

# **Factors Associated with Student Performance in Advanced Accounting: An Empirical Study at a Commuter University**

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*This study examines some determinants of student performance in Advanced Accounting. Of the motivation factors studied (intended grade, intention to take the CPA exam, or attend graduate school) only the first is associated with student performance. None of the three distraction factors (job hours, job type, and course load) has any negative effect on student performance. Of the four self-perceived ability factors, listening and, to some extent, reading have significant association with student performance but writing and math do not. Finally, the grade in the pre-requisite Intermediate Accounting II course has some association but overall GPA has significant association with student performance.*

## **INTRODUCTION**

Several prior research studies have explored various factors (e.g., general academic performance, aptitude, prior exposure to mathematics, prior exposure to accounting, age, gender, motivation, effort, and other intervening variables) that are associated with student performance in college-level courses. It is widely believed that motivation and effort significantly influence individual performance in college. However, as the review of prior research below indicates, very few studies have investigated their impact on required undergraduate Accounting courses. This study investigates the associations between selected motivation, distraction, self-perceived ability, and prior ability factors and student performance in the undergraduate Advanced Accounting course at a commuter public university in the U.S.

As proxies for motivation, the author uses the grade the students intend to earn in the course, intention to take the Certified Public Accountant (CPA) examination, and intention to attend graduate school. As proxies for distraction, the author uses the number of hours of work per week, the type of job (whether or not it is related to accounting, or business in general) and the number of courses taken per semester. The study measures students' self-perceived abilities using their own self-reported math, writing, reading, and listening abilities. Students' prior abilities are measured by the actual grade earned in the Intermediate Accounting II course, which is a prerequisite for the Advanced Accounting course, and by Overall Grade Point Average (OGPA.) The dependent variable, the student performance, is measured in two different ways: the letter grade for the course, and the total overall points percent score (hereafter referred to as 'Points') for the course.

One of the motivations of this study is predicated on the belief that identifying factors that motivate students to perform well and factors that distract them from performing well may help us emphasize the motivation factors and discourage the distraction factors. Another purpose of the study is to provide empirical support to the intuitive notion that motivation does indeed lead to better student performance. Also the study could help us determine whether students make accurate assessment of their own writing,

math, reading, and listening abilities. If they do, there should be significant association between their assessment of these abilities and their performance. If there is no significant association between their evaluation of these abilities and their performance, this would be an indication that the students are not making accurate evaluation of their abilities, which could be detrimental to their success in college.

The remaining parts of the paper present a review of prior research, discussion of the study objectives, variables and hypotheses, research methodology, and results. The paper ends with conclusions, recommendations, study limitations, and some suggestions for further research.

### **Review of Prior Research**

Several prior studies have examined the association between various factors (e.g., general academic performance, aptitude, prior exposure to mathematics, prior exposure to accounting, gender, age, motivation, effort, and other intervening variables) and student performance in college-level courses. The overall Grade Point Average (OGPA) is used frequently as a proxy for prior academic performance and aptitude.

Several researchers, using data from various U.S. colleges, find evidence supporting OGPA as a significant predictor of performance in accounting courses (Eckel and Johnson 1983; Hicks and Richardson 1984; Ingram and Peterson 1987; Eskew and Faley 1988; Doran, et al. 1991; Maksy and Zheng 2008; Maksy 2012 and 2014; Gupta and Maksy 2014; and Maksy and Wagaman 2012, 2013, and 2015, and Alanzi 2015). In the finance area, Paulsen and Gentry (1995); Chan, et al. (1997); Sen, et al. (1997); Didia and Hasnat (1998); Marks (1998); Van Ness, et al. (2000); Johnson, et al. (2002); Biktimirov and Klassen (2008) find OGPA to be a strong predictor of grade in the Financial Management course that is required of all business majors. Wooten (1998) finds that aptitude, as measured by the Scholastic Aptitude Test (SAT) score, and grade history are significant variables in influencing performance of students in an introductory accounting course. U.S. research findings are supported in Australia by Jackling and Anderson (1998) and in Scotland by Duff (2004). In Wales, Lane and Porch (2002) find that performance in introductory accounting can partially be explained by reference to factors in the students' pre-university background. However, these factors are not significant when the student progresses to upper level accounting classes. Also, using another measure, pre-university examination performance, Gist, et al. (1996) find no significant association between academic performance and performance in accounting courses at the university level.

Accounting is a subject area that requires accumulation of prior knowledge and quantitative skills. Thus, several studies have investigated the impact of prior exposure to mathematics and accounting on performance in college accounting courses and the results are inconclusive. On one hand, some studies (for example, Baldwin and Howe 1982; Bergin 1983; and Schroeder 1986) find that performance is not significantly associated with prior exposure to high school accounting education. On the other hand, some later studies (for example, Eskew and Faley 1988; Bartlett et al. 1993; Gul and Fong 1993; Tho 1994; Rohde and Kavanagh 1996) find that prior accounting knowledge, obtained through high school education, is a significant determinant of performance in college-level accounting courses. There is also some ambiguity with regard to the influence of mathematical background on performance in accounting courses. For example, Eskew and Faley (1988) and Gul and Fong (1993) suggest that students with strong mathematical backgrounds outperform students with weaker mathematical backgrounds. On the other hand, Gist et al. (1996) do not report the same results. Furthermore, Guney (2009) suggests that grades in secondary education mathematics are a very strong determinant of performance in accounting but only for non-accounting majors.

