working in industry
7. O CFA O CPA O Attorney O Investment Advisor Rep/Investment Advisor
   O ChFC O EA O Real Estate O Insurance (Property Casualty)
   O CLU O PFS O Securities Sales O Insurance (Life Health)
8. O No O Yes
9. O No O Yes, and the incentive is O Raise O Bonus O Promotion O Other
10. **Select Only One** O Better Serve Clients O Career Change O Personal Achievement O Credibility
    O Marketing Advantage O Peer Recognition O Encouragement from my Employer
11. O Not Important O Somewhat Important O Important O Very Important
12. O <40% O 40-50% O 51-60% O 61-70% O 71-80% O 81-90% O >90%

If you did not complete a CFP Board Registered Program please skip to question 20.

13. O <1year O 1-2 years O 3-4 years O >4 years
14. O <200 hours O 200-400 hours O 401-600 hours O 601-800 hours O >800 hours
15. O 0-6 months O 7-11 months O 1-2 years O >2 years
16. O Certificate O Undergraduate Certificate O Undergraduate BS/BA O Masters O Ph.D.
17. O <2.0 O 2.0-2.49 O 2.5-2.99 O 3.0-3.49 O 3.5-4.0 O Don't Remember O Pass/Fail only
18. O No O Yes, and it was: O Required O Optional
19. **Select Only One** O price O location O delivery method (self-study/classroom/on-line)
    O reputation program/school O length of program O program was subsidized by employer
    O recommended by colleague

If you did not use exam preparatory materials for this exam please skip to question 23.

20. O 1 O 2 O 3 O 4 O >4
21. **Select Only One** O Anne Arundel CC O Dalton Publications O Insurance Achievement O Rutgers Univ. O NYU
    O College for Fin. Plan. O EXAMCO (BISYS) O Jack Keir O PTS O Other
22. O Self-study/text O Self-study/computer O Live presentation/classroom
23. O <5 weeks O 5-8 weeks O 9-12 weeks O 13-16 weeks O 17-20 weeks O >20 weeks
24. O <5 hours O 5-10 hours O 11-15 hours O 16-20 hours O >20 hours

References

Agresti, A. (1996). *Introduction to Categorical Data Analysis.* John Wiley and Sons, Inc, New York.

Deppe, L. & Smith, J. (1992). The debate over post-baccalaureate education: One university's experience. *Issues in Accounting Education*, 7:1–18.

Dunn, W. & Hall, T. (1984). An empirical analysis of the relationships between C.P.A. examination candidate attributes and candidate performance. *The Accounting Review*, 59:674–689.

Frees, E. R. (1995). *Data Analysis Using Regression Models: The Business Perspective.* Englewood Cliffs, NJ: Prentice Hall.

Grant, C. T., Ciccotello, C., & Dickie, M. (2002). Barriers to professional entry: How effective is the 150-hour rule? *Journal of Accounting and Public Policy*, 21:71–93.

Hamilton, L. (1999). *Regression with Graphics: A Second Course in Applied Statistics.* Pacific Grove, CA: Brooks/Cole Publishing Company.

Leathers, P. (1972). Relationship of test scores to CPA examination performance. *Journal of Accountancy*, September, 101–102.

Leathers, P., Sullivan, J., & Bernstein, J. (1984). The CPA examination—profile of the successful candidate. *Advances in Accounting*, 1:105–125.

Reilly, F. K., & Stettler, H. F. (1972). Factors influencing success on the CFP examination. *The Journal of Accounting Research*, Autumn, 308–321.

Sanders, H. P. (1972). Factors in achieving success on the CPA examination. *The Journal of Accountancy*, December, 85–88.

Titard, P. L. & Russell, K. A. (1989) Factors affecting C. P.A. examination success. *Accounting Horizons*, 3:53–59, 1989.

Weiers, R. M. (1998). *Introduction to Business Statistics*, 3rd edition. Pacific Grove, CA: Brooks/Cole Publishing Company.