

Executive Education: Predicting Student Success in 22 Executive MBA Programs

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Abstract

This study examined common admission requirements used to predict success in 22 unique executive education programs. The results revealed a mean correlation of .64 between program grades and Graduate Management Admission Test[®] (GMAT[®]) Quantitative and Verbal scores with undergraduate grade point average (UGPA), a value meaningfully higher than that for full-time and part-time programs. It was found that UGPA and GMAT[®] scores could effectively be used in combination to select students who performed well in an executive program.

Sheikh (2006) recently reported that the core course curriculum for executive master of business administration (EMBA) programs significantly differed from the curriculum commonly found in full-time (FT) and part-time (PT) programs. FT and PT course curriculum are less concentrated on specific topics than EMBA program curriculum, and EMBA programs place a stronger focus on global concerns in their courses. No doubt, these differences in course curriculum are due to EMBA programs capitalizing on older, more experienced students in the executive program body. Further, an increased number of executive programs do not require standardized admission test. With EMBA programs differing from their FT and PT counterparts in terms of both curriculum and admission requirements, a logical question is whether traditional MBA admission factors, Graduate Management Admission Test[®] (GMAT[®]) scores and undergraduate grade point average (UGPA), can be used to effectively select applicants who will perform well in executive programs. This paper examines 22 EMBA programs and summarizes validity evidence about the admission process used by many executive programs.

Related Literature

Recent research published by the Graduate Management Admission Council[®] (GMAC[®]) indicated that the volume of applications to MBA programs increased during 2006

when compared to 2005 (Schoenfeld, 2006). When different types of MBA programs were examined, the largest increase in volume was reported among EMBA programs, with 69% of executive programs reporting increased applications. Also, a trend has emerged in the duration of EMBA programs (Executive MBA Council, 2006). Since 2003, the number of institutions reporting longer EMBA programs of 21–22 months decreased. Similarly, the number reporting shorter programs of 17–18 months slightly increased. Meanwhile, the EMBA applicant pool is also changing. The number of female and minority applicants to EMBA programs for the 2006 school year both increased. With the changing population, it should be expected that the face of executive education is shifting as well.

How can executive programs ensure they are selecting applicants who will thrive in their programs? Course curriculum in FT and PT programs was found to be similar despite differences in the progression of students through these courses (Sheikh, 2006). It is not surprising then that FT and PT program often use similar factors to select applicants for admission. Talento-Miller and Rudner (2005) found that GMAT[®] Quantitative and GMAT[®] Verbal scores and UGPA correlate quite well with core course grades, mean $r = .47$

However, when EMBA programs were compared to FT and PT programs, there were notable differences in terms

of course curriculum (Sheikh, 2006) and program duration. As such, is it appropriate to use the typical FT and PT admission variables to determine if applicants will be successful in EMBA programs? By evaluating selection procedures, executive education can develop a strategy for selecting applicