

# **FACTORS INFLUENCING THE LIKELIHOOD OF DEVELOPING A MASTER'S DEGREE IN ACCOUNTING AT U. S. AACSB BUSINESS SCHOOLS**

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## **ABSTRACT**

*Factors influencing the likelihood of adding master's degrees in accounting at U.S. AACSB business schools that currently offer only undergraduate degrees were studied. Accounting Program Directors were differentiated into three independent groups (disagree; neutral; agree) based on responses to both internal and external factors that favor development of a master's degree at their institution. Perceptions regarding the likelihood of their institution developing a master's degree in accounting along with other related variables were then observed. Non-parametric statistical findings indicate that certain external factors were, as a whole, more likely to motivate programmatic changes leading to a master's degree in accounting than were factors from within the institution. This study also considers and corroborates reported trends indicating increased popularity of the accounting master's degree as the unofficial standard for entry into practice.*

Keywords: AACSB Business Schools, Accounting Education.

## **INTRODUCTION**

A recurring theme in accounting education has been the call for a master's degree to help prepare individuals entering the practice of public accounting (Whye, 2007). However, prescriptive graduate-level education has been subdued by stakeholders' lack of agreement on a clear educational structure in addition to uncertainty as to who should be included in the professional accounting group. In 1988, the 150-hour requirement was advanced by 83% of American Institute of Certified Public Accountants (AICPA) voting membership but the initiative did not prescribe graduate education. Since that time, legislative changes have implemented some form of 150 h requirement in all states.

While major stakeholders have supported a post-graduate degree for entry into practice, detractors succeeded in rejecting this model, which resulted in a 150 h proposal that could be met at either the undergraduate or graduate level. Table 1 presents many of the notable groups and individuals who made recommendations for graduate study over a 50 year period prior to the AICPA mandate of 150 h for membership (American Accounting Association, 1986; American Institute of Certified Public Accountants, 1959; American Institute of Certified Public Accountants, 1978; Carey, 1937; Commission on Professional Accounting Education, 1983; Commission on Standards, 1956; Gordon & Howell, 1959; Langenderfer, 1987; Miller & Davidson, 1978; Model Public Accountancy Bill, 1984; Moonitz, 1973; Paton, 1971; Pierson, 1959; Roy & MacNeill, 1967; Van Wyhe, 1994).

Although no mandate exists for graduate level education, certain factors, including the 150-hour requirement appear to have prompted many academic programs to implement master's degrees in accounting. Donelan & Reed (2000) reported that while the total number of

accounting degree programs changed little from 1988 to 1998, there was a significant increase in graduate accounting programs. The authors predicted that 80% of universities would ultimately offer master's degrees in accounting to meet the legislative mandate and that schools not offering a graduate degree will face significant competitive challenges from those that do. A study by Donelan and Philipich (2001) surveyed 500 CPA exam candidates in five states with a 150 h requirement and found that 35% had fulfilled the requirement with a Master of Accountancy degree, 22% with the Master of Business Administration (MBA) or other graduate degree, and 43% with additional undergraduate credits. Additionally, candidates who were employed in public accounting were more satisfied if they had enrolled in Masters of Accountancy programs as opposed to other graduate programs.

The 2013 edition of *Trends in the Supply of Accounting Graduates and the Demand for Public Accounting Recruits* (American Institute of Certified Public Accountants, 2013) reported that accounting enrollments, graduates receiving degrees in accounting, and demand for these new graduates were at a high point in 2012. Even more revealing are trends that show a steady ten-year change in enrollment mix with increases of 136% for Masters of Accountancy students, 51% for Bachelor's enrollees, and only 5% for the Masters of Tax and MBA in accounting. During that same 10 year time frame, new accounting graduates increased 115% at the master's degree level and 75% at the bachelor's degree level. More recently, the 2015 report (American Institute of Certified Public Accountants, 2015) corroborated the previous findings noting that an all-time high enrollment in accounting included a 19% increase in master's degrees and a 3% increase in undergraduate degrees. Additionally, the report observed master's degrees at 33% of all accounting degrees awarded in 2014.

Not surprisingly, CPA firm hiring has mirrored the supply shift by moving from 79% bachelor and 21% master's degrees in 2002, to 59% bachelor and 41% master's degrees in 2012. Additionally, of the 16,557 master's graduates hired by CPA firms in 2012, 86% held a master's degree in accounting rather than some other graduate degree (American Institute of Certified Public Accountants, 2013). Thus, while not required by law or the public accounting profession, there appears to be a trend towards educating and hiring at the graduate level with a master's degree in accounting emerging as the unofficial educational norm for entry into practice.

Out of approximately 500 U.S. business schools accredited by the Association to Advance Collegiate Schools of Business International (AACSB), 431 schools have undergraduate accounting programs while 284 offer a master's degree in accounting (Association to Advance Collegiate Schools of Business International, 2013). Therefore, two-thirds of all AACSB accredited business schools that have accounting programs currently offer the master's degree in accounting. Additionally, 154 AACSB accredited schools offer undergraduate only education in accounting. Given the upward enrollment trend for Masters of Accountancy students over the past decade (American Institute of Certified Public Accountants, 2013, 2015), the likelihood that similar graduate programs will increase at AACSB accredited business schools, where not currently offered, appears realistic. However, since more accredited schools currently offer master's degrees in accounting (284) than do not (154), the group not currently offering a graduate degree is likely to be made up of smaller programs with limited resources to support such a degree. Accordingly, this study focused on the 154 schools that currently do not offer a master's degree in accounting and the factors that might influence adoption of the degree. Also of interest is whether there exists among those 154 schools, ample intention to offer the master's degree in accounting a movement with potential to create a tipping point – and a new educational standard for entry into practice.

