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Antecedents to Students' Performance in MBA Programs

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Antecedents to Students' Performance in MBA Programs: A Literature Review of Antecedents

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Antecedents to Students' Performance in MBA Programs: A Literature Review

ABSTRACT.

Graduate schools of business use several criteria for admitting applicants into their program with the intent of weaning out those who are unlikely to succeed in their MBA program. It is important to select promising students who will succeed in the program because successful completion of the MBA and immediate job placement directly impacts the reputation of the business school. Standardized tests like GMAT/GRE, undergraduate grade point average (UGPA), the length and quality of work experience etc. are some of the factors that admission committees consider before making admission decisions. The literature review suggests that GMAT scores and UGPA are the good predictors of MBA student performance in terms of Graduate GPA (GGPA). However, these two factors do not completely explain the variation in MBA student performance; therefore, other factors such as work experience, internal-motivation, language efficiency etc. should also be considered by graduate schools before making admission decisions.

Keywords: admission factors; MBA; EMBA; Graduate Management Admission Test; GMAT GPA; GRE; master of business administration; graduate student success; performance; work experience.

Introduction: A Brief History of the MBA Education

Harvard University started the first business program in the US in 1908 for college graduates. In 1910, only 110 MBA degrees were awarded (Herrington, 2010). M.S. and M.A. degrees in business were more popular in the first part of 20th century, but the MBA degree started to substitute them after 1950s. MBA programs showed greatest growth in between 1950 and 1975 in the US, from a limited number in 1950 to over 500 MBA programs by 1975 (Herrington, 2010). According to National Center for Education (2009), approximately 156,000 Master degrees in business were awarded in 2007-08 in the US second only to Master`s degrees in Education in terms of number of students.

833 different colleges or universities in the US offered 923 different full-time or part-time traditional MBA programs as of fall 2006. This number does not include Executive MBA programs which often follow a non-traditional format (Herrington, 2010). Because the traditional MBA program is reaching market saturation, an increasing number of institutions started to offer Executive and other special MBA programs delivered at extended sites with different formats. There are several trends, which will affect the future of MBA education (McDougal, Smith & Acito 2007). The number of students completing MBA degree on a part-time basis is increasing while online delivery of the program is growing. Competitive MBA programs have increased internationally, and the number of international students seeking MBA degree in the US is decreasing. Holding an MBA degree allows students to differentiate themselves among a crowded graduate pool. One way business schools help support such differentiation is by maintaining certain standards for admission into their MBA programs.

Admission Factors and Predicting GGPA

MBA programs seek to measure the performance of their graduates. The easiest and most accessible of performance measures is the Graduate GPA (GGPA). Most of the empirical studies done to assess MBA students' performance have therefore exclusively looked at this measure as the dependent variable. These studies, some of which were conducted across countries and across types of programs (full-time, part-time, and executive), have looked at the different admission criteria such as undergraduate grade point average (UGPA), Graduate Management Admission Test (GMAT), work experience, etc. as the independent variables.

GMAT

GMAT (Graduate Management Admission Test) is without doubt the most common admission criteria used by business schools for admission to their MBA programs. The test is administrated by Graduate Management Admission Council (GMAC) which was founded in 1953 by an association of nine business schools whose aim was to create a standardized test to assist business schools during admission process of qualified students. In the first year the test offered, only 2000 students took the test (History – GMAC). The number of students taking the GMAT is increasing and in 2009, a record high of 265,000 GMATs were taken. Peg Jobst, senior vice president of the Graduate Management Admission Council (GMAC), which administers the test, states that it is accepted by more than 4,600 programs in 2,000 schools and institutions in 80 countries (Jackson, 2010).

One reason is that AACSB (the Association to Advance Collegiate Schools of Business), the accrediting body for business schools, originally recommended it as a strong indicator of screening and expected performance (Paolillo, 1982) though it does not currently do so and is not required for AASCB accreditation of a business program. It is seen as a an easy filter to let in

only those who are expected to do well even after their MBA program and bring reputation to the program.

Many studies have found that applicants' GMAT scores and their eventual GGPA correlate significantly, though the strength of the correlations appear to vary across many other factors such as the type of program (EMBA vs. others), country of undergraduate study, age etc. Carver and King (1994) and Hoeffer & Gould (2000) found GMAT to be a better predictor of GGPA than other factors. A GMAT score predicted success from a MBA program not only in US business schools but also at schools outside of the US (Koys, 2005). Kuncel, Hezlett and Ones (2001) found that standardized tests are better predictor of graduate school performance than undergraduate records. Grade inflation can be a reason for this finding or it can be due to the fact that topics studied at liberal arts institutions are different than specific topics studied in graduate schools. However, GMAT scores were found to be not statistically important by Sireci & Tolento-Miller (2006).

Considering the relationships of GMAT scores to GGPA in EMBA program, it is often argued that if a student has more work experience and stays away from school for a longer period of time, he or she would be in a disadvantageous position to earn a higher GMAT score. Sheikh (2006) stated that Executive MBA programs and full-time (FT) and part-time (PT) MBA programs differ in their curriculum and admission requirements. Because EMBA programs admit older and more experienced students, it is explainable to have a different curriculum and a strong emphasis on global concerns.

There are only a limited number of studies on EMBA admission process and predicting success in the program in terms of GGPA. Elkin (1991) studied the admission procedure at

Otago University in New Zealand. He found that EMBA program success correlated well with GMAT scores (r = 0.40) In other words, GMAT scores explained 16% of the variance in program grades. Talento-Miller and Rudner (2005) found that Quantitative and Verbal scores of GMAT and UGPA have an important correlation with course grades (mean r = 0.47) in FT or PT MBA programs. Also, a study examining 25 executive education programs showed that there is a mean correlation of 0.64 between executive program grades and GMAT Quantitative and Verbal scores and undergraduate GPA. This relationship was more significant for EMBA than full-time and part-time programs and indicates that schools and educators could use GMAT and UGPA to select promising candidates for Executive education.

Graduate Management Admission Council has a free service (validity study service) for graduate schools and helps them evaluate their admission processes. Schools provide GMAC with student data they collect during admission process and through program. In return, GMAC provides a report to participating schools about student performance. Such a study of 25 EMBA programs representing 2725 students during a period from 2002 to 2006 found strong correlations between GMAT scores and GGPA (Siegert, 2008). Table 1 shows how UGPA, GMAT total score, quantitative, verbal or Analytical Writing Assessment (AWA) correlated to GGPA in various programs. Their study, the neutrality of which is uncertain, found that generally GMAT scores better correlated to GGPA than did student's UGPA. GMAT total scores and quantitative scores succeeded to explain 30% and 36% of the variance in EMBA grades respectively (Siegert, 2008).

TABLE 1. Predictive Validity by Program

Program	*N*	Type of institution	UGPA	GMAT verbal	GMAT quantitative	GMAT verbal and quantitative	GMAT total
A	79	Public	.03	.58	.63	.83	.65
B	100	Public	.13	.51	.60	.70	.58
C	110	Private	.13	.31	.66	.67	.68
D	98	Public	.13	.32	.56	.60	.47
E	101	Private	.24	.28	.35	.40	.46
F	90	Private	.10	.56	.36	.62	.48
G	147	Public	.12	.66	.43	.67	.61
H	88	Public	.20	.46	.48	.60	.61
I	96	Private	.39	.45	.56	.66	.57
J	103	Public	.26	.39	.48	.54	.46
K	95	Public	.39	.35	.60	.63	.58
L	109	Public	.40	.48	.53	.64	.55
M	78	Private	.37	.51	.62	.70	.65
N	121	Private	.23	.46	.51	.57	.55
O	137	Public	.29	.09	.59	.59	.67
P	126	Public	.46	.55	.57	.71	.66
Q	148	—	.47	.19	.42	.42	.41
R	206	—	.38	.43	.43	.52	.49
S	105	Public	.22	.38	.35	.45	.39
T	102	Public	.19	.29	.38	.42	.44
U	166	—	.40	.50	.72	.75	.74
V	88	Public	.18	.49	.65	.76	.60
W	50	Public	.18	.10	.42	.42	.24
X	148	Public	—	.45	.28	.48	.59
Y	34	Private	.38	.47	.65	.73	.61

Note. UGPA = undergraduate grade point average; GMAT = Graduate Management Admission Test.

