Factors Associated With Student Performance in Graduate Managerial Accounting: An Empirical Study at a US Commuter Public University

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The grade the student intends to earn in the course, and intention to take the CPA or the CMA exam are strong motivating factors for the students to perform well in the Graduate Managerial Accounting (GMA) course. The number of work hours, job type, and course load do not have any negative effect on student performance. Communication skills are significantly associated with student performance. The grade in the Accounting for Managers course and overall GPA are strong predictors of student performance in the GMA course. Neither age nor gender has any effect on student performance. Finally, the undergraduate major has a significant effect on student performance with the undergraduate accounting major taking the first place in leading to the best performance, followed by finance, other non-business major (surprisingly), with management and marketing tied for fourth place.

Keywords: motivation factors, distraction factors, self-perceived factors, prior ability factors, student performance, graduate managerial accounting

INTRODUCTION

Past research studies have explored multiple factors (e.g., academic performance, aptitude, prior exposure to mathematics, prior exposure to accounting, age, gender, motivation, effort, computer games and applications, online homework management packages, and other intervening variables) that have been found to be 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 indicates, few studies have investigated their impact on graduate accounting courses. The current study investigates the associations between selected motivation, distraction, self-perceived ability, prior ability, and other factors (specifically, age, gender, and undergraduate major) and student performance in a Graduate Managerial Accounting (GMA) course at a Midwestern public university in the United States.

As proxies for motivation, the authors used the grade the students intended to earn in the GMA course, and intention to take the Certified Public Accountant (CPA) or the Certified Management Accountant (CMA) examination. As proxies for distraction, the authors used 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 for the semester. The self-perceived ability used in the study is the students' oral and written communication skills. Students' prior abilities were measured by the actual grade earned in the College of Business and Management (COBM) 401 course (Accounting for Managers) which is a pre-requisite course to the GMA, Overall Grade Point Average (OGPA), and the quantitative background (measured by several math and business statistics courses.) The dependent variable, the student performance, was measured in two different ways as follows: the letter grade (hereafter referred to as 'Grade'), 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, self-perceived abilities (if accurately estimated) and prior abilities do indeed lead to better student performance.

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 suggestions for further research.

REVIEW OF PRIOR RESEARCH

Several studies have examined the association between various factors (e.g., general academic performance, aptitude, prior exposure to mathematics, prior exposure to accounting, motivation, effort, age, gender, and other intervening variables, including metacognition and active learning approaches) and student performance in college-level courses.

The OGPA has been used frequently as a proxy for prior academic performance and aptitude. An overwhelming majority of researchers, using data from various U.S. colleges, have found evidence supporting OGPA as a significant predictor of performance in accounting courses (Eckel & Johnson, 1983; Hicks & Richardson, 1984; Ingram & Peterson, 1987; Eskew & Faley, 1988; Doran et al., 1991; Maksy & Zheng, 2008; Maksy, 2012, 2014, 2017; Maksy & Wagaman, 2012, 2013, 2015; Alanzi, 2015; and Maksy & Rodriguez, 2017). In the finance discipline, researchers (Paulsen & Gentry, 1995; Chan et al., 1997; Sen et al., 1997; Didia & Hasnat, 1998; Marks, 1998; Van Ness et al., 2000; Johnson et al., 2002; Biktimirov & Klassen, 2008, and Maksy & Rezvanian, 2017) found OGPA as a strong predictor of grade performance in Financial Management courses required of all business majors. Gupta and Maksy (2014) found OGPA as a strong predictor of student performance in an Investments course, and Maksy and Rezvanian (2017) found the same in an introductory finance course. Wooten (1998) found that aptitude, as measured by the Scholastic Aptitude Test (SAT) score and grade history were 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). Some exceptions to these results include Gist et al. (1996) who, using a different measure (pre-university examination performance), found no significant association between academic performance and performance in accounting courses at the university level. Also, in Wales, Lane and Porch (2002) found that performance in introductory accounting can partially be explained by reference to factors in the students' pre-university background; however, the authors also found these factors as not significant as students progressed to upper level accounting courses.

Several studies have investigated the impact of prior exposure to mathematics and accounting on performance in college accounting courses and the results are inconclusive. A number of studies (Baldwin & Howe, 1982; Bergin, 1983; and Schroeder, 1986) found that performance was not significantly associated with prior exposure to high school accounting education, while other studies (Eskew & Faley, 1988; Bartlett, et al., 1993; Gul & Fong, 1993; Tho, 1994; and Rohde & Kavanagh, 1996) found that prior accounting knowledge, obtained through high school education, was a significant determinant of performance in college-level accounting courses. In addition, there is 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) suggested that students with strong mathematical backgrounds outperform students with weaker mathematical backgrounds. Seow et al. (2014) reported that prior academic achievement, admission interview, critical thinking, and mathematical aptitude were significantly associated with successful academic performance in an undergraduate accounting degree at a Singapore University. Alanzi and Alfraih (2017) found that accumulated quantitative knowledge has positive impact on academic performance in Cost Accounting; however, Gist et al. (1996) did not report the same results. Furthermore, Guney (2009) suggested that grades in secondary education mathematics are a very strong determinant of performance in accounting but only for non-accounting majors.

The majority of researchers have observed strong associations between student performance in introductory accounting and their performance in non-introductory accounting courses, but there are some exceptions. For example, Canlar (1986) found 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) found that the best predictor of academic performance in any one year is the performance in the same discipline in the previous year. Maksy and Zheng (2008), Maksy and Wagaman (2012, 2013, 2015), and Maksy and Rodriguez (2017) found that OGPA and the grade in Intermediate accounting II are strong predictors of student performance in Advanced accounting, Auditing, and Senior seminar in accounting courses. Gupta and Maksy (2014) reported that OGPA and grades in Financial accounting and Managerial accounting courses were strong predictors of student performance in an Investments course. However, an exception to this was Doran et al. (1991) who reported surprising and counterintuitive results that performance in the Introductory accounting course has a negative impact on performance in subsequent accounting courses.

Most prior studies about the influence of motivation or the combination of motivation and effort on student performance show positive effect. For example, Pascarella and Terenzini (1991) reported that motivation and effort, among other factors, significantly influence students' performance in college. Paulsen and Gentry (1995) reported 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. Wooten (1998) found that motivation significantly affects effort, which in turn significantly affects performance in an introductory accounting course. Lane and Porch (2002) suggested that other important factors like student motivation may explain student performance. Several studies involving different accounting courses have used the 'grade the student intends to earn in the course' as a proxy for motivation, showing a consistent pattern of positive association with student performance. Some of these accounting studies involved participants taking Advanced accounting (Maksy & Zheng, 2008; Maksy & Wagaman, 2015; Maksy, 2017), Intermediate accounting (Maksy, 2012, 2014), Auditing (Maksy & Zheng, 2008; Maksy & Wagaman, 2012; Maksy & Rodriguez, 2017), and Senior seminar in accounting (Maksy & Wagaman, 2013). Finance courses with students taking Introduction to finance (Maksy & Rezvanian, 2017), and Investments (Gupta & Maksy, 2014) also have shown similar results.