First, factors that had potential to influence curricular decisions at schools not currently offering a master's degree in accounting were identified via a review of the literature. The identified potential factors were then categorized logically as to whether they were internal or external to the school or program. Next, accounting faculty at the identified 154 institutions were deemed as possessing knowledge and perceptions to assist in identifying factors that might act as predictors favoring the addition of a master's degree in accounting at their own institution.

### **FACTORS POTENTIALLY INFLUENCING ADOPTION OF MASTER'S DEGREES**

Internal factors are defined as influences within the college or university that have persuasive effects on an institution's capacity to provide graduate accounting education. Each of these factors is briefly discussed.

A critical shortage of tenured and tenure-track accounting faculty presents challenges to programs wishing to add graduate level coursework (Baysden, 2013; Geary, Kutcher & Porco, 2010; Charting a National Strategy..., 2012). Therefore, the existence of adequate qualified faculty or an institution's ability to obtain needed faculty for graduate level coursework would likely be an influential factor in the development of graduate accounting programs.

Additionally, the supply of qualified students for graduate study in accounting has been debated (Frecka & Nichols, 2004; Nelson, Ventrzyk, Quirin & Allen, 2002; Nelson, Ventrzyk, Quirin & Kovar, 2008) and generally supports the notion that there exists an adequate supply of willing and able accounting students. However, an adequate supply of qualified students would appear to vary significantly among institutions. Small programs would likely encounter difficulties recruiting students and might lack the means internally to consistently produce a reasonable cohort for graduate study.

Coupled with a supply of qualified graduate students is the obvious factor of adequate internal financial resources to support a graduate program in accounting (Chang, Landis & Yu, 2011; Donelan & Reed, 2000; Geary, Kutcher & Porco, 2010; Salem, 2013). Even at large institutions, master of accountancy programs tend to be small compared to MBA programs and are, therefore, less efficient (Frecka & Nicoles; 2004).

Although the idea of adding value to a student's education via a graduate accounting degree is well documented (Dunn & Hooks, 2009; Nelson, Ventrzyk, Quirin & Allen, 2002) the choice is complicated when considering both costs and benefits of a master's degree for entry into practice (Mastracchio, Lively & Carlson, 2011). The logic of a joint five-year bachelor's and master's degree might seem appropriate for some programs and their students but graduate credits are usually more costly than undergraduate credits making the distinction less evident. In addition to cost differences, there are added burdens such as student acceptance into graduate programs.

External factors are influences originating outside of the educational institution that motivate programmatic changes favoring a master's degree. According to one study (Council of Graduate Schools..., 2010); a transformation from master's programs focusing on arts and sciences to professional programs preparing students for the work world is taking place.

Perhaps the most apparent factor leading to Masters of Accountancy programs is how the 150-hour requirement influenced the structure of many accounting programs leading to combined five-year bachelor's and master's programs (Allen and Woodland, 2006; Donelan & Reed, 2000; Frecka & Reckers, 2010; Grumet, 2009). Donelan & Reed (2000) as well as the AICPA (American Institute of Certified Public Accountants, 2013) note that competition from

these five-year programs is driving the adoption of master's programs at undergraduate only accounting institutions.

Some authors (Mauldin, Braun, Viosca & Chiasson, 2013) claim that a major influence contributing to growth in graduate accounting programs is employer preference and demand for the master's degree as an entry into practice credential. Smith-Barrow (2014) echoes this message of a strong demand for master's prepared accounting graduates.

Lastly, given the trends of increased educational requirements among other professional groups, the overall increase in status that a master's degree would afford accountants upon entering practice might prove to be a prudent investment for a group aspiring to be part of a learned profession (Grumet, 2009; Previts, 2010). The accounting profession could conceivably benefit from public awareness of required graduate education for the practitioner.

### **Purpose of Study and Research Questions**

The purpose of this study was to examine trends in the level of accounting education for entry into practice among AACSB accredited U.S. business schools and to determine whether certain internal and external factors described in the literature are perceived by program directors as contributing to such trends. Examining relationships between factors that favor (IVs) – both internal and external – the likelihood of developing accounting master's degrees; of adding value to students' education; of meeting student educational preferences; and of contributing to the institutional objectives of maintaining competitive programs or seeking separate accounting accreditation (DVs) are considered.

The research questions are as follows:

What is the relationship between internal factors favoring the addition of a master's degree in accounting and the likelihood of developing such a degree, adding value to students' education, meeting student educational preferences and contributing to institutional objectives?