Prior studies about the influence of motivation and effort on student performance also report conflicting results. For example, Pascarella and Terenzini (1991), report that motivation and effort, among other factors, significantly influence students' performance in college. Wooten (1998) finds that motivation significantly affects effort which in turn significantly affects performance in an introductory accounting course. Maksy and Zheng (2008), and Gupta and Maksy (2014) use 'the grade the student intends to earn in the course' as a proxy for motivation and find it to be significantly associated with the student's performance in auditing, and investment courses. Paulsen and Gentry (1995) report that

students' academic performance in a large introductory Financial Management course was significantly related to several motivational variables such as intrinsic and extrinsic goal orientations and task value, and learning strategy variables, including time, study, and effort. Johnson, et al. (2002) utilize computerized quizzes and analyze the effect of objectively measured effort on student performance in Financial Management course. They show that, after controlling for aptitude, ability, and gender, effort as measured by attempts and log time, remains significant in explaining the differences in performance. Rich (2006), uses students' homework preparedness and unpreparedness in class as a proxy for effort and non-effort. He finds significant positive association for the former and negative association for the latter with exam percent. Biktimirov and Klassen (2008) find weak association between hits to course management system and grade in finance course. However, using self-reported data, Didia and Hasnat (1998) present very weak counter-intuitive evidence for one of the two OLS models, but not for the ordered-probit models, that the more time spent studying per week the lower the grade in the Introductory Finance course. However, they did not control for GPA. Also, using self-reported data, Nofsinger and Petry (1999) find no significant association between effort and performance in a Principles of Finance course.

In recent years, there has been increased interest in studying the influence of intervening variables on student performance. Paulsen and Gentry (1995) find that academic performance in a large introductory financial management class is significantly related to control over learning, test anxiety, self-efficacy, elaboration, organization and metacognition. Wooten (1998) finds no significant association between work, family, and extra-curricular conflicts and students' performance in an introduction to accounting course. Chan, et al. (1997) find no significant association between performance in a financial management course and attendance, credit hours enrolled, and number of weekly work hours. In a similar vein, Van Ness et al. (2000) find no association between students' full time or part time status and grades in a Principles of Finance class. However, they find that students who are enrolled in internet class are more likely not to complete the course. This appears to be contrary to Paulsen and Gentry finding because the internet course is designed to give students more control over their learning in terms of very flexible deadline for assignments and one full year to complete the course. Didia and Hasnat (1998) find strong positive association between number of credit hours enrolled in the semester and course grades. This result may seem to be counter intuitive; however, some research, (e.g., Gupta and Maksy, 2014), shows that students with higher GPAs take more courses and more credits per semester. Rich (2006) reports significant negative association between class absences and being late to the class, and exam percent. In the accounting area, Wooten (1998) does not find significant association between course performance and work, family, and extracurricular conflicts. Paisey and Paisey (2004) and Guney (2009) show there is a clear positive association between attendance and academic performance in accounting courses. Paisey and Paisey also report that the most frequently cited reason for not attending classes was students' participation in part-time employment. Alanzi (2015) finds significant association between class attendance (and college experience) and student performance in a Cost Accounting course at a university in Kuwait. Lynn and Robinson-Backmon (2005) find a significant adverse association between employment status and learning outcomes in upper-division accounting courses. These authors also indicate that a student's self-assessment of course learning objectives is significantly and directly related to grade performance. In contrast, Maksy and Zheng (2008), Maksy (2012 and 2014), Gupta and Maksy (2014), and Maksy and Wagaman (2012, 2013, and 2015) find no significant negative association between the number of hours of work per week and student performance in several accounting, auditing, and investment courses. Tessema et al. (2014) report that if students work 10 hours or less per week they are more satisfied and have higher GPAs than students who work more than 10 hours per week. Schleifer and Dull (2009) address metacognition in students and find a strong link between metacognitive attributes and academic performance. Metacognition is frequently described as 'thinking about thinking' and includes knowledge about when and how to use particular strategies for learning or for problem solving.