Source: GMAC Validity Study Service

On the other hand, average GMAT score of test takers shows a decline over the age of 31, concluding that GMAT scores decline with advancing age for the older students that populate EMBA programs. This partially explains why GMAT scores poorly correlate to GGPA in EMBA programs (Gropper, 2007). GMAC data shows that 28–30 year olds had an average GMAT of 542; 31–34 year olds had an average GMAT of 533, 35–39 year olds had an average GMAT of 510; and 40–49 year olds had an average of 484. In addition, the data indicated that there is a negative correlation between work experience and GMAT scores (Gropper, 2007).

Most of the studies about GMAT have examined US graduate business schools. However, recent studies have also indicated that GMAT scores are partial predictors of academic performance for non-US students. Talento-Miller (2008) found that while GMAT scores are

considered as a good performance indicator, they are less effective predictors of success for institutions located outside the US. Koys (2005) reports that a combination of GPA and TOEFL scores is a good substitute as a predictor of academic performance but he also finds that GMAT scores are even better indicators of student performance for non–US students (admitted to MBA programs outside the US) than for US students.

Given the inconsistency of the conclusions by various studies as regards the relationship between GMAT scores and GGPA, Hedlund et al. (2005) proposed that "Practical Intelligence" (PI) measures have the potential to improve selection of promising students for graduate business schools. PI measurements include personality, motivation, interpersonal skills and professional work experience or any other non-cognitive factors that affect success.

It is a common belief that GMAT is required for all applicants to business graduate programs. AACSB standards, since 1991, do not require GMAT as a tool for admission to graduate business programs. According to AACSB, schools can select promising students in many ways and they are free to choose their selection tools. Many business schools have dropped the GMAT requirement in their Executive MBA programs. Others have substituted GRE for GMAT, primarily for cost and accessibility reasons. Many Asian business schools use tests other than the GMAT or GRE for student selection. Others have completely waived GMAT and GRE giving prominence to:

- UGPA of 3.0 or 3.5 or higher (on a 4.0 scale)
- 3-10 years professional work or academic experience
- A previously earned master or PhD degree or a degree from a law or medical school

Kolluri, Singamsetti and Wahab (2010) examined the potential influence of GMAT waivers on graduation GPA in a study of 833 University of Hartford MBA students who

graduated between 2003 and 2009. They found no significant difference in graduation GPA, regardless of whether or not the GMAT requirement was waived, and the most important factor determining MBA graduation GPA was a student`s undergraduate grade point average. According to a survey conducted by EMBA Council, GMAT is used by fewer programs as an admissions requirement. While GMAT was not required for admission by 35 percent of programs in 2003, it was not mandatory for 51 percent of participating schools in 2005(Gropper, 2007). Although the demand for GMAT from executive MBA Programs decreasing, total number of GMAT test takers is increasing.

Undergraduate GPA (UGPA)

Many researchers have concluded in their studies that UGPA is the stronger factor. Yang and Lu (2001) state that UGPA is a better predictor of the applicant's success in the MBA program than GMAT scores, finding that the UGPA better predicted graduate performance than four other variables they considered (GMAT score, gender, student`s native language, and work experience). Students with higher undergraduate grades were found to perform better in MBA study than students with lower or moderate undergraduate grades (Anderson & Benjamin, 1994; Cheung & Kan, 2002).

On the other hand, UGPA is seen as a valid predictor of graduate performance but not to a greater extent than the GMAT, and the best way for selecting students for graduate study is the combination of GMAT and UGPA. A few studies also analyzed the predictive validity of UGPA in terms of grades earned in the junior and senior years of undergraduate education. Hypothesizing that that grades in senior year of college education would, all else being equal, be somewhat better predictor of graduate success, a couple of studies found that, on average, the

closer in time the grades are obtained the larger the correlation between undergraduate and graduate school grades (Humphreys & Taber, 1973; Humphreys, 1968).

Hancock (1999) stated that there were different standards and measurement policies in use across several schools and programs and undergraduate GPA played only a secondary role. Also, Arnold, Chakravarty and Balakrishnan (1996) reported that UGPA lost importance as a predicting factor for graduate school performance when the duration between undergraduate degree and enrollment to MBA program exceeded 10 years.

Undergraduate major

The type of undergraduate degree obtained is considered as a factor affecting performance of MBA students. Though Naik (2004) distinguished MBA students with undergraduate business degrees and those with other types of undergraduate degrees in their MBA grades, Carver and King (1994) found that having an undergraduate business or non-business degree had little effect on MBA performance. Similarly, in his study of students at a private Mid-western university Truitt (2002) found that having a business degree is not advantageous to having a non-business undergraduate degree in terms of performance in the program. However, he stated that having a quantitative undergraduate degree affected MBA academic performance positively.