1. What is the relationship between an adequate number of qualified faculty to support a master's degree in accounting and the likelihood of developing such a degree, adding value to students' education, meeting student educational preferences and contributing to institutional objectives?
2. What is the relationship between adequate number of qualified students to support a master's degree in accounting and the likelihood of developing such a degree, adding value to students' education, meeting student educational preferences and contributing to institutional objectives?
3. What is the relationship between adequate financial resources to support a master's degree in accounting and the likelihood of developing such a degree, adding value to students' education, meeting student educational preferences and contributing to institutional objectives?
4. What is the relationship between adding value to students' education, and the likelihood of developing a master's degree in accounting, adding value to students' education, meeting student educational preferences and contributing to institutional objectives?

What is the relationship between external factors favoring the addition of a master's degree in accounting and the likelihood of developing such a degree, adding value to students' education, meeting student educational preferences and contributing to institutional objectives?

1. What is the relationship between the 150 h requirement and the likelihood of developing a master's degree in accounting, adding value to students' education, meeting student educational preferences and contributing to institutional objectives?
2. What is the relationship between employer interest in hiring at the master's degree level and the likelihood of developing a master's degree in accounting, adding value to students' education, meeting student educational preferences and contributing to institutional objectives?
3. What is the relationship between competition from programs already offering the master's degree in accounting and the likelihood of developing such a degree, adding value to students' education, meeting student educational preferences and contributing to institutional objectives?
4. What is the relationship between an increase in status that a master's degree would afford graduates, and the likelihood of developing a master's degree in accounting, adding value to students' education, meeting student educational preferences and contributing to institutional objectives?

## METHODOLOGY

The Association to Advance Collegiate Schools of Business publishes information regarding accredited schools on its website (Association to Advance Collegiate Schools of Business International, 2013). Accredited institutions report the type and level of degrees offered at their institution. Using information from that source, a database was developed as of July 31, 2013 to include U.S. schools accredited in business that offered accounting degrees at the bachelor's and the master's level. Of the 497 accredited U.S. business schools at that date, 431 offered undergraduate accounting programs while 284 schools offered a master's degree in accounting. With only a few exceptions, schools that offer a master's degree in accounting also offer an undergraduate program in accounting such as a major, emphasis or specialization in accounting. Further refinements of the database revealed 154 AACSB accredited U.S. business schools offering undergraduate only (bachelor's) degrees in accounting.

Survey instruments were designed and mailed to Accounting Program Directors – one faculty member – at each of the determined population of 154 AACSB accredited U.S. business schools offering undergraduate only accounting education. A five-point Likert scale including response anchors from Vagias & Wade (2006) was adopted as appropriate for the questionnaire. Recommendations from three accounting educators and two econometricians were considered prior to final adoption and dissemination of the survey forms. After two and four weeks, reminder cards were mailed to faculty not responding. There were a total of 38 responses resulting in an overall response rate of 24.7%. Of the 38 respondents, six responded as already having a master's degree in accounting with two of the six indicating they had recently implemented the degree. The other four did not report how long they had offered the master's degree. The 32 completed surveys were used for data analysis purposes. Response rates are shown in Table 2.

Internal and external factors that favor adding a master's degree in accounting parallel the research questions and represent independent variables as presented in Table 3. On a 5 point scale, participants were asked to select how each of the factors favored the addition of a master's degree.

Independent variables initially measured on a five-point Likert scale resulted in unclear variations because of the low response rate. Therefore, the five response categories of: 1–

strongly disagree; 2–disagree; 3–neutral; 4–agree; 5–strongly agree; were transformed into three independent groups to provide better transparency. After transformation, the three groups for comparison purposes were categorized as 1–disagree; 2–neutral; 3–agree.

Participants were also asked to select how likely each of the items in Table 4 were to occur at their institution. Five response categories of: 1–extremely unlikely; 2–unlikely; 3–neutral; 4–likely; 5–extremely likely; were used. Each item is considered a dependent variable and includes corresponding abbreviations for analysis purposes.

Due to a low response rate, the non-parametric Kruskal-Wallis  $H$  test was chosen to facilitate comparisons of three independent groups. Significant Kruskal-Wallis test results were followed by post-hoc Mann-Whitney  $U$  testing so as to explain group (pairwise) differences.

## RESULTS

Demographic information from respondents is reported in Table 5. Five background questions related to degree offerings, number of accounting graduates, number of faculty and 150-hour degree-type popularity at each institution were included as relevant. There were 32 valid responses for each item under degree offerings and 32 valid responses in each of the other categories containing mutually exclusive items except for degree-type popularity where one missing item resulted in 31 valid responses.

The survey was directed at a population of institutions with like characteristics. Non-responding programs had many likenesses to the responding programs in terms of overall university size, program type, and program size. All of the business schools in the survey are AACSB accredited but only a few schools had separate accounting accreditation. A population of only AACSB accredited schools was a major consideration for the study because of widespread acknowledgement that it represents premier accreditation for business schools. Additionally, none of the 154 institutions had master's degrees in accounting although a fair amount did offer the general MBA degree. For the most part, the accounting programs were a relatively small proportion of a business school that offered many other programs. Although the survey was directed at a population of institutions determined to have undergraduate only accounting education, four of the respondents (12.5%) reported offering the Master of Business Administration (MBA) with an accounting emphasis. Therefore, a limited amount of graduate accounting coursework is assumed to be offered at those institutions although none of the respondents reported this degree as most popular in meeting the 150-hour requirement. Worth noting is that none of the 32 valid respondents reported offering a master's degree in accounting, defined for this study to include a Master of Accountancy (MAcc), Master of Professional Accountancy (MPA) or similar degree.