Age and gender are two demographic variables that receive less attention than those factors discussed above, but the results are still inconclusive. Chan, et al. (1997), Didia and Hasnat (1998), and Van Ness et al. (2000) find no significant association between grade in an Introductory Finance course and gender or age of students. Henebry and Diamond (1998) and Johnson et al. (2002) also do not find any significant

association between a finance principles course score and gender of students. Alanzi (2015) finds that gender, age, nationality, scores and majors in high school, grades in prerequisite courses and overall GPA in college, have no significant association with student performance in Cost Accounting. However, Henebry and Diamond (1998) show that both male and female students earn significantly higher grades in courses taught by female instructors. This difference was not attributable to adjunct, tenure track, or tenured status of instructors. Sen et al. (1997), on the other hand, show that female student performed worse than male students in principles of finance courses at two different mid-western universities. In the field of accounting, Bartlett et al. (1993) and Kohl and Kohl (1999) suggest that younger students have better performance, particularly at the senior university level. However, Jenkins (1998) and Lane and Porph (2002) conclude that age is not a significant determinant of performance in auditing and management accounting courses. Also, Schrouder and Rhodd (2013) report that older and more experienced students perform better than younger and less experienced students in a Public Administration course. The studies related to gender also produce conflicting results. Some studies indicate that male students perform better than female ones, but the results are either insignificant (for example, Lipe 1989) or only hold true for introductory courses (Doran, et al. 1991). To the contrary, Mutchler et al. (1987) find that female students score significantly higher than male students. Also, Almunals et al. (2014) report that females perform better than males in the accounting major. They also find other factors significantly associated with the performance of students majoring in accounting including high school major (science majors perform better than humanities majors), marital status (married students perform better than single students), frequency of doing homework, class participation, peer interaction, and number of days studying before the exam. Furthermore, Gracia and Jenkins (2003) find that there is a significant difference in the performance in favor of female students over male students in Wales. In contrast, other studies find no significant differences in performance between male and female accounting students. For example, Tyson (1989) and Buckless et al. (1991) demonstrate that gender effect disappears after controlling for general academic ability. Similarly, Gammie et al. (2003) find very little indication of performance differential between males and females throughout the degree program.

It is also possible that other intervening variables, besides the demographic variables, may affect student performance in accounting courses in college. Bartlett et al. (1993) conclude that very few of the educational, demographic or financial characteristics variables appear to have a significant influence on student performance in university accounting examinations. Gracia and Jenkins (2003) observe that students who actively demonstrate commitment and self-responsibility towards their studies tend to do well in formal assessments. Accordingly, they agree with Bartlett et al. (1993) that intervening variables, rather than demographic variables, may be important determinants of student performance in university accounting examinations. They are also in agreement with Lane and Porph (2002) who suggest that other important factors like student motivation may explain student performance. Also, Seow et al. (2014) report that prior academic achievement, admission interview, critical thinking, and mathematical aptitude are significantly associated with successful academic performance in an undergraduate accounting degree at a Singapore University.

Conflicting results are also observed about the association between student performance in introductory accounting and their performance in non-introductory accounting courses. For example, Canlar (1986) finds evidence that college-level exposure to accounting is positively related to student performance in the first MBA-level financial accounting course. Additionally, Tickell and Smyrnios (2005) find that the best predictor of academic performance in any one year is the performance in the same discipline in the previous year. Doran et al. (1991) report very surprising and counterintuitive result that performance in the introductory accounting course has a negative impact on performance in subsequent accounting courses. Maksy and Zheng (2008) and Maksy and Wagaman (2012, 2013, and 2015) find that OGPA and the grade in intermediate accounting II are strong predictors of student performance in auditing, and senior seminar in accounting courses. Gupta and Maksy (2014) report that overall GPA and grades in Financial and Managerial Accounting courses are strong predictors of student performance in an Investment course.

While prior research has been largely inconclusive or replete with conflicting results, it is not the purpose of this study to resolve all these conflicts. The author's objective, in this study, is to provide more insight on those areas in which there was some general agreement. Since motivation and effort has generally been positively associated with student performance, the author tries, in this study, to test whether some new selected motivation factors affect student performance in the Advanced Accounting course. The study also looks at several factors which are commonly viewed as possibly distracting students from performing well and tests whether they indeed are negatively affecting student performance. Moreover, the study investigates the impact of four self-perceived abilities factors and student performance and whether students make accurate assessment of those abilities. Furthermore, the study investigates the impact of two specific measures of prior abilities on student performance, and also uses them as control variables while testing for the association between motivation, distraction, and self-perceived abilities factors and student performance in the Advanced Accounting course.

### **Study Objectives and Hypotheses**

The *first objective* of this research is to study the association between three selected motivation factors (the grade the student intends to earn in the course, the student's intention to take the CPA examination, and the student's intention to attend graduate school), and the student's performance in the Advanced Accounting course at a commuter public university in the U.S. The author hypothesizes that there are positive and significant association between those motivation factors and student performance. That is, students who intend to earn higher grades; take CPA exams, or attend graduate school, are motivated to perform well and do perform well in the course to achieve their intentions.

The *second objective* is to study the association between three distraction factors (the student's number of working hours per week during the semester, the student's number of courses taken in the semester, and the student's job type, i.e., whether or not it is related to accounting, or business in general) and the student's performance in the Advanced Accounting course. Intuitively, the higher the number of work hours per week, the less time the student will have to study for the Advanced Accounting course resulting in lower course grade. Furthermore, it is likely that the performance of a student taking higher number of courses will be affected negatively because the student may not be able to devote sufficient number of hours of study to the course.

Additionally, if the student's job is not related to accounting, or business in general, the student's grade in the Advanced Accounting course will be lower than if the student's job is related to one of these areas. In light of the prior discussion, the author hypothesizes that if the student's number of work hours per week is higher, and/or the number of courses taken in the semester is higher, and/or the student's job is not related to accounting, or business in general, there will be a significant *negative* association between these distraction factors and the student's performance in the Advanced Accounting course. Of course, distraction factors may offset each other thereby cancelling out any single factor's effect. For example, a student who works higher number of hours per week may take fewer courses, and vice versa, so that there is no negative effect on performance. For this reason, the author tests the effect of each distraction factor on student performance while controlling for the other two factors. The author also investigates the associations among the distraction factors themselves.

The *third objective* is to study the associations between students' performance in the Advanced Accounting course and their current self-perceived abilities in math, writing, reading, and listening. A positive association between self-reported abilities and performance may indicate that students make reasonably accurate assessment of their abilities. A lack of positive and significant association between certain abilities and performance could be due to the possibility that those abilities are not relevant to the performance in the course or to students' inaccurate assessment of their abilities. Before the students filled out the questionnaires, the author instructed them to be as honest as possible in their answers so students who plan to take this course in the future would benefit from the results of this research. The author assumes that the students followed those instructions and, thus, the author hypothesizes positive and significant associations between students' self-perceived abilities and their performance in the Advanced Accounting course.

The *fourth objective* is to study the association between students' performance in the Advanced Accounting course and their grade in the pre-requisite Intermediate Accounting II course, and their overall GPA. Based on the results of many prior studies, the author hypothesizes that there are positive and significant associations between these prior actual abilities and student performance. Thus, the hypotheses are that students who earned higher grades in Intermediate Accounting II, or have high GPAs, will earn higher grades in the Advanced Accounting course, and vice versa.

### **Study Dependent Variables**

In addition to the 12 independent variables described under the study objectives above, the study uses two dependent variables. Initially, the author used only the letter grade in the course (A, B, C, etc.) as the student performance dependent variable. However, the author quickly realized that the letter grade treats a student earning the lowest end of the grade range as having the same exact performance as that of a student earning the highest end of the grade range. For example, a student with a total percentage points of 80 and another with a total percentage points of 89 would be considered having equal performance since both students receive a B for the course, even though the first student is one percentage point away from a C grade and the other student is one percentage point away from an A grade. As a result, the author also decided to use overall points percentage earned by a student in the course as a dependent variable.

### **Study Hypotheses**

The study tests one hypothesis for each independent variable. The formal statements of all 12 hypotheses are presented (classified under four categories of factors) in APPENDIX A. To prevent redundancy, each hypothesis is presented in the alternate form only.

## **RESEARCH METHODOLOGY**

### ***Survey Instrument***

The author modified a list of survey questions, from Ingram et al. (2002), to include, besides the study variables, some demographic and other information. For ethical, confidentiality, and potential risk issues pertaining to participants, the author had to submit a comprehensive 10-page application (together with a copy of the survey instrument) to the University's Institutional Review Board (IRB) for approval. Prior to that, the author had to take the National Institute of Health

(NIH)'s training course titled 'Protecting Human Research Participants,' and pass the test given at the end of the course. The certificate of completion of the course was required to be submitted with the application to the University's IRB. The University's IRB made only one modification to the survey instrument by adding the statement that 'participation in the survey is completely voluntary.' The survey instrument is available from the author upon request.

### ***Study Sample***

In spring and summer 2015, the author was able to collect the data on the survey instrument from 57 of 60 students enrolled in the two sections of the undergraduate Advanced Accounting course offered at a public commuter university. The university enrolls about 10,000 students, and the College of Business enrolls about 1,600 students. It is a state-supported university that has public access as a major part of its mission statement. It is located in one of the largest cities in the United States. The instructor teaching both sections of the course provided the author (using only students' ID numbers for confidentiality purposes) with the data representing the two dependent variables (the 'letter grade,' and 'overall points percentage').

Two different graduate students entered the data from the student questionnaire on two separate Excel spreadsheets. The author matched the two spread sheets and resolved any discrepancy by referring to the original questionnaire. This virtually eliminated any data entry errors.

### ***Data Analysis***

To test the formulated hypotheses in APPENDIX A, the study uses one-way analysis of variance (ANOVA), Pearson and Spearman's correlation coefficients, partial correlations, and ordinary least square linear regressions.

## **STUDY RESULTS**

Table 1 presents the minimum and maximum value, the mean, and the standard deviation for each of the 14 variables of the study. That Table shows an average grade in the Advanced Accounting course of 2.53 versus 3.07 in the Intermediate Accounting II course which is a prerequisite for the Advanced Accounting course. Also, the average Advanced Accounting course grade is much lower than the overall GPA of 3.27, and average Intended Grade of 3.25. In comparison, Didia and Hasnat (1998) study of performance determinants in a finance course report a Financial Management course grade of only 1.85, GPA in a pre-requisite course of 2.71, and overall GPA of 2.61. It is interesting to note that the negative difference of 0.14 between the average course letter grade and the average Intermediate Accounting II pre-requisite course grade is much smaller than the comparable negative difference of 0.86 reported by Didia and Hasnat (1998). However, the difference of 0.74 between the average course letter grade and overall GPA is comparable to the difference of 0.76 reported by Didia and Hasnat. No comparable data is available in the literature for the difference between the average grade in the course and the average Intended Grade.

Following is an analysis of the study results by the type of factors investigated (motivation, distraction, self-perceived abilities, and prior ability) taking all observations into account.

### ***Motivation Factors Associated with Student Performance***

Of the three motivation variables discussed in  $H_1$  to  $H_3$ , only Intended Grade (IG) is significantly associated with student performance (however defined) based on all tests (One-Way ANOVA, Pearson and Spearman's Correlations, and Regression Analysis) at the .01 level of significance (Tables 2, 3 and 5). Table 4 shows that this significant association stays the same even after controlling for prior ability, as measured by the grade earned in the pre-requisite Intermediate Accounting II (ACC 322) and OGPA. This is true also even if the author controls for OGPA alone (this additional partial correlation test is not reported in this paper but is available from the author upon request.) Intention to take the CPA exam is not significantly associated with student performance under all tests, except under the ANOVA test where it is significantly associated with student performance only when it is defined as "Points" and only at the .10 significance level. Similarly, intention to attend graduate school is not significantly associated with student performance under all tests, except under the ANOVA test where it is significantly associated with student performance only at the .10 level when it is defined as "Grade" but at the .01 level when it is defined as "Points."

### ***Distraction Factors Associated with Student Performance***

None of the three distraction factors has any significant negative association with student performance (however defined) under any tests. The correlations test (Table 3) and the regression test (Table 5) showed that there is some significant *positive* association, but only at the .10 significance level, between Job Type (if it is accounting or business related) and student performance defined only as the Letter Grade. After controlling for the prior ability factors (Intermediate II grade and Overall GPA), the *positive* association between Job Type and student performance (defined as Grade) became more significant at .05.

Table 10, Part A, indicates that each distraction factor has no significant *negative* effect on student performance (however defined) even when the author controls for the other two distraction factors. Table 10, Part B, indicates that controlling for the other two distraction factors as well as the two prior actual ability variables, the results remain the same. These results are consistent with the results reported by

Maksy and Zheng (2008), Maksy (2012 and 2014), Gupta and Maksy (2014), and Maksy and Wagaman (2012, 2013, and 2015).

### ***Self-Perceived Abilities Factors Associated with Student Performance***

Of the four self-perceived ability factors, only Listening has significant association (at the .05 level) with student performance (however defined) under all tests even after controlling for two prior ability factors. One minor exception to that statement is that when student performance is defined as “Points” the significance level is stronger (at .01) under the Spearman correlation test, and weaker (at .10) under the regression test. Another minor exception is that Reading has significant association with student performance (at .10 when it is defined as “Grade” and at .05 when it is defined as “points”), but only under the ANOVA test. These results are not in agreement with the results reported by Maksy and Zheng (2008), Maksy (2012 and 2014), Gupta and Maksy (2014), and Maksy and Wagaman (2012, 2013, and 2015) who found no associations between listening and student performance in several accounting and investment courses.

### ***Prior Actual Ability (Control) Factors Associated with Student Performance***

Pearson and Spearman correlations (Table 3) show significant association (at the .01 level) between Overall GPA and student performance, however defined. The ANOVA tests (Table 2) show the same significant association, but at the .05 level of significance. The regression tests (Table 5) show the same significant association, but at the .05 level when student performance is defined as “Grade” and at the .10 level when student performance is defined as “Points.” As to the association between the Intermediate II grade and student performance, only Pearson and Spearman correlations show significant associations but only at the .10 level. Also, Pearson correlations show that significant association only when student performance is defined as “Grade” and Spearman correlations show that significant association only when student performance is defined as “Points.” The lack of strong significant association between the Intermediate II grade and student performance in Advanced Accounting in this study is not consistent with the results reported by Maksy (2012) who found strong association of Intermediate II grade and student performance in Upper-Level undergraduate accounting courses, or with the results reported by Maksy and Wagaman (2012) who found strong association of Intermediate II grade and student performance in Auditing, or those reported by Maksy and Wagaman (2013) who found strong association of Intermediate II grade and student performance in the Senior Seminar in Accounting.

## **CONCLUSIONS AND RECOMMENDATIONS**

One general conclusion of the study (which is in agreement with most prior studies) is that motivated students perform better than non-motivated students in Advanced Accounting as confirmed in this study under all tests. However, Table 1 shows that there was quite a disparity between average Intended Grade of 3.25 and average letter grade of only 2.53. Speaking of motivation, all tests (except ANOVA at weak levels of significance) show that intention to take the CPA examination and intention to attend graduate school do not seem, in this study, to be motivating factors for the students to perform well in the Advanced Accounting course.

In light of the above general conclusion, the author recommends that accounting faculty should know that encouraging their students to plan to take the CPA exam or pursue graduate studies, while seems to be a good idea, would probably not going to do the trick and motivate students to put the time and effort to study hard and to do well in the Advanced Accounting course. Accounting faculty may want to think of other motivating factors.

Another general conclusion from the statistical tests of this study is that the distraction variables, i.e., number of hours of work per week, working in non-accounting, or non-businessrelated jobs, and number of courses taken in the semester have no statistical significant negative associations with student performance. That is, they do not distract the students and prevent them from earning higher grades in the Advanced Accounting course. There is some evidence, albeit weak, that students who work in accounting

or business related jobs have better performance in Advanced Accounting than students who work in non-accounting or non-business related jobs.

In light of the above general conclusion, the author recommends that accounting faculty need not encourage their students to work as few hours per week as possible to earn high grades in the Advanced Accounting course. Perhaps, accounting faculty should advise their students to try to work in a job that is accounting or business related before they accept the first job that becomes available even if it is not related to accounting or business in general. Furthermore, if students have to work a significant number of hours anyway to support their families, accounting faculty need not encourage those students to take as few courses per semester as possible to earn high grades in the Advanced Accounting course. Accounting faculty, when advising students with poor performance, need to think of causes (e.g., poor study habits, poor time management, etc.) other than too many working hours per week or too many courses taken per semester to pinpoint to those students.

A third general conclusion of the study is that, other than listening and, to a very limited extent, reading, students' estimate of their own current perceived abilities (e.g., writing, and math) have no significant association with students' performance in the Advanced Accounting course. This is an indication of the possibility that students are providing inaccurate evaluation of their own abilities in these areas. The students' inability to accurately evaluate their abilities can have negative consequences on their performance because they may not seek help in the areas they have some weakness in.

In light of this general conclusion, the author recommends that the college of business faculty in general, and accounting faculty in particular, should encourage students to make more accurate evaluations of their writing, math, and reading abilities and to seek help for the areas they have some weakness in. Another recommendation for faculty is to encourage their students to listen carefully to the lecture (and ask questions if they don't understand something the instructor has said) and don't be distracted by using their cell phones and/or laptops if allowed in class. The instructor may support that by informing the students that research has shown that there is a strong association between listening and performance in the Advanced Accounting course.

As expected and as shown in prior studies with respect to other courses, a fourth general conclusion of the study is that students with high prior actual ability end up earning high grades in the Advanced Accounting course. Specifically, the study provides evidence that there is a strong significant association between students' Overall GPA and their performance in the Advanced Accounting course. Also, correlation tests of the study show that there is significant but weak association between the grade in the pre-requisite Intermediate Accounting II course and student performance in the Advanced Accounting course.

In light of this general conclusion, the author recommends that accounting faculty encourage their students to study hard to earn good grades in all courses (including Intermediate

Accounting II) to improve their GPA by emphasizing that research shows that students with high overall GPA earn high grades in the Advanced Accounting course. Again, the author realizes that some faculty may already be doing this; thus, these recommendations are for those who may not be.

## **STUDY LIMITATIONS AND SUGGESTIONS FOR FURTHER RESEARCH**

This study is subject to some limitations. One limitation is that the study school is a public (or state-supported) university and, thus, the conclusions may not be applicable to private schools. One suggestion for further research is to replicate the study at a private school. Another limitation is that the study school is a commuter school and it is possible that the results may not be generalizable to residential schools. Consequently, another suggestion for further research is to replicate the study at a residential school. A third limitation is that the study sample is somewhat small relative to the number of independent variables analyzed and, hence, the results may not be as robust as they would have been if the sample was larger. Thus, another suggestion for further research is to replicate the study using a somewhat larger sample.

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**APPENDIX A**  
**STUDY FORMAL STATEMENTS OF HYPOTHESES**

**Motivation Factors**

*H<sub>1</sub>: There is a significant positive association between the grade the student intends to earn in the Advanced Accounting course and student performance in that course.*

*H<sub>2</sub>: There is a significant positive association between the student's intention to take the CPA exam and student performance in the Advanced Accounting course.*

*H<sub>3</sub>: There is a significant positive association between the student's intention to attend graduate school and student performance in the Advanced Accounting course.*

**Distraction Factors**

*H<sub>4</sub>: There is a significant negative association between the student's average number of hours of work per week and student performance in the Advanced Accounting course.*

*H<sub>5</sub>: There is a significant negative association between the student's job type (if it is not related accounting, or business in general) and student performance in the Advanced Accounting course.*

*H<sub>6</sub>: There is a significant negative association between the number of semester courses a student is taking and that student's performance in the Advanced Accounting course.*