Interestingly, several studies have confirmed that non-business major students have done better than their undergraduate business degree peers. Adams and Hancock (2000) concluded a negative relationship between having an undergraduate business degree and GGPA in his study covering MBA graduates from an urban school. In his study at a private school in the Northeast, Braunstein (2002) found similar results.

Work Experience

Work experience is another important factor many business schools consider in making admissions decisions. Work experience is seen as a predictive factor of MBA success (Adams & Hancock, 2000). Obviously, experience and knowledge the students acquire in the business world provides them with a broader view of various business functions, which let them to be in an advantageous position over less experienced students. Supporting this view, Dreher and Ryan (2000) found that work experience lets students gain more from case studies, academic articles, class discussions, etc. they cover in their program. Adams and Hancock (2000) reported that work experience prior to enrolling in a business school program is a better predictor of graduate school performance than results of standardized tests and GPAs, concluding that that there is a strong relation between number of years of work experience and MBA success. He found that the least and most experienced group of students differs significantly in their GGPA. A study by GMAC in 2005 found that although older students score lower on the GMAT, business experience related to better students' performance and success in MBA programs.

Conversely, some other studies (Dreher & Ryan, 2004; Sternberg, 2004) suggest that GGPA is not significantly related to work experience. Prior work experience did not correlate to GGPA in both full-time and part-time programs. Although duration or type of work experience were not significantly related to EMBA program performance, having a high level managerial position in a company is an important predictor of grades (Gropper, 2007).

Age

Several studies examined age as a factor. A couple of studies indicated that age was not a significant factor to affect students' performance (GGPA) in MBA programs (Wright and Palmer, 1997; Fisher & Resnick, 1990). On the other hand, Braunstein (2006) stated that work

experience and age are significant factors in anticipating GGPA for non-business undergraduates compared to business undergraduates. He suggests that this is due to non-business undergraduates' progress in their understanding of world and business affairs with maturity and professional experience.

Gender

In his study for MBA students, Hancock (1999) found that though males performed significantly better on the GMAT test but there was no statistically significant difference in GGPA between males and females. Similarly, in their study of core course results of MBA students in a Midwestern university, Wright and Bachrach (2003) confirmed that there was no difference in GGPA between males and females. Among students having an undergraduate business degree, females performed better in their MBA studies than did males.

Ethnicity

The relation between ethnicity and GGPA performance in MBA programs has been examined by some researchers (Clayton & Cate, 2004; Johnson, 2005). Similar to work experience, there are conflicting results. In a recent study, Johnson (2005) found very small but statistically significant relationship between ethnicity and performance. Clayton and Cate (2004) too found that students from different ethnicities and backgrounds differ in academic achievement. In their study with Northern Kentucky University students, White and Hispanic students show better performance than Asian Americans in the MBA program. In addition, Amy (1999) analyzed performance of Asian American, Hispanics and White students. She found that white students had significantly better grades overall. Some researchers attribute these variations to language proficiency rather than only to pure intellectual or social factors. McCarthy and Meier (1983) and Mayo and Christenfeld (1999) supported this finding about language.

Similarly, Yang and Lu (2001) discovered that language was a significant factor affecting MBA performance. Native students consistently do better than nonnative students even if the non-native ones had finished their undergraduate degrees in an English-speaking country.

Also, the researchers discovered that minority students based on race (African Americans, Hispanics, Filipinos, and Native Americans) were inclined to have lower expectations compared with White students. As a result of this, ethnicity affects academic performance. Hackett et al. (1992) suggested that self-efficacy was affected by ethnicity. Ethnic students who have less self-efficacy tended to try less and give up more easily which negatively affected their performance.

GRE

The educational testing service (ETS), which administers Graduate Record Exam (GRE), is urging business schools to adopt GRE as a substitute for GMAT. It is disputing the way graduate schools select students. While it is unknown how many MBA applicants are submitting only GRE results, according to ETS (2011) more than 450 MBA programs of graduate business schools around the world accept the GRE general test. ETS claims that it has larger number of test centers and lower exam fee – $140 compared with $250 for the GMAT- and can let business schools increase diversity. On the other hand, Graduate Management Admission Council, which administers the GMAT, argues that a smaller number of test takers help graduate schools pick from a pool of better candidates (Gloeckler, 2005).