Descriptive statistics related to participant responses to questions on likelihood variables are presented in Table 6. Responses to the seven variables are measured on a five point Likert scale. Kruskal-Wallis  $H$  tests were conducted to evaluate differences among the three independent faculty groups of respondents categorized as group 1–disagree, group 2–neutral, group 3–agree, on median changes for each of the seven dependent variables in Table 6. An alpha level of 0.05 was selected for all tests.

Significant Kruskal-Wallis tests are indicative of differences in at least two of the groups but do not show which specific groups are significantly different from each other. Significant Kruskal-Wallis variables are presented in Tables 7 through 14 as are results from post-hoc Mann-Whitney  $U$  testing to explain the pairwise or group differences. Post-hoc testing did not elicit significant pairwise comparisons in every case due to Bonferroni correction for increased

risk of Type I error. Therefore, in addition to a more conservative interpretation of the results, the post-hoc pairwise comparisons allow for determination of specific groups that are contributing to significance in each question. For example, when considering the independent variable adequate number of qualified students from Table 8, a pairwise comparison between group 1 disagree and group 2 neutral, is significant on one dependent variable Likeval but is also significant on two other dependent variables, Likeval and Likecom, when examining differences between group 1 disagree and group 3 agree.

Research Question 1a was designed to examine relationships between the internal factor of adequate number of qualified faculty to support a master's degree in accounting and the likelihood of developing a master's degree, adding value to students' education, meeting student educational preferences for the master's degree, contributing to program competitive advantage and seeking separate accounting accreditation from AACSB.

Kruskal-Wallis tests reported no significant differences between groups regarding the internal factor of adequate number of qualified faculty to support a master's degree in accounting and the likelihood of affecting any of the test variables. Correspondingly, post-hoc tests were not conducted as is indicated in Table 7. Considering the suggested shortage of qualified accounting faculty with terminal degrees, this response was somewhat surprising. Apparently, respondents feel that if a faculty shortage exists, there is little association with that shortage and development of master's degree programs or any of the other test variables in this study.

Research Question 1b was designed to examine relationships between the internal factor of adequate number of qualified students to support a master's degree in accounting and the likelihood of developing a master's degree, adding value to students' education, meeting student educational preferences for the master's degree, contributing to program competitive advantage and seeking separate accounting accreditation from AACSB.

Kruskal-Wallis tests reported significant differences between groups for three dependent variables. The significant test results are:  $X^2(2, n=31)=6.000, p=0.050$ ;  $X^2(2, n=32)=14.855, p=0.001$ ;  $X^2(2, n=32)=8.020, p=0.018$ . Follow-up tests were conducted for pairwise comparisons using the Mann-Whitney tests and found significant differences between group 1 and group 2 ( $p=0.041$ ) and between group 1 and group 3 ( $p=0.001$ ) reported in Table 8. When considering the influence that an adequate number of qualified students might have on a master's degree adding value to students' education there were significant results between groups with mean rankings of group 1, disagree=7.75; group 2, neutral=18.57; and group 3, agree=21.37. With respect to considering the influence that an adequate number of qualified students might have on a master's degree resulting in a competitive advantage for the program, significant findings in mean ranks existed between group 1, disagree=9.75; and group 3, agree=19.67.

Group perceptions of an adequate number of qualified students to support a master's degree in accounting and the likelihood of influencing the test variables resulted in three significant findings. The three tests included the likelihood of developing a master's degree, the likelihood of adding value to the students' education and the likelihood of the master's degree resulting in a competitive advantage. However, when corrected for increased risk of Type I error, only the last two test statistics proved significant. It appears that program directors perceive a definite relationship between an adequate number of qualified students to support a master's degree and the notion of increased value and competitive advantage of a graduate degree program.

Research Question 1c was designed to examine relationships between the internal factor of adequate financial resources to support a master's degree in accounting and the likelihood of

developing a master's degree, adding value to students' education, meeting student educational preferences for the master's degree, contributing to program competitive advantage and seeking separate accounting accreditation from AACSB.

Kruskal-Wallis tests reported significant differences between groups for two dependent variables. The significant test results are  $X^2(2, n=31)=7.320, p=0.026$ ;  $X^2(2, n=32)=6.569, p=0.037$ . Follow-up tests were conducted for pairwise comparisons using the Mann-Whitney tests and found only one significant difference between group 1 and group 3 ( $p=0.021$ ) as reported in Table 9. When considering the influence that adequate financial resources might have on students' preference for the master's degree, significant differences in mean ranks existed between group 1, disagree=12.40; and group 3, agree=22.50.

While adequate financial resources would seem to be an obvious internal factor influencing many other variables in the development of a graduate degree program, this proved to be significant with respect to only one test statistic the likelihood of students' preference for a master's degree. Perhaps accounting faculty felt that the demand for a graduate degree would be driven by interested students and that this in turn would result in adequate financial resources to support the program. Interpretation of the relationship is difficult and remains somewhat ambiguous.

Research Question 1d was designed to examine relationships between the internal factor of adding value to students' education and the likelihood of developing a master's degree, adding value to students' education, meeting student educational preferences for the master's degree, contributing to program competitive advantage and seeking separate accounting accreditation from AACSB.

Kruskal-Wallis tests reported significant differences between groups for three dependent variables. The significant test results are  $X^2(2, n=31)=7.107, p=0.029$ ;  $X^2(2, n=32)=7.331, p=0.026$ ;  $X^2(2, n=32)=11.562, p=0.003$ . Follow-up tests were conducted for pairwise comparisons using the Mann-Whitney tests which found three significant differences between group 2 and group 3 ( $p=0.049$ ;  $p=0.032$ ;  $p=0.002$ ) as reported in Table 10. Significant findings occurred when considering adding value to students' education as an internal factor influencing the likelihood of: adding a face-to-face master's degree in accounting with mean rankings for group 2, neutral=11.45, and group 3, agree=19.56; adding a hybrid master's degree in accounting mean rankings of group 2, neutral=1.41 and group 3, agree=20.03; and of adding value to education mean rankings of group 2, neutral=9.32 and group 3, agree=20.76, respectively.

Significant findings were evident when considering relationships between adding value to students' education and the likelihood of developing master's degree programs in accounting which by their very nature are associated with adding value to education. Here, the association would seem to denote an increase in value from the attainment of graduate education.

Research Question 2a was designed to examine relationships between the external factor of the 150 h requirement and the likelihood of developing a master's degree, adding value to students' education, meeting student educational preferences for the master's degree, contributing to program competitive advantage and seeking separate accounting accreditation from AACSB.

Kruskal-Wallis tests reported significant differences between groups for four dependent variables. The significant test results are  $X^2(2, n=31)=9.366, p=0.009$ ;  $X^2(2, n=32)=7.630, p=0.022$ ;  $X^2(2, n=31)=10.650, p=0.005$ ;  $X^2(2, n=32)=8.958, p=0.011$ . Follow-up tests were conducted for pairwise comparisons using the Mann-Whitney tests and found three significant differences between group 2 and group 3 ( $p=0.017$ ;  $p=0.012$ ;  $p=0.036$ ) as reported in Table 11.



Significant findings are shown from the influence of the external 150 h requirement factor on the likelihood of adding a face-to-face master's degree in accounting with mean rankings for group 2, neutral=7.50, and group 3, agree=18.60. Additional significant differences exist between this external factor and mean rankings for: the likelihood of students' preferring a master's degree in accounting group 2, neutral=8.00, and group 3, agree=19.02; and the likelihood of a master's degree resulting in a competitive advantage with group 2, neutral=9.36 and group 3, agree=19.19.

When examining relationships between the 150 h requirement and the likelihood of influencing the seven test variables significant differences were found for four of the variables with the post-hoc test excluding one of those. The three remaining associations pertained to the likelihood of developing a master's degree in accounting, of students' preferences for the master's degree and of the degree resulting in a competitive advantage for the program. Over the past couple of decades, the 150 h requirement has been widely regarded as a likely cause for increased accounting master's degree programs. Therefore, finding a strong association between this requirement and the particular test variables was not surprising and appears to validate what has been noted in the literature.

Research Question 2b was designed to examine relationships between the external factor of employer interest in hiring at the master's degree level and the likelihood of developing a master's degree, adding value to students' education, meeting student educational preferences for the master's degree, contributing to program competitive advantage and seeking separate accounting accreditation from AACSB.

Kruskal-Wallis tests reported no significant differences between groups regarding the external factor of employer interest in hiring at the master's degree level and the likelihood of implementing any of the test variables. Correspondingly, no post-hoc tests were conducted as indicated in Table 12.

The relationship of employer interest in hiring at the master's level produced no significant associations. Even though some authors (Smith-Barrow, 2014) have recently indicated increased interest in hiring at this level, accounting program directors did not perceive a strong relationship between hiring and any of the test variables. This also tends to support the view that there is limited differential in starting pay for those holding the master's degree versus those graduating with the bachelor's degree.

Research Question 2c was designed to examine relationships between the external factor of competition from programs already offering the master's degree in accounting and the likelihood of developing a master's degree, adding value to students' education, meeting student educational preferences for the master's degree, contributing to program competitive advantage and seeking separate accounting accreditation from AACSB.

Kruskal-Wallis tests reported significant differences between groups for five dependent variables. The significant test results are  $X^2(2, n=31)=7.512, p=0.023$ ;  $X^2(2, n=32)=9.894, p=0.007$ ;  $X^2(2, n=32)=11.449, p=0.003$ ;  $X^2(2, n=31)=8.623, p=0.013$ ;  $X^2(2, n=32)=8.174, p=0.017$ . Follow-up tests were conducted for pairwise comparisons using the Mann-Whitney tests and found five significant differences between group 1 and group 3 ( $p=0.020$ ;  $p=0.017$ ;  $p=0.002$ ;  $p=0.013$ ;  $p=0.017$ ) as reported in Table 13. Significant findings occurred when considering the external factor of competition from programs already offering the master's degree in accounting and pairwise comparisons of mean rankings between group 1 and group 3 for five test variables of: likelihood of developing a face-to-face master's degree in accounting with group 1, disagree=8.14 and group 3, agree=19.10; likelihood of developing a hybrid

master's degree in accounting with group 1, disagree=10.21 and group 3, agree=21.38; likelihood of a master's degree adding value to students' education with group 1, disagree=6.93, and group 3, agree=20.56; likelihood of students' preferring a master's degree in accounting with group 1, disagree=7.57 and group 3, agree=19.43; likelihood of a master's degree in accounting resulting in a competitive advantage with group 1, disagree=9.36 and group 3, agree=20.72.

Competition from other accounting programs reported relationships between five of the seven test variables including the likelihood of developing a master's degree in accounting both face-to-face and hybrid. Additionally, the likelihood of the master's degree adding value to the students' education, the students' preference for a master's degree in accounting and the master's degree resulting in a competitive advantage were all associated with this factor. Strong associations with this external factor appears to lend credibility to the idea that accounting faculty and program directors are acutely aware of and concerned about competition eroding their own program's viability.

Research Question 2d was designed to examine relationships between the external factor of an increase in status that a master's degree would afford and the likelihood of developing a master's degree, adding value to students' education, meeting student educational preferences for the master's degree, contributing to program competitive advantage and seeking separate accounting accreditation from AACSB.

Kruskal-Wallis tests reported significant differences between groups for five dependent variables. The significant test results are  $X^2(2, n=31)=11.598, p=0.003$ ;  $X^2(2, n=32)=9.116, p=0.010$ ;  $X^2(2, n=32)=11.371, p=0.003$ ;  $X^2(2, n=32)=15.668, p=0.000$ ;  $X^2(2, n=32)=14.014, p=0.001$ . Follow-up tests were conducted for pairwise comparisons using the Mann-Whitney tests and found five significant differences between group 1 and group 3 ( $p=0.002$ ;  $p=0.012$ ;  $p=0.002$ ;  $p=0.000$ ;  $p=0.001$ ) and one significant difference between group 1 and group 2 ( $p=0.014$ ) as reported in Table 14. Significant findings in mean ranks occurred when examining relationships between the external factor of an increase in status that a master's degree would afford and pairwise comparisons between group 1 and group 3 and group 1 and group 2. Variables with significant pairwise differences are: likelihood of developing a face-to-face master's degree in accounting with group 1, disagree=9.60, and group 3, agree=22.00; likelihood of developing an online master's degree in accounting with group 1, disagree=11.50 and group 3, agree=21.43; likelihood of developing a hybrid master's degree in accounting with group 1, disagree=9.90 and group 3, agree=22.14; likelihood of a master's degree adding value to students' education with group 1, disagree=7.75 and agree=22.29; likelihood of a master's degree in accounting resulting in a competitive advantage with group 1, disagree=7.60 and group 3, agree=20.96. One significant difference occurred for likelihood of a master's degree in accounting resulting in a competitive advantage with group 1, disagree=0.760 and group 2, neutral=19.81.

Studying relationships between an increase in status that a master's degree would afford the student and the test variables proved revealing. Five different dependent variables were significant with a sixth significant finding from the pairwise test showing much overall association for this external factor. Here, the likelihood of developing master's degrees in all three delivery methods: face-to-face; online; and hybrid proved significant. This was the only significant finding with respect to the online degree type and it appears that a master's degree in accounting is associated with increased status regardless of how it is acquired. Also, there were relationships with status and the variables of added value and competitive program advantage. A

migration to graduate education in other professions for entry into practice may be influencing perceptions of those closely allied with accounting education.

## CONCLUSION

Findings from this study indicate that external factors are more likely associated with development of accounting master's degrees than are internal factors. This is true when considering both the number of significant findings and their consistency. Of the four questions regarding external factors that favor adding a master's degree, there were a total of 14 significant associations versus only 7 for questions dealing with the internal factors. Overall, it appears that factors external to the institution are more likely to motivate programmatic changes than are factors from within. Surprisingly, perceived shortages of terminal degrees in accounting and limited internal financial resources have limited bearing on the likelihood of developing a master's degree. According to Accounting Program Directors, what appears to matter most is having an adequate number of qualified students who are interested in added value during their educational experience. Externally, three of the four factors show strong associations with likely changes leading to a master's degree in accounting. Most notably, the 150 h requirement and competition from joint five year bachelor's master's degree programs tend to validate trends previously reported in the literature.

Past trends, in addition to findings from this study, point to external factors motivating increased adoption of accounting master's degrees. Given the competitive environment of attracting qualified students, schools that offer undergraduate only accounting degrees need to consider the sustainability of their programs. Recruitment of students is intense and so it is likely that individuals and institutions whose livelihood depends on successful programs will acknowledge the potential threat and consider changes.

Out of convenience, some business schools still adhere to a model recommending an undergraduate degree in accounting in addition to a general MBA to fulfill the 150 h requirement. Findings contradict the wisdom of such an approach and query whether it is in the best interest of the student or the accounting profession. The findings are particularly important for smaller programs, which might be tempted to take a short-term view and disregard the external trends that seem to run contrary to their own interests. Indeed, not having a master's degree may have likely already eroded the viability of their accounting program.

Additionally, one cannot ignore the general trend for more education and the status that it affords a profession. Over time, this trend may persuade an accounting profession to take a formal step much like what occurred in the 1980's with respect to the 150 h requirement and require a master's degree for entry into practice. If this were to occur, a master's degree in accounting would seem to be the degree of choice, not a general MBA that business schools might already happen to offer.

Future research should consider obtaining a larger sample size or a census of Accounting Program Directors followed by regression analysis predicting which factors favor adoption of master's degrees. Such an analysis would corroborate this study and lend further credibility to findings. Future experimental design that allows for an introduction of control variables in the statistical analysis might provide for generalizability of the results. Another approach might be to replicate the methodology used here but to look at factors that hinder adoption of master's degrees in accounting. Finally, follow up research in future years would be of interest to those who wish to measure actual programmatic changes in the next decade.

## LIMITATIONS

The results of this study are subject to the usual limitations of a survey approach. The first limitation is the small sample size from a relatively small and finite population. Second, the survey considered only AACSB accredited schools while ignoring the role that non-accredited schools and programs might play. Third, with only about 40% of AACSB schools having the separate accounting accreditation, the number of schools studied that have separate accreditation is likely very small but was not verified. Fourth, the survey was purposefully directed at Accounting Program Directors so as to limit responses to one from each program. This may have produced some bias because responses from this particular group who likely have administrative duties could be different than responses from accounting educators not having those responsibilities.

## SUMMARY

In summary, this study observed different perceptions among Accounting Program Directors from AACSB accredited business programs that offer four-year undergraduate accounting degrees or majors but do not offer a graduate accounting degree. The vast majority of responding schools also offers the general MBA degree, have less than 100 accounting graduates per year and less than 10 full-time accounting faculties. As expected, respondents reported that the most popular method for students to meet the 150 h requirement is to take additional undergraduate credits when earning the bachelor's degree. Three groups of program directors (disagree; neutral; agree) were differentiated based on responses to eight internal and external factors that favor adding a master's degree in accounting at their institution. The program directors were then asked to rate the likelihood of seven dependent test variables at their institution. Subsequently, relationships between the variables were examined using the Kruskal-Wallis  $H$  test of mean rankings for significance followed by appropriate post-hoc tests.

Approximately 16 years ago, Donelan and Reed (2000) anticipated that 80% of those universities offering accounting programs would ultimately offer a master's degree in accounting. This prediction appears reasonable given that two-thirds of AACSB schools currently offer a graduate accounting degree; a sizable increase from what existed 30 years ago. Therefore, it is not unthinkable to suggest that the gap will close even further in the next ten years albeit at a slower pace. Such a trend would imply that approximately 50 more AACSB schools will develop and offer a master's degree in accounting by 2026. By then, those remaining schools not offering a master's degree might seek out a niche for their undergraduate accounting programs. If and when a master's degree is mandated for entry into practice, certain schools might decide to act as feeders to the larger programs that offer master's degrees or, perhaps, forego offering the accounting degree altogether and focus limited resources elsewhere.

## APPENDIX

<b>Table S1</b>		
<b>GROUP/INDIVIDUAL IN SUPPORT OF A GRADUATE EDUCATION FOR ACCOUNTING, 1937-1986</b>		
<b>Notable Group/Individual</b>	<b>Year</b>	<b>Synopsis – form of graduate education for accountants</b>
AIA Council (now AICPA)	1937	Four years of liberal arts followed by graduate work in accounting
NY Society of CPAs	1947	Recommended separate professional schools in accountancy
Perry Commission	1956	Recommended a post-graduate professional academic program
AICPA Council	1959	As soon as feasible, recommended postgraduate study for accounting
Foundation reports (Ford and Carnegie)	1959	Post-graduate study in accounting following four years of liberal arts and sciences
Horizons Study	1967	Preparation for public accounting include graduate study
William A. Paton	1971	Recommended professional schools of accounting
Maurice Moonitz	1972	Advocated professional schools of accounting
AICPA Board of Directors	1973	Advocated professional schools of accounting
AAA and AICPA (Committee of Six)	1977	Recommended professional graduate education
AICPA Task Force (Cohen Comm)	1978	Recommended education culminating in a master’s degree
AICPA Commission on Professional Accounting Education	1983	A baccalaureate accounting program is no longer an adequate education for entry into the CPA profession
AICPA/FSA/NASBA/AAA	1984	Model Accountancy Bill requiring post-baccalaureate education
AAA (Bedford committee)	1986	specialized education at the graduate level by the year 2000
AICPA Special Committee (Anderson Committee)	1986	150 h requirement by the year 2000

<b>Table S2</b>	
<b>RESPONSE RATES FROM ACCOUNTING PROGRAM DIRECTORS</b>	
Number of surveys	154
Number of responses	38
Percent responding	24.7%

<b>Table S3</b>	
<b>INDEPENDENT VARIABLES – FACTORS FAVORING ADDITION OF A MASTER’S DEGREE IN ACCOUNTING</b>	
<u>Internal Factors:</u>	
Adequate number of qualified faculty	
Adequate number of qualified students	
Adequate financial resources	
Addition of value to student education	
<u>External Factors:</u>	
The 150 h requirement	
Employer interest in hiring at master’s level	
Competition from other programs	
Increased status of master’s degree	

<b>Table S4</b>	
<b>LIKELIHOOD AT PARTICIPANT’S INSTITUTION – DEPENDENT</b>	

<b>VARIABLE ABBREVIATION</b>
Likelihood of developing a face-to-face master’s degree in accounting – Likef2f
Likelihood of developing an online master’s degree in accounting – Likeonl
Likelihood of developing a hybrid master’s degree in accounting – Likehyb
Likelihood of master’s degree adding value to student education – Likeval
Likelihood of students’ preferring a master’s degree in accounting – Likepre
Likelihood of master’s degree resulting in competitive advantage – Likecom
Likelihood of seeking separate accounting accreditation – Likeaccr

<b>Table S5 DEMOGRAPHIC INFORMATION FOR RESPONDENT INSTITUTIONS</b>		
Degree offerings–face-to-face	n	%
Four-year bachelor’s degree	30	93.8
Five-year (150 h) bachelor’s degree	6	18.8
MBA, general	20	62.5
MBA, accounting	4	12.5
Other	3	9.4
Degree offerings–online	n	%
Four-year bachelor’s degree	4	12.5
Five-year (150 h) bachelor’s degree	0	0
MBA, general	8	25
MBA, accounting emphasis	0	0
Other	0	0
Accounting graduates per year	n	%
<10	0	0
10-20	2	6.3
21-40	16	50
41-100	9	28.1
>100	5	15.6
Accounting faculty (FTEs)	n	%
<3	1	3.1
3-5	10	31.3
6-9	17	53.1
10-15	4	12.5
>15	0	0
150 h degree-type popularity	n	%
Four year bachelor’s degree+credits	17	53.1
Five year (150 h) bachelor’s degree	3	9.4
Four year bachelor’s+MBA general	4	12.5
MBA, accounting emphasis	0	0
Other	7	21.9

<b>Table S6 DESCRIPTIVE ANALYSIS OF EACH DEPENDENT VARIABLE</b>				
Variable	n	Mean	Median	SD
Likef2f	31	2.52	2.00	1.313
Likeonl	32	1.56	1.50	0.619
Likehyb	32	2.09	2.00	0.995

Likeval	32	3.63	4.00	1.185
Likepre	31	3.26	3.00	1.341
Likecom	32	3.16	3.00	1.273
Likeaccr	29	2.24	2.00	1.057

<b>Table S7</b> <b>RESULTS FOR QUESTION 1A – ADEQUATE NUMBER OF QUALIFIED FACULTY</b>		
<b>Variable</b>	<b>Pairwise</b>	<b><i>p</i></b>
None	None	--

<b>Table S8</b> <b>RESULTS FOR QUESTION 1B – ADEQUATE NUMBER OF QUALIFIED STUDENTS</b>		
<b>Variable</b>	<b>Pairwise</b>	<b><i>p</i></b>
Likef2f	None	--
Likeval	1-2	0.041*
Likeval	1-3	0.001*
Likecom	1-3	0.023*

<b>Table S9</b> <b>RESULTS FOR QUESTION 1C – ADEQUATE FINANCIAL RESOURCES</b>		
<b>Variable</b>	<b>Pairwise</b>	<b><i>p</i></b>
Likepre	1-3	0.021*
Likecom	None	--

<b>Table S10</b> <b>RESULTS FOR QUESTION 1D – ADDING VALUE TO STUDENTS’ EDUCATION</b>		
<b>Variable</b>	<b>Pairwise</b>	<b><i>p</i></b>
Likef2f	2-3	0.049*
Likehyb	2-3	0.032*
Likeval	2-3	0.002*

<b>Table S11</b> <b>RESULTS FOR QUESTION 2A–150-HOUR REQUIREMENT</b>		
<b>Variable</b>	<b>Pairwise</b>	<b><i>p</i></b>
Likef2f	2-3	0.017*
Likeval	None	--
Likepre	2-3	0.012*
Likecom	2-3	0.036*

<b>Table S12</b>		
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<b>RESULTS FOR QUESTION 2B – EMPLOYER INTEREST IN HIRING</b>		
<b>Variable</b>	<b>Pairwise</b>	<b><i>p</i></b>
None	None	--

<b>Table S13 RESULTS FOR QUESTION 2C–COMPETITION FROM PROGRAMS</b>		
<b>Variable</b>	<b>Pairwise</b>	<b><i>p</i></b>
Likef2f	1-3	0.020*
Likehyb	1-3	0.017*
Likeval	1-3	0.002*
Likepre	1-3	0.013*
Likecom	1-3	0.017*

<b>Table S14 RESULTS FOR QUESTION 2D – INCREASE IN STATUS</b>		
<b>Variable</b>	<b>Pairwise</b>	<b><i>p</i></b>
Likef2f	1-3	0.002*
Likeonl	1-3	0.012*
Likehyb	1-3	0.002*
Likeval	1-3	0.001*
Likecom	1-2	0.014*
Likecom	1-3	0.001*

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