**Self-Perceived Ability Factors**

*H<sub>7</sub>: There is a significant positive association between the student's self-reported writing ability and student performance in the Advanced Accounting course.*

*H<sub>8</sub>: There is a significant positive association between the student's self-reported math ability and student performance in the Advanced Accounting course.*

*H<sub>9</sub>: There is a significant positive association between the student's self-reported reading ability and student performance in the Advanced Accounting course.*

*H<sub>10</sub>: There is a significant positive association between the student's self-reported listening ability and student performance in the Advanced Accounting course.*

**Prior Ability Factors**

*H<sub>11</sub>: There is a significant positive association between the grade the student earned in the Intermediate Accounting II course and student performance in the Advanced Accounting course. H<sub>12</sub>: There is a significant positive association between the student's overall GPA and student performance in the Advanced Accounting course.*

**APPENDIX B**

**TABLES**

**TABLE 1  
DESCRIPTIVE STATISTICS OF THE STUDY VARIABLES**

	N	Minimum	Maximum	Mean	Std. Deviation <sup>2</sup>
Letter Grade <sup>1</sup>	57	1	4	2.53	.826
Overall Points (in %)	57	36	95	66.98	12.994
Intended Grade <sup>1</sup>	55	2	4	3.25	.645
CPA <sup>2</sup>	55	0	2	1.56	.601
Grad Sch <sup>3</sup>	54	0	3	1.52	1.255
Job Hours	53	0	50	28.68	13.307
Job Type <sup>4</sup>	51	0	3	1.84	1.027
Course Load	55	1	6	3.04	1.347
Writing Ability <sup>5</sup>	56	1	4	2.82	.834
Math Ability <sup>5</sup>	56	2	4	3.73	.486
Reading Ability <sup>5</sup>	56	2	4	3.54	.660
Listening Ability <sup>5</sup>	56	1	4	3.23	.713
ACC 322 Grade <sup>1</sup>	54	2	4	3.07	.843
OGPA (out of 4.0)	53	2.63	3.75	3.27	.383

<sup>1</sup>A = 4.00; B = 3.00; C = 2.00; D = 1.00; F = 0.00.

<sup>2</sup>No = 0; Maybe = 1; Yes = 2

<sup>3</sup>No = 0; Maybe = 1; Yes, at this school = 2; Yes, at another school = 3

<sup>4</sup>Other = 1; Business Related (but not accounting or finance) = 2; Finance related = 3; Accounting related = 4

<sup>5</sup>Very Good =4; Good =3; Average =2; Poor =1

**TABLE 2**  
**ONE-WAY ANALYSIS OF VARIANCE**  
**(All numbers are for Between Groups Only)**  
Complete ANOVA Numbers are Available from the Author upon Request

		Dependent Variables			
		Letter Grade		Overall Points %	
Independent Variables	DF	F Value	Sig.	F Value	Sig.
Intended Grade	2/54	11.945	0.000***	1282.486	0.000***
CPA	2/54	1.813	0.173	2.694	0.077*
Grad School	2/53	1.832	0.062*	748.657	0.010***
Job Hours	5/52	0.433	0.823	.514	0.764
Job Type	3/50	1.269	0.296	2.145	0.107
Course Load	5/54	1.288	0.284	.817	0.543
Write	3/55	0.744	0.531	0.678	0.569
Math	2/55	0.267	0.767	0.092	0.912
Read	2/53	2.995	0.059*	3.759	0.030**
Listen	2/55	2.360	0.104	3.515	0.037**
ACC 322	2/53	1.690	0.195	2.288	0.112
OGPA	3/52	3.592	0.020**	3.323	0.027**

\*Significant at 10% level of significance using two tails test  
\*\*Significant at 5% level of significance using two tails test  
\*\*\*Significant at 1% level of significance using two tails test

**TABLE 3**  
**PEARSON/SPEARMAN CORRELATION COEFFICIENTS<sup>a</sup>**

	Letter Grade	Points	IG	CPA	Grad Sch	Job Hours	Job Type	Course Load	Write	Math	Read	Listen	ACC 322	OGPA
Letter Gr		.824***	.535***	.122	-.018	.178	.243	-.102	.177	.014	-.055	.278**	.244*	.398***
Points	.843***		.526***	.095	-.083	.097	.194	-.118	.169	-.006	-.114	.267**	.218	.382***
IG	.516***	.522***		.209	-.017	-.208	-.086	.030	.079	.153	-.071	-.080	.153	.379***
CPA	.093	.065	.168		.285**	-.074	-.179	.089	.286**	.327**	.185	.153	.029	.094
Grad Sch	.024	-.038	.009	.287**		-.281**	-.457***	.227*	.242*	.211	.131	-.002	.046	-.071
Job HRS	.170	.143	-.213	-.089	-.315**		.599***	-.340**	.107	-.275**	.073	.179	.093	.004
Job Type	.251*	.221	-.064	-.220	-.442***	.566***		-.281**	-.033	-.302**	.079	.195	.107	-.061
C Load	-.120	-.150	.051	.103	.219	-.353***	-.292**		-.004	.177	.041	-.195	-.022	.030
Write	.143	.168	.083	.230*	.214	.091	-.083	-.018		-.075	.309**	.102	.229*	.465***
Math	-.035	-.018	.160	.314**	.219	-.260*	-.286**	.215	-.057		.059	-.027	.178	.098
Read	-.009	-.028	.007	.192	.125	.050	.043	.049	.379***	.115		-.115	.084	-.004
Listen	.331**	.383***	-.071	.136	-.069	.185	.263*	-.175	.066	-.077	-.099		.164	-.018
ACC 322	.216	.246*	.169	-.001	.049	.066	.065	-.028	.247*	.156	.094	.046		.452***
OGPA	.373***	.410***	.406***	.050	-.054	-.006	-.087	.049	.469***	.076	.072	-.007	.454***	