Chan et al. (2016) developed an educational computer program to enhance intrinsic motivation and performance in accounting courses. Their results showed higher intrinsic motivation than with the use of Blackboard and other traditional paper forms. Brown et al. (2016) aimed to assess student perceptions on the implementation of guided reading questions to motivate and enhance student reading and adequate participation in class discussions or other course areas. They found that student perception results demonstrated that the guided reading questions had a positive impact on student motivation, reading comprehension, effort level, and understanding of the material before attending class. Poh-Sun, and Suay-Peng (2016) used a mobile gaming app called Accounting Challenge (ACE) for learning accounting in a fun way, indicating that ACE won three international teaching awards. The ACE tool is free and allows students to learn accounting outside a classroom setting. The authors reported that the app received favorable reviews by users, and added that although the app was downloaded 23,230 times with users in 90 countries at the time of their study, further investigations seem appropriate to identify and substantiate its academic benefits. Everaert et al. (2017) used first-year undergraduates to explore *deep learning* and *surface learning* (precedents and consequences of learning approaches, respectively) with motivation as

precedent, and time spent and academic performance as consequences. They reported that accounting students showed a higher score for deep learning over surface learning that lead to higher academic performance. The results also indicated a positive association between high intrinsic motivation and extrinsic motivation, and deep learning.

Prior studies about the effect of effort per se on student performance show conflicting results. For example, using self-reported data, Didia and Hasnat (1998) presented rather 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 OGPA. Using self-reported data, Nofsinger and Petry (1999) found no significant association between effort and performance in a Principles of Finance course. Also, Biktimirov and Klassen (2008) found weak association between hits to course management system and grade in a finance course. In contrast, Johnson et al. (2002) utilized computerized quizzes and analyzed the effect of objectively measured effort on student performance in a Financial Management course. These authors showed that, after controlling for aptitude, ability, and gender, effort (as measured by attempts and log time) remains significant in explaining the differences in performance. In addition, Rich (2006) used students' homework preparedness and unpreparedness in class as a proxy for effort and non-effort. He found significant positive association for the former and negative association for the latter with exam percent. More recently, Gupta and Maksy (2014) studied the effect of several effort factors (number of course study hours, overall study hours, homework score, class attendance, and class participation) on student performance in an Investments course. They found the number of course study hours, homework score, and class attendance to have varied levels of significance (in some cases lack thereof) depending upon how student performance was measured under ANOVA, Pearson and Spearman correlations, and OLS regression – including controlling for certain variables as part of the analysis.

Several prior studies also investigated various factors that distract students and cause them to have low performance or withdraw from college altogether. The results of some of these studies are expected but the results of some other studies are not. For example, in the accounting area, Paisey and Paisey (2004), and Guney (2009) demonstrated that there is a clear positive association between attendance and academic performance in accounting courses. Paisey and Paisey (2004) also reported that the most frequently cited reason for not attending classes was students' participation in part-time employment. Lynn and Robinson-Backmon (2005) found a significant adverse association between employment status and learning outcomes in upper-division accounting courses. Tessema et al. (2014) reported that students who work 10 hours or less per week are more satisfied and have higher OGPAs than students who work more than 10 hours per week. Alanzi (2015) found significant association between class attendance, college experience, and student performance in a Cost Accounting course at a university in Kuwait. Fortin et al. (2016) investigated the reasons nontraditional students in several universities in Quebec, Canada, withdrew from undergraduate accounting programs. As expected, they found that the reasons include the following: returning to school after working for some time, enrollment in a non-first choice programs, dissatisfaction with program choice and courses, and low OGPA, the latter being the main reason for student withdrawal. Other factors found to influence withdrawal decisions were related to time management, and family responsibilities, especially for women. The authors suggested that students could benefit from university support that would enhance their learning strategies and improve student performance. Pavione et al. (2016) identified a number of factors influencing the process of teaching and learning according to accounting students in the state of Minas Gerais, Brazil. Those factors were teacher's didactics (how the teacher leads the class, interacts with students and provides for a learning environment), content structure of the course, desire to learn the subject (personal motivation), and library resources (institution support). The four highest scores related to low student performance were lack of interest, and lack of dedication outside the classroom (students), and does not intend to address the concerns of students, and not mastering the subject matter to be explained (instructors).

Chan, et al. (1997), on the other hand, found no significant association between performance in a Financial Management course, attendance, credit hours enrolled, and number of weekly work hours. Didia and Hasnat (1998) found strong positive association between number of credit hours enrolled in the

semester and course grades. Wooten (1998) found no significant association between work, family, and extra-curricular conflicts and students' performance in an introduction to accounting course. Van Ness et al. (2000) found no association between students' full-time or part-time status and grades in a Principles of Finance class. However, the authors found that students who are enrolled in an online class are more likely not to complete the course. This appears to be counter-intuitive 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. Rich (2006) reported significant negative association between class absences and being late to the class, and exam percent. Maksy and Zheng (2008), Maksy (2012, 2014, 2017), Gupta and Maksy (2014), Maksy and Wagaman (2012, 2013, 2015), Maksy & Rezvanian (2017), Maksy & Rodriguez (2017), and Maksy & Yoon (2019a and 2019b) found no significant negative association between the number of hours of work per week and student performance in several accounting, auditing, finance, and investment courses.

Age and gender are two demographic variables that received less attention than those factors discussed above, but most of the studies related to age and gender produced conflicting results. Some studies showed that younger students performed better than older ones but other studies showed opposite results. Also, some studies indicated that female students perform better than male students but other studies showed opposite results. For example, in the field of accounting, Bartlett et al. (1993) and Kohl and Kohl (1999) suggested that younger students have better performance, particularly at the senior university level. However, Schrouder and Rhodd (2013) reported that older and more experienced students perform better than younger and less experienced students in a Public Administration course. With respect to gender, Mutchler et al. (1987) found that female students score significantly higher than male students. Gracia and Jenkins (2003) pointed out a significant difference in favor of the performance of female students over male students in Wales. Almunals et al. (2014) reported that females perform better than males in the accounting major. They also found 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 (the higher the frequency the higher the performance). However, some studies indicated that male students perform better than female students, but the results are either insignificant (Lipe, 1989) or only hold true for introductory courses (Doran et al., 1991). Sen et al. (1997) showed that female students performed worse than male students in Principles of finance courses at two different mid-western U.S. universities. Garas and Hassan (2018) examined how technology-based assessment is affected by the gender in an introductory financial accounting course and found that males performed better than females on computer-based test and that females outperformed on paper-based test.

Most studies have shown that the age and gender of students have no effect on students' performance. For example, Chan et al. (1997), Didia and Hasnat (1998), and Van Ness et al. (2000) found no significant association between grade in an introductory finance course and gender or age of students. Alanzi (2015) found that gender, age, nationality, scores and majors in high school, grades in prerequisite courses, and OGPA in college have no significant association with student performance in Cost Accounting. Jenkins (1998), and Lane and Porch (2002) concluded that age is not a significant determinant of performance in Auditing and Management accounting courses. Tyson (1989) and Buckless et al. (1991) demonstrated that gender effect disappears after controlling for general academic ability. Henebry and Diamond (1998) and Johnson et al. (2002) also did not find any significant association between a finance principles course score and gender. However, Henebry and Diamond (1998) showed that 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. Gammie et al. (2003) found very little indication of performance differential between males and females throughout the degree program.

There has also been increased interest in studying the influence of intervening variables on student performance. Bartlett et al. (1993) concluded that very few of the educational, demographic or financial characteristics variables appear to have a significant influence on student performance in university accounting examinations. In recent years, several studies have shown that metacognition attributes have

positive effects on student 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. Paulsen and Gentry (1995) found that academic performance in a large introductory financial management class was significantly related to control over learning, test anxiety, self-efficacy, elaboration, organization and metacognition. Gracia and Jenkins (2003) observed that students who actively demonstrated commitment and self-responsibility towards their studies tended to do well in formal assessments. Lynn and Robinson-Backmon (2005) indicated that a student's self-assessment of course learning objectives is significantly and directly related to grade performance. Schleifer and Dull (2009) addressed metacognition in students and found a strong link between metacognitive attributes and academic performance. Lin and Songtao (2016) examined the impact of metacognitive awareness (measured by Learning Smart, an online learning tool supplemented with the textbook) on class performance in financial accounting courses and found that students with greater metacognitive awareness performed better. Tepper and Yourstone (2018) investigated the effect of self-efficacy as a non-cognitive predictor of student success in an introductory accounting class. Their results showed that students with similar ACT and GPA outperformed others owing to non-cognitive variables pertaining to self-efficacy, such as individual's perceived skill level and expected performance.

Several prior studies also investigated the effect of active learning versus passive learning approaches on student performance with the majority showing that active learning approaches have much more positive effect on student performance than passive learning. For example, Andres (2017) examined active learning using Kolb's experiential learning, Pintrich's student learning motivation, and cognitive load theories and found that active learning was a positive predictor of course grade, reducing the negative relationship between course difficulty on learning motivation and course grade. Dutra de Oliveira Neto et al. (2017) investigated the performance of students from a public university in Brazil that used the flipped classroom and found that it improved student performance and that students approved of it as an appropriate teaching strategy. Riley and Ward (2017) examined the effectiveness of active learning, cooperative active learning, and passive learning methods in an Accounting Information Systems course. Their results indicated that active learning enhance student performance, especially for those students who work individually. Wynn-Williams et al. (2016) examined deep and surface approaches to learning in a university Intermediate-level accounting class that used business cases in the group presentations. Their results supported the claim that students focus on what is required; hence, concluding that if deeper approaches to learning are desirable, assessments would likely need to reward such behavior. Fadol et al. (2018) examined the impact of three delivery modes (traditional, online, and flipped) on student performance in a management course in the Middle East. They found that both the online and flipped sections performed better than the traditional one and that flipped section performed better than the online one. Accessing online materials improved the performance in the online and flipped sections. Trout (2018) examined the effect of class format on student performance in the first accounting course. He found that students in the one-day-a week class showed higher grades than in the two-days-a-week class and spent more time on online homework since they might be better motivated to attend each class session.

While prior research has been largely inconclusive or replete with conflicting results, it is not the purpose of this study to resolve all those conflicts. The authors' objective in the current study is to provide additional insight on those areas in which there have been some general consensus. Since motivation and effort usually have been positively associated with student performance, the authors aimed to test whether some new selected motivation factors affect student performance in the GMA course. The current study also looked at several factors which are commonly viewed as possibly distracting students from performing well and tested whether they indeed are negatively affecting student performance. Furthermore, the current study investigated the impact of two specific measures of prior abilities on student performance and used them as control variables while testing for the association between motivation and distraction factors and student performance in the GMA course.

STUDY OBJECTIVES AND HYPOTHESES

The first objective of this study is to examine the association between two selected motivation factors (the grade the student intends to earn in the course, and the student's intention to take the CPA or the CMA examination), and the student's performance in the GMA course at a Midwestern public university in the United States. The authors hypothesize that there are positive and significant associations between those motivation factors and student performance. That is, students who intend to earn higher grades, and/or take the CPA or the CMA exam are motivated to perform well and do perform well in the course to achieve their intentions. Coe (2016) surveyed upper-level accounting students from six different academic institutions in Iowa and Illinois, about the several factors that may affect their intention to take the CPA exam as soon as they are eligible. Coe (2016) found the following factors with positive association: option to sit for the CPA exam after completing 120 credit hours of education versus 150 credit hours, self-efficacy, attractiveness of passing the CPA exam, perception of social support from family and friends, access to a role model who is a CPA, perceptions of psychological and functional support from faculty, and protean career attitude. In the current study, we asked students whether they intend to sit for the CPA or the CMA exam. We assumed that those who answered "yes" instead of "no" or "maybe" were motivated to gain some or all of the factors indicated by Coe (2016).

The second objective is to examine the association between three distraction factors (the student's number of working hours per week during the semester, the student's job type – if it is not related to accounting or business in general -- and the student's number of courses taken in the semester) and the student's performance in the GMA course. Intuitively, the higher the number of work hours per week, the less time the student will have to study for the course resulting in lower course grade. Furthermore, if the student's job is not related to accounting or business in general, the student's grade in the GMA course will be lower than if the student's job is related to one of these areas. Additionally, 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. In light of the above discussion, the authors hypothesize that if the student's number of work hours per week is higher, and/or the student's job is not related to accounting or business in general, and/or the number of courses taken in the semester is higher, there will be a significant negative association between these distraction factors and the student's performance in the GMA course. The potential exists for distraction factors to offset each other, thereby cancelling out any single factor 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 authors will test the effect of each distraction factor on student performance while controlling for the other two factors. The authors will also test the effect of each distraction factor on student performance while controlling for the other two factors as well as the prior ability factors.

The third objective is to examine the association between students' self-perceived oral and written communication skills and their performance in the GMA course. The authors hypothesize that if the students do not over estimate their oral and written communication skills there should be positive and significant associations between communication skills and student performance because the course includes written assignments and some oral presentations. Thus, the hypothesis is that students who have high level of communication skills will earn higher grades in the GMA course, and vice versa.

The fourth objective is to examine the association between students' performance in the GMA course and their grade in the pre-requisite Accounting for Managers (or an equivalent) course, their overall GPA (OGPA), and quantitative background. Based on the results of several prior studies, the authors hypothesize 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 Accounting for Managers (or an equivalent) course, or have high OGPAs, or have high quantitative background (by having taken more than two of the following courses: Finite Math, Business Calculus, Business Statistics, and College Math or Algebra) will earn higher grades in the GMA course, and vice versa.

The fifth objective is to examine the association between students' performance in the GMA course and their age, gender, and undergraduate major. Based on the results of most prior studies, the authors do not expect any significant association between age or gender and student performance in the GMA course. The authors included these two variables to empirically show that the results of this study are in line with the results of most prior studies. The authors believe that the undergraduate major will have a significant effect on student performance because the GMA course is an accounting course that covers various managerial accounting topics and some finance topics as well. So, the authors believe that students whose undergraduate major is accounting or finance will perform better in this course than students whose undergraduate major is marketing, management, business administration, or other non-business major.

STUDY DEPENDENT VARIABLES

In addition to the 12 independent variables described under the study objectives above, the study uses two dependent variables. The authors used the letter grade in the course (A, B, C. etc.) as the student performance dependent variable; however, 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 authors also used 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 five categories of factors) in APPENDIX A. To prevent redundancy, each hypothesis is presented in the alternate form only.

RESEARCH METHODOLOGY

Survey Instrument

The authors modified a list of survey questions, from Ingram et al. (2002) to include, besides the study variables, some demographic and other information.

Study Sample

The authors were able to collect the data on the survey instrument from 130 students enrolled in five sections of the Graduate Managerial Accounting course offered over several semesters ending in summer 2019 at a major public commuter university in Chicago. Since all five sections were taught by the same instructor using the same textbook, instructor's and textbook's effects on the results should not be a problem. The study school serves nearly 9,000 students - 7,000 undergraduates, and 2,000 graduates. The College of Business and Management enrolls approximately 1,600 students.

The authors coded and entered the data on two different Excel spreadsheets which were later matched and actions taken to solve any discrepancies. This process virtually eliminated any possible data entry errors.

Data Analysis

To test the formulated hypotheses in APPENDIX A, the researchers used a one-way analysis of variance (ANOVA), Pearson and Spearman correlation coefficients, partial correlations, and ordinary least square (OLS) linear regressions.

STUDY RESULTS

Table 1 presents descriptive statistics (e.g., minimum and maximum value, mean, and standard deviation) for each of the 12 independent variables of the study as well as the two dependent variables (Grade and Points). Table 1 shows an average grade in the GMA course of 3.29 which is somewhat lower than the average Grade of 3.45 in the COBM 401 course (a pre-requisite for the GMA course) and also slightly lower than the OGPA of 3.41, and significantly lower than the average Intended Grade of 3.75. In comparison, Didia and Hasnat (1998) study of performance determinants in a finance course reported a Financial Management course grade of only 1.85, GPA in a pre-requisite course of 2.71, and OGPA of 2.61. It is interesting to note that the difference of 0.16 between the average course letter grade and the average COBM pre-requisite course grade is much smaller than the comparable difference of 0.86 reported by Didia and Hasnat (1998). Also, the difference of 0.12 between the average course letter grade and OGPA is much lower than the difference of 0.76 reported by Didia and Hasnat (1998). No comparable data is available in the literature for the difference between the average grade in the course and the average Intended Grade.

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

Motivation Factors Associated With Student Performance

As Tables 2, 3, and 5 indicate, of the two motivation variables discussed in H_1 and H_2, IG is significantly associated (at the .01 level of significance) with student performance (however defined) based on ANOVA, Pearson and Spearman correlations, and regression tests. Furthermore, as Table 4 indicates, when the authors controlled for the prior ability factors (GPA, COBM 401 Grade, and Quant Background) the significant associations between IG and student performance shown under Pearson and Spearman correlations remained significant at the .01 level.

As Tables 2, and 3 indicate, Intention to take the CPA or the CMA exam is also significantly associated (at the .01 level) with student performance, however defined. As Table 5 indicates, Intention to take the CPA or the CMA exam is also significantly associated with student performance under the regression test but only when performance is defined as Grade and the association significance level was lower at .05. When the authors controlled for the prior ability factors, as Table 4 indicates, the significant association between CPA/CMA remained significant at the .01 level when performance was defined as grade, but was lowered to the .05 level when performance was defined as points.

In light of the above analysis the authors can generally state that H_1 and H_2 have been supported. The above results are in agreement with some prior studies (Maksy & Zheng, 2008; Gupta & Maksy, 2014; and Maksy, 2017) that reported significant association between IG and student performance, even after controlling for the prior ability factors. The significant associations between intention to take the CPA/CMA exam and student performance observed in this study are not consistent with the results reported by Maksy (2012, 2017), Gupta and Maksy (2014), and Maksy and Rodriguez (2017) who found no significant associations between this variable and student performance.

Distraction Factors Associated With Student Performance

As Table 3 indicates, the number of hours of work has a significant negative association (at .01) with student performance, however defined, under the Pearson and Spearman correlations with one exception: when performance was defined as Grade, the negative association was at .10 level under the Spearman test. However, when the authors controlled for the prior ability factors (GPA, COBM 401 Grade, and Quant Background), as Table 4 indicates, the significant negative association between work hours and student performance totally disappeared. Furthermore, the ANOVA test (in Table 2) and the regression test (in Table 5) showed no significant association whatsoever between work hours and student performance, however defined. Also, when the authors controlled for the two other distraction factors (Work Type and Course Load) as shown in Table 6, Panel A, there was a significant negative association (at .01) between work hours and student performance, however defined. However, when the authors

controlled for the two other distraction factors as well as the prior ability factors, as shown in Table 6, Panel B, the significant negative association between work hours and student performance, however defined, totally disappeared. From the above discussion, the authors can generally state that the number of hours of work per se has no negative effect on student performance. There is an indication that students with higher (lower) prior abilities have higher (lower) performance in the GMA course regardless of the number of hours of work per week, type of work, or course load.

Work Type (if it is accounting or business-related) is significantly associated with student performance, at the .05 level of significance when performance is defined as Grade and at the .10 level when performance is defined as Points, under the ANOVA test. It is also significantly (*but negatively*) associated with student performance, at the .10 level of significance when performance is defined as Grade and at the .05 level when performance is defined as Points, under the regression test. Pearson and Spearman correlations tests did not show any significant associations between Work Type and student performance. However, when the authors controlled for the two other distraction factors (Work Hours and Course Load) as shown in Table 6, Panel A, there was a significant positive association (at the .05 level when performance was defined as Grade and at the .10 level when performance was defined as Points) between work type and student performance. Nonetheless, when the authors controlled for the two other distraction factors as well as the prior ability factors, as shown in Table 6, Panel B, the significant positive association between Work Type and student performance, however defined, totally disappeared.

Because the ANOVA test does not indicate whether the significant association is positive or negative, the authors ran a cross-tabulation between Work Type and Grade to find out if the association is negative or positive. According to this cross-tabulation (shown in Table 7 and its bar chart), the association seems to be positive not negative. For example, of the 63 students (or 50.4% of students responding to this question), who said their work is business-related, 27 (or 42.9% of them) got an A in the course, 24 (or 38.1%) got a B, and 11 (or 17.5%) got a C. If we look at the 46 students (or 36.8% of students responding to this question) who reported that their work is non-business-related, we find that 18 (or only 39.1%) got an A, 17 (or 37.0%) got a B, and 11 (or 23.9%) got a C. Furthermore, while the number of students reporting that their work is accounting-related is relatively small (only 13 or 10.4 % of those responding to this question), 10 students (or a whopping 76.9%) got an A, the remaining 3 students (or 23.1%) got a B, and no one got a C. Moreover, if we look at Pearson and Spearman correlation tests in Table 3, we find that the associations between Work Type and student performance are also positive albeit not significant. An interesting question may be posed here: if that is the case, why does the regression test show that the associations between Work Type and student performance are negative? It is possible that this occurred because students who do not work at all, their type of work was coded as zero (versus 1 for non-business-related, 2 for business-related, and 3 for accounting-related) and, even though the number of those students was very small (only three or 2.4% of the sample) all of them earned an A in the course.

Course Load is significantly associated (at the 05 level of significance) with student performance (however defined) but only under the ANOVA test. None of the other three statistical tests showed any significant association between Course load and student performance. Because the ANOVA test does not indicate whether the significant association is positive or negative, the authors ran a cross tabulation between Course Load and Grade to find out if the association is negative or positive. According to this Cross-tabulation (shown in Table 8 and its bar chart) there seems to be some negative association. For example, of the 63 students (48.5% of the sample), who are carrying one course, 30 (or 47.6% of them) got an A in the course, 23 (or 36.5%) got a B, and 10 (or 15.9%) got a C. If we look at the 46 students (or 35.4% of the sample) who are carrying two courses, we find that 19 (or only 41%) got an A, 18 (or 39%) got a B, and 9 (or 20%) got a C. While higher percentages of the students carrying three or four courses earned A's than the percentages of the students carrying only one or two courses, the number of students carrying three or four courses is relatively small compared to the number of students carrying only one or two courses. The number of students carrying three courses is only 12 students or 9.2% of the sample, and the number of students carrying four courses is only 8 students or 6.2% of the sample.

In light of the above analysis the authors can generally state that the three hypotheses H_3 to H_5 are somewhat supported. There seem to be weak to moderate evidence that the higher the work hours or

course load the lower the performance and weak evidence (under only one test) that student whose work type is non-business or accounting-related perform worse that students whose work type is business or accounting-related.

The results observed in this study, indicating no significant negative association between Work Hours and student performance, when prior abilities are controlled for, are in agreement with some prior studies (Maksy & Zheng, 2008; Gupta & Maksy, 2014; Maksy 2017; Maksy & Rezvanian, 2017; Maksy & Rodriguez, 2017, and Maksy & Yoon 2019a and 2019b). The result obtained in this study that there is significant negative association between Work Type (when it is not related to business or accounting) and student performance is not in agreement with the results reported by Maksy and Zheng (2008), Maksy (2012, 2017), Gupta and Maksy (2014), Maksy and Rodriguez (2017), and Maksy and Yoon (2019a) who found no association whatsoever between Work Type and student performance.

Self-perceived Ability Factors Associated With Student Performance

As Tables 2, 3 and 5 indicate, there is a significant positive association (at the .01 level) between self-perceived communication skills level and student performance, however defined. This significant association remained significant at .01 even after the authors controlled for the prior ability factors. Thus, the authors can state that H_6 has been supported.

Prior Actual Ability (Control) Factors Associated With Student Performance

As Tables 2, 3 and 5 indicate, there is a significant positive association (at the .01 level) between two of the three prior ability factors (GPA and Grade in COBM 401) and student performance, with one caveat: when performance was defined as Grade, the level of significance of the association between GPA and student performance was lowered to .05 under the ANOVA test (Table 2) and the association totally disappeared under the regression test (Table 5). The third prior ability factor (Quantitative Background) was significantly associated with student performance, but only under the ANOVA test, and also the level of significance was only .05 when performance was defined as points and only .10 when performance was defined as Grade. Because the ANOVA test does not indicate whether the significant association is positive or negative, the authors ran a cross tabulation between Quantitative Background and Grade to find out if the association is negative or positive. According to this Cross-tabulation (shown in Table 9 and its bar chart) the association is positive. Students who took four or three out of four quantitative courses (Business Calculus, Finite Math, Business Statistics, and College Math or Algebra) seem to have earned significantly higher grades in the GMA course than students who took less than three out of those four courses.

In light of the above discussion, the authors can generally state that hypotheses H_7 and H_8 are supported and H_9 is somewhat supported (since only one out of four tests showed significant association).

The strong significant associations between the grade in the prerequisite course, as well as OGPA and student performance in this study, are consistent with the results reported by Maksy and Zheng (2008), Maksy (2012, 2017), Gupta and Maksy (2014), Maksy and Rodriguez (2017), Maksy and Rezvanian (2017), and Maksy and Yoon (2019a and 2019b).

Other Factors (Age, Gender, and Major) Associated With Student Performance

As Tables 2, 3 and 5 indicate, there are significant associations (at the .05 level, except under the ANOVA test which is only at the .10 level) between student age and student performance but only when performance is defined as Grade. Because the results shown in Tables 2, 3, and 5 indicate significant association between age and student performance, but they do not show which age group (older or younger students) perform better than the other, the authors ran a cross-tabulation between Age and Grade, as shown in Table 10 and its bar chart. A look at that Table and its bar chart indicates that older students perform significantly better than younger students. However, when the authors controlled for the prior ability factors, as Table 4 indicates, the significant association between age and student performance totally disappeared. While Table 10 and its bar chart indicates that older students perform significantly better than younger students in the GMA course, the fact that these differences disappear, when the prior

ability factors are controlled for, tells us that the prior abilities are driving the grades in the GMA course. In other words, when we take all students who have the same grades in COB 401(or an equivalent course) and about the same OGPA, we find that younger students perform about the same as older students. Since the authors' hypothesis was that there is no significant difference in the performance of younger and older students, the research results lend support to H_{10}.

None of the tests in Tables 2 to 5 show any significant association between gender and student performance, however defined. This lends support to H_{11}.

The statistical results show significant associations between the student's undergraduate major and the student's performance, however defined, in the GMA course. The associations are significant at the .05 level under the ANOVA (Table 2) and Spearman correlations (Table 3) and at the .01 level under the Pearson correlations (Table 3). Also, when the authors controlled for the prior ability factors, as indicated in Table 4, the Pearson correlations remained significant at .01. The regression test (in Table 5) did not show any significant association between the undergraduate major and student performance. This is probably due to the fact that the regression test is a multivariate test and there were five or six other variables (besides the undergraduate major) that were significantly associated with student performance, making the explanatory contribution by the undergraduate major to student performance not significant.

To identify which major (accounting, finance, management, marketing, business administration, or other non-business major) leads to better performance in the GMA course, the authors ran a cross-tabulation between undergraduate major and grade as shown in Table 11 and its bar chart. A closer look at that Table and its bar chart indicates that the order of the undergraduate majors leading to better performance in the GMA course is as follows: accounting, finance, other non-business, management and marketing (tied for fourth place), and business administration. That is, students majoring in accounting perform better in the GMA course than students majoring in finance and finance majors perform better than other non-business majors who perform better than management and marketing majors who perform better than general business administration majors. Since the authors' hypothesis was that the major will have a significant effect on student performance, the research results lend support to H_{12}.

The results observed in this study, indicating no significant association between Age or Gender and student performance, when prior abilities are controlled for, are in agreement with some prior studies (Maksy & Zheng, 2008; Gupta & Maksy, 2014; Maksy 2017; Maksy & Rezvanian, 2017; Maksy & Rodriguez, 2017, and Maksy & Yoon 2019b). The result obtained in this study that there is a significant association between major and student performance is not in agreement with the results reported by Maksy and Yoon (2019b) who, after controlling for prior ability factors, found no association between major and student performance in the management information systems course.

CONCLUSIONS AND RECOMMENDATIONS

One general conclusion of the study is that motivated students perform significantly better in the GMA course than non-motivated students. This is the case whether motivation is measured by the grade the student intends to earn in the course, or by intention to sit for the CPA or the CMA exam.

In light of the above general conclusion, the authors recommend that accounting faculty should encourage their students to plan to earn higher grades and make effort to achieve their plans. Accounting faculty should also encourage their students to plan to sit for the CPA or the CMA exam by pinpointing the advantages that can accrue to the students if they obtain a CPA or CMA certificate. Accounting faculty can mention to their students that research has shown strong association between intention to take the CPA or the CMA exam and student performance in the GMA course.

Another general conclusion from the statistical tests of this study is that the distraction variables used in the study (i.e., number of hours of work per week, working in non-accounting, or non-business-related jobs, and number of courses taken in the semester) have no significant *negative* associations with student performance.

In light of the above general conclusion, the authors recommend that accounting faculty need not encourage their students to work as fewer hours per week as possible to earn high grades in the GMA

course. Furthermore, if students have to work a significant number of hours anyway to support their families, accounting faculty need not stress to the students that they must work in accounting-related or business-related jobs. In addition, accounting faculty need not encourage those students to take as fewer courses per semester as possible to earn high grades in the GMA course. Accounting faculty may advise their students who plan to take higher than average course loads to make sure that they manage their time effectively. Finally, 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 jobs that are non-accounting or non-business related, or too many courses taken per semester to pinpoint to those students.

As expected, a third general conclusion of the study is that students with good communication skills earn high grades in the GMA course. Specifically, the study provides evidence that there is a strong significant association between students' self-perceived communication skills and their performance in the GMA course.

In light of this general conclusion, the authors recommend that accounting faculty encourage their students to improve both their oral and written communication skills by emphasizing that research confirms that students with very good communication skills earn high grades in GMA course. The authors recognize that many faculty members may already be encouraging their students to do just that; thus, these recommendations are primarily for faculty members who may not be encouraging their students in that regard.

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 GMA course. Specifically, the study provides evidence that there is a strong significant association between students' grades in the Accounting for Managers (or an equivalent) course and OGPA and their performance in the GMA course. There is also evidence (albeit weak) that prior quantitative background help students to improve their grades in the GMA course.

In light of this general conclusion, the authors recommend that accounting faculty encourage their students to study hard to earn high grades in all courses (including the Accounting for Managers) to improve their GPA by emphasizing that research shows that students with high OGPA tend to earn high grades in the GMA course. The authors recognize that many faculty members may already be encouraging their students to do just that; thus, these recommendations are primarily for faculty members who may not be encouraging their students in that regard.

As expected, and as shown in most prior studies with respect to other courses, a fifth general conclusion of the study is that students' age and gender have no significant associations with student performance. However, students' undergraduate major has significant association with student performance in the GMA course with students whose undergraduate major is accounting or finance having better performance than students whose undergraduate major is in other areas.

In light of this general conclusion, the authors recommend that accounting faculty encourage their students whose major is not accounting or finance to study harder or review a textbook in undergraduate managerial accounting if they want to earn higher grades in the GMA course.

STUDY LIMITATIONS AND SUGGESTIONS FOR FURTHER RESEARCH

Like most studies, this study is subject to some limitations. One such limitation pertains to the subjectivity embedded in the self-reported factors - Intended grade, and Intention to take the CPA or the CMA exam - which are exposed to possible students' bias. Another limitation of this study is that the school is a public (state-supported) university; therefore, conclusions reached may not be applicable to private schools. A suggestion in this area is to replicate the study at a private college or university in order to compare and to contrast the results, and thus, to add to the literature. A third limitation is that the study school is a commuter university and, therefore, conclusions reached may not be applicable to residential schools. A recommendation for future research is to replicate the study at a residential college or university to determine whether the results will be the same or will be different. A fourth limitation of the

study is that the study sample is somewhat small in light of the number of independent variables. A recommendation for future research is to replicate the study using a larger sample.

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APPENDIX A

FORMAL STATEMENTS OF THE STUDY HYPOTHESES

Motivation Factors

H_1: There is a significant positive association between the grade the student intends to earn in the GMA course and the student's performance in that course.

H_2: There is a significant positive association between the student's intention to take the CPA or the CMA exam and the student's performance in the GMA course.

Distraction Factors

H_3: There is a significant negative association between the student's average number of hours of work per week and the student's performance in the GMA course.

H_4: There is a significant negative association between the student's job type (if it is not related accounting, or business in general) and the student's performance in GMA course.

H_5: There is a significant negative association between the number of semester courses the student is taking and the student's performance in the GMA course.

Self-Perceived Ability Factors

H_6: There is a significant positive association between the student's communication skills level and the student's performance in the GMA course.

Prior Ability Factors

H_7: There is a significant positive association between the grade the student earned in the COBM 401 (Accounting for Managers) course or other equivalent accounting course and the student's performance in the GMA course.

H_8: There is a significant positive association between the student's Overall GPA and the student's performance in the GMA course.

H_9: There is a significant positive association between the student's Quantitative Background and the student's performance in the GMA course.

Other Factors (Age, Gender, and Undergraduate Major)

H_{10}: There is no significant association between the student's age and the student's performance in the GMA course.

H_{11}: There is no significant association between the student's gender and the student's performance in the GMA course.

H_{12}: There is a significant positive association between the student's undergraduate major and the student's performance in the GMA course.

APPENDIX B

TABLE 1
DESCRIPTIVE STATISTICS OF THE STUDY VARIABLES

	N	Minimum	Maximum	Mean	Std. Deviation
Letter Grade[1]	130	1	4	3.29	.772
Points (in %)	130	58	100	84.77	9.628
Intended Grade[2]	130	3	4	3.75	.432
CPA/CMA[3]	130	0	1	0.19	.396
Work Hours	130	0	70	37.76	13.680
Work Type[4]	130	1	3	1.69	.689
Course Load	130	1	5	1.75	.916
Communication Skill[5]	130	1	4	3.30	.733
GPA (out of 4.00)	130	2.75	4.00	3.41	.328
COBM 401 Grade[1]	130	2	4	3.45	.660
Quant Background[6]	130	0	4	2.53	1.246
Age[7]	130	1	3	2.39	.721
Gender[8]	130	1	2	1.64	.482
Undergraduate Major[9]	130	1	6	2.53	1.950

[1] A = 4.00; B = 3.00; C = 2.00; D = 1.00
[2] A = 4.00; B = 3.00; C = 2.00
[3] No = 0; Yes = 1
[4] Nonbusiness-related = 1; Business-related = 2; Accounting-related = 3
[5] Poor = 1; Average = 2; Good = 3; Very good = 4
[6] Number of Quant courses taken: 0 - 4
[7] 20-25 years = 1; 26-30 years = 2; Over 30 = 3
[8] Female = 1; Male = 2
[9] Other Non-business major = 1; Business Administration = 2; Marketing = 3
Management = 4; Finance = 5; Accounting = 6

TABLE 2
ONE-WAY ANALYSIS OF VARIANCE
(All numbers are for Between Groups Only)

		Dependent Variables			
		Letter Grade		Overall Points %	
Independent Variables	**DF**	**F Value**	**Sig.**	**F Value**	**Sig.**
Intended Grade	1/129	86.544	0.000***	80.401	0.000***
CPA/CMA	1/129	20.670	0.000***	17.348	0.005***
Work Hours	18/129	1.096	0.366	1.406	0.143
Work Type	3/124	3.279	0.023**	2.467	0.065*
Course Load	4/129	3.253	0.000***	3.304	0.013**
Comm Skill	3/129	33.528	0.020**	32.734	0.000***
GPA	60/129	1.528	0.045**	2.055	0.002***
COBM 401 Grade	2/129	50.891	0.000***	51.845	0.000***
Quant Background	4/129	2.150	0.078*	2.941	0.023**
Age	2/129	2.689	0.072*	1.451	0.238
Gender	1/129	0.780	0.379	2.393	0.124
Undergraduate Major	5/129	2.486	0.035**	2.805	0.020**

* 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 [a]

	Letter Grade	Points	IG	CPA/ CMA	Work Hrs	Work Type	C Load	Comm Skill	GPA	401 Grade	Quant BkG	Age	Gender	UG Major
Letter Gr		.932***	.635***	.373***	-.236***	.115	-.051	.638***	.457***	.665***	.063	.196**	.078	.257***
Points	.916***		.621***	.345***	-.272***	.086	.040	.646***	.495***	.669***	.063	.141	.135	.264***
IG	.593***	.555***		.234***	-.207**	.107	-.037	.382***	.397***	.476***	-.058	.138	.090	.239***
CPA/CMA	.390***	.370***	.234***		-.100	.370***	.046	.227***	.266***	.257***	.247***	.032	-.080	.671***
Work Hrs	-.170*	-.237***	-.182**	-.087		.286***	-.167*	-.117	-.240***	-.273***	.111	.069	-.044	.068
Work Type	.121	.079	.105	.354***	.165*		.081	.257***	.116	.068	.123	.042	-.074	.419***
C Load	.005	.131	.005	.091	-.105	.077		-.028	-.049	-.045	.095	-.134	.043	.074
Comm Skill	.579***	.567***	.332***	.220**	-.124	.253***	-.033		.237***	.453***	.240***	-.019	.068	.246***
GPA	.438***	.482***	.384***	.255***	-.169*	.113	-.053	.201**		.451***	.060	.227***	-.085	.183**
401 Grade	.640***	.638***	.458***	.259***	-.220**	.041	-.029	.386***	.461***		-.050	.209**	.081	.016
Quant BkG	.070	.082	-.041	.250***	.032	.104	.152*	.254***	.077	-.030		-.035	.128	.374***
Age	.176**	.113	.143	.002	.072	.023	-.068	-.029	.215**	.168*	-.063		.010	.005
Gender	.084	.152*	.090	-.080	-.002	-.081	-.003	.096	-.079	.099	.120	.006		-.009
UG Major	.209**	.218**	.192**	.602***	.047	.400***	.132	.239***	.151*	-.070	.420***	.006	.003	

[a] 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 GPA, COBM 401 Grade, and Quant Background)

	Letter Grade	Points	IG	CPA/ CMA	Work Hrs	Work Type	C Load	Comm Skill	Age	Gender	UG Major
Letter Gr		.874***	.469***	.241***	-.052	.063	-.045	.507***	.073	.040	.290***
Points	.874***		.435***	.181**	-.085	.019	.090	.531***	-.034	.133	.287***
IG	.469***	.435***		.120	-.052	.073	-.011	.242***	.013	.103	.277***
CPA/CMA	.241***	.181**	.120	¤	-.064	.341***	.060	.053	-.069	-.137	.642***
Work Hrs	-.052	-.085	-.052	-.064		.320***	-.140	.000	.127	-.071	.059
Work Type	.063	.019	.073	.341***	.320***		.078	.230**	.019	-.081	-.396***
C Load	-.045	.090	-.011	.060	-.140	.078		-.041	-.094	.023	.070
Comm Skill	.507***	.531***	.242***	.053	.000	.230**	-.041		-.122	.006	.181**
Age	.073	-.034	.013	-.069	.127	.019	-.094	-.122		.029	-.043
Gender	.040	.133	.103	-.137	-.071	-.081	.023	.006	.029		-.043
UG Major	.290***	.287***	.277***	.642***	.059	-.396***	.070	.181**	-.043	-.043	

* 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 130 Observations)

Independent Variables	Dependent Variables			
	Letter Grade		Overall Points %	
	t Coeff.	Sig.	t Coeff.	Sig.
Constant	-3.064	0.003***	2.179	0.031**
IG	4.335	0.000***	3.635	0.000***
CPA/CMA	2.252	0.026**	1.363	0.176
Work Hours	0.137	0.892	0.215	0.830
Work Type	-1.955	0.053*	-2.545	0.012**
Course Load	-0.164	0.870	1.647	0.102
Comm Skill	6.142	0.000***	6.606	0.000***
GPA	1.410	0.161	2.944	0.004***
COBM 401 Grade	3.614	0.000***	3.829	0.000***
Quant Background	-0.867	0.388	-1.510	0.134
Age	1.992	0.049**	0.662	0.509
Gender	0.261	0.795	1.473	0.143
Undergraduate Major	0.519	0.605	1.232	0.221
Adj. R^2	.682		.694	
F	23.176	0.000***	24.424	.000***

* 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

Part A:

Dependent Variable	Letter Grade		Overall Points %	
Distraction Factor	Coef.	Sig.	Coef.	Sig.
Work Hrs	-.258	.004***	-.264	.003***
Work Type	.197	.029**	.164	.070*
Course Load	-.125	.169	-.027	.767

Part B:

Dependent Variable	Letter Grade		Overall Points %	
Distraction Factor	Coef.	Sig.	Coef.	Sig.
Work Hrs	-.086	.351	-.082	.371
Work Type	.091	.320	.039	.671
Course Load	-.064	.485	.073	.426

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 (GPA, COBM 401 Grade, and Quant Background)
* 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 7
GRADE * WORK TYPE CROSS-TABULATION

Student Count

		Work Type				Total
		Do not work	Non-business-related	Business-related	Accounting -related	
Grade	D	0	0	1	0	1
	C	0	11	11	0	22
	B	0	17	24	3	44
	A	3	18	27	10	58
Total		3	46	63	13	125

BAR CHART

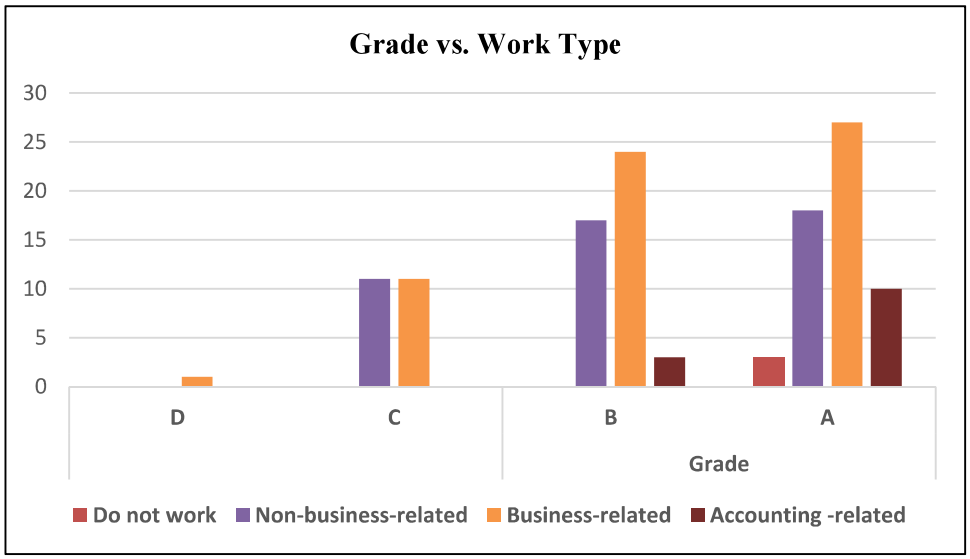

TABLE 8
GRADE * COURSE LOAD CROSS-TABULATION

Student Count

		Course Load					Total
		1	2	3	4	5	
Grade	D	0	0	0	0	1	1
	C	10	9	1	2	0	22
	B	23	18	2	2	0	45
	A	30	19	9	4	0	62
Total		63	46	12	8	1	130