Master and Doctoral graduate programs (Kuncel, Hezlett, & Ones, 2001), law schools (Linn & Hastings, 1984), pharmacy programs (Kuncel, Crede, Thomas, Seiler, Klieger & Woo, 2005), and medical schools consider GRE, LSAT, MAT, PCAT and MCAT as a valid predictor of student success respectively. As a result, structurally similar GMAT test would be predictive

of student success for business schools and a similar test could be its substitute. According to a study examining 60 graduate students from a southern, rural, medium-size college, GMAT and GRE differ in their relation to GGPA. All students in that study had completed at least 40 graduate quarter hours, meaning they finished half of their program. Half of the students were from master programs in education, history, psychology etc. and the other half were graduate business school students. The statistical analysis showed that there is a moderate relationship between the GRE and GGPA, r= 0.449. The correlation between GMAT and GGPA was weaker, r=0.231(Nilsson, 1995)

Conclusions

The research studies so far on the predictive factors for MBA success as measure by GGPA are equivocal. Research on success factors in EMBA programs are far and few between. Additionally, there are several confounds in the extant research. Effect of variables on each other is ambiguous and research groups have different characteristics and settings. Therefore it is difficult to draw firm conclusions based on research done so far.

However, one may tentatively make a few suggestions. GMAT/GRE does not appear to be strong predictor of success in the program. As a result, schools should reduce the focus on these traditional tests and increase the weight given to other factors such as

1. Motivation, measured with personal interviews, resume or recommendations etc.
2. Work experience (length and scope of managerial experience).
3. Personal or professional stake in program.

Given the state of world economy, many professionals at an age of 35-50 with at least 7-10 years of management experience are likely to seek an MBA. This is precisely the group that

GMAT/GRE scores very weakly relate to their MBA success. Although graduate school admission directors believe that these factors are better predictors of success than traditional quantitative measures, the subjectivity in decision making rankles many, not to speak of the legal liabilities associated with not admitting an applicant who believes she is well qualified but got discriminated against. A middle ground might be to employ personal interviews by a committee to assess the above factors in conjunction with factors such as UGPA and GMAT scores. We believe such subjective professional judgments will not only enhance the quality of students being admitted, but also increase their success rates as measured by post-MBA measures, and thus enhance the reputation of the MBA programs who apply this process.

Future Research

Furthermore, our literature review brought out more questions than it answered. The ground is fertile for more research on this topic. Since grading patterns can vary from institution to institution, from instructor to instructor, even from course to course, is GGPA a reliable outcome variable to measure success of MBA students? Are other measures such as rise in incomes or new promotions attributable to the MBA degree more appropriate? We must begin to study other outcome variables despite the difficulties, such as their earnings growth, rise in their organizational hierarchy, increase in responsibilities etc. after receiving their MBA. Furthermore, there is little doubt that standardized tests do not capture all of the predictability of a students' GGPA or other outcome variables stated above. What about the GGPA that might have been achieved by a student excluded based on any of the factors mentioned? It behooves us to investigate the role of other factors such as intrinsic and extrinsic motivations, personality of the applicants, their 'need for cognition', interpersonal skills and professional work experience or any other non-cognitive factors that affect MBA students' success.

Another area that requires research attention is operationalizing "work experience.' This construct has not been clearly specified by most MBA programs yet making it difficult to study it as a predictor variable. This is quite a challenge. Not all work experiences are equivalent in substance or equal in quality. A candidate`s one year of work experience can be equal to another candidate`s five year work in terms of skills and experience acquired. Research in this area would be most beneficial to MBA programs in selecting those with the greatest potential to succeed both in the program and after receiving their MBA.

Another focus for primary research is about pass/fail rates among MBA students. Does the UGPA or GMAT provide indications to whether a student will fail or not? Is there a difference between GGPA of students from undergraduate school that continue to graduate study at the same school and other students? Finally, few studies have been done to investigate the interactive effects of these factors to develop a model that incorporates standardized scores, years & quality of work experience with managerial responsibilities, and number of years since receiving Undergraduate degree. This is an area fertile for more empirical studies.

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