<sup>a</sup> Pearson correlations are above the diagonal and Spearman correlations are below the diagonal.

\*Significant at 10% level of significance using two tails test

\*\*Significant at 5% level of significance using two tails test

\*\*\*Significant at 1% level of significance using two tails test

**TABLE 4**  
**PEARSON PARTIAL CORRELATION COEFFICIENTS**  
**(CONTROLLING FOR ACC 322 AND OGPA)**

	Letter Grade	Points	IG	CPA	Grad Sch	Job Hours	Job Type	Course Load	Write	Math	Read	Listen
<b>Letter Gr</b>	<b>1</b>											
<b>Points</b>	.717***	<b>1</b>										
<b>IG</b>	.455***	.399***	<b>1</b>									
<b>CPA</b>	.045	-.035	.123	<b>1</b>								
<b>Grad Sch</b>	-.142	-.217	-.064	.213	<b>1</b>							
<b>Job HRS</b>	.123	.053	-.269*	-.029	-.338**	<b>1</b>						
<b>Job Type</b>	.329**	.247	-.126	-.232	-.484***	.549***	<b>1</b>					
<b>C Load</b>	-.186	-.246	.043	.113	.338**	-.379**	-.376**	<b>1</b>				
<b>Write</b>	-.127	-.123	-.200	.184	.238	.115	-.017	.037	<b>1</b>			
<b>Math</b>	.069	.013	.185	.415***	.234	-.236	-.295*	.194	-.117	<b>1</b>		
<b>Read</b>	-.134	-.242	-.222	.157	.127	.112	.053	.084	.332**	.052	<b>1</b>	
<b>Listen</b>	.303**	.301**	-.097	.256*	-.059	.207	.235	-.164	.072	.140	-.254*	<b>1</b>

\*Significant at 10% level of significance using two tails test

\*\*Significant at 5% level of significance using two tails test

\*\*\*Significant at 1% level of significance using two tails test

**TABLE 5**  
**REGRESSION ANALYSIS**  
**(All numbers are for 55 Observations)**

_Independent Variables	Dependent Variables			
	Letter Grade		Overall Points %	
	t Coeff.	Sig.	t Coeff.	Sig.
Constant	-2.824	0.008***	- 0.622	0.539
IG	3.762	0.001***	2.813	0.008***
CPA	-0.622	0.538	- 0.886	0.382
Grad Sch	0.659	0.515	- 0.262	0.795
Job Hours	0.366	0.716	- 0.189	0.852
Job Type	1.822	0.078*	0.862	0.395
Course Load	-0.443	0.661	- 0.943	0.353
Write	-0.340	0.736	0.127	0.900
Math	0.946	0.351	0.774	0.444
Read	0.409	0.685	- 0.207	0.837
Listen	2.063	0.047**	1.936	0.062*
ACC 322	-0.463	0.646	0.118	0.907
OGPA	2.572	0.015**	1.855	0.073*
Adj. R <sup>2</sup>	0.441		0.317	
F	3.895	0.001***	2.702	0.012**

\*Significant at 10% level of significance using two tails test

\*\*Significant at 5% level of significance using two tails test

\*\*\*Significant at 1% level of significance using two tails test

**TABLE 6**  
**PARTIAL CORRELATION COEFFICIENTS OF**  
**SELECTED DISTRACTION FACTORS WITH STUDENT PERFORMANCE<sup>a</sup>**

*Part A*

*Part B*

Dependent Variable	Letter Grade		Overall Points %		Dependent Variable	Letter Grade		Overall Points %	
	Coef.	Sig.	Coef.	Sig.		Coef.	Sig.	Coef.	Sig.
<b>JHours</b>	.000	1.000	-.038	.795	<b>JHours</b>	-.072	.642	-.104	.501
<b>JType</b>	.184	.211	.150	.308	<b>JType</b>	.210	.171	.161	.298
<b>CLoad</b>	.030	.837	-.037	.802	<b>CLoad</b>	-.010	.950	-.080	.605

*a Part A: While controlling for the other two distraction factors.*

*Part B: While controlling for the other two distraction factors and prior actual ability factors (ACC 322 & OGPA)*