BAR CHART

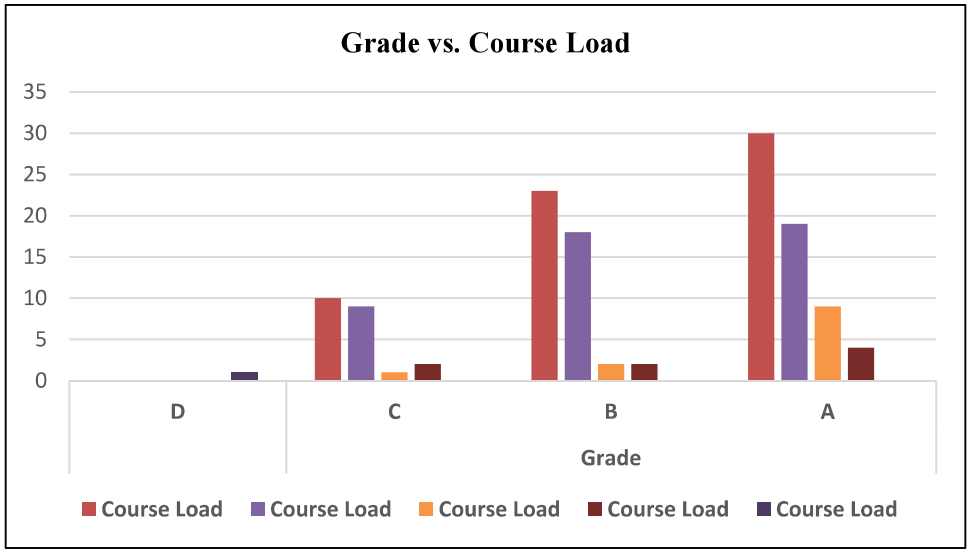

TABLE 9
GRADE * QUANTITATIVE BACKGROUND CROSS-TABULATION

Student Count

		Quantitative Background*					Total
		0	1	2	3	4	
Grade	D	0	0	1	0	0	1
	C	1	4	11	1	5	22
	B	3	4	12	11	15	45
	A	7	5	16	16	18	62
Total		11	13	40	28	38	130

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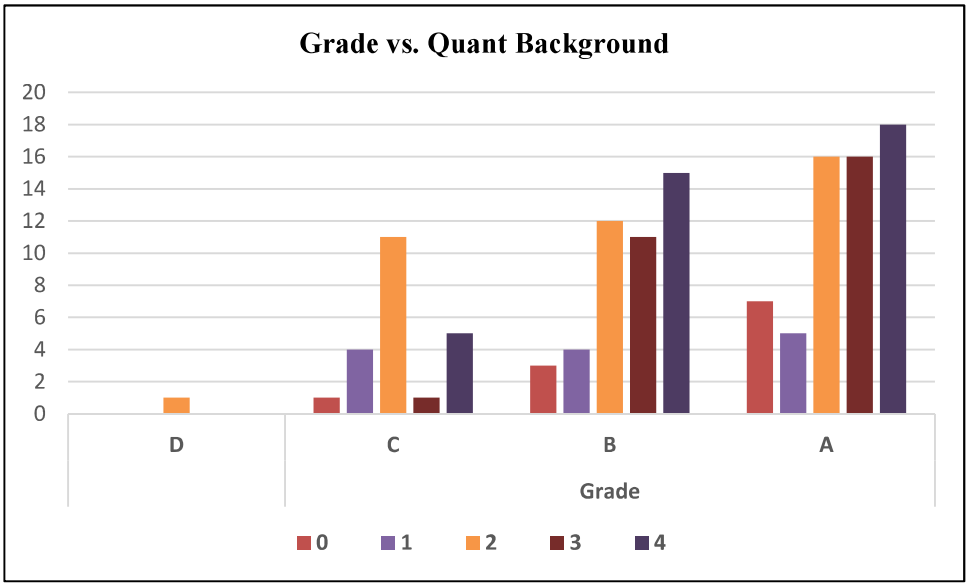

* Number of Quantitative courses taken: 0 - 4

TABLE 10
GRADE * AGE CROSS-TABULATION

Student Count

		Age			Total
		20-25 years	26-30 years	Over 30 years	
Grade	D	1	0	0	1
	C	4	9	9	22
	B	8	14	23	45
	A	5	20	37	62
Total		18	43	69	130

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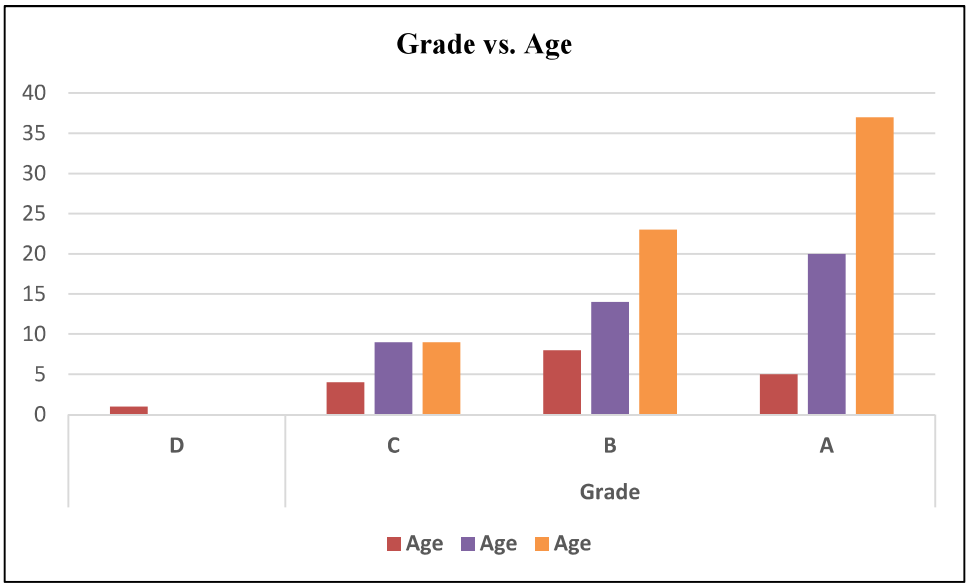

TABLE 11
GRADE * UNDERGRADUATE MAJOR CROSS-TABULATION

Count

		Undergraduate Major						Total
		Other non-business	Business administration	Marketing	Management	Finance	Accounting	
Grade	D	1	0	0	0	0	0	1
	C	16	3	1	2	0	0	22
	B	22	5	3	6	5	4	45
	A	31	4	2	4	6	15	62
Total		70	12	6	12	11	19	130

BAR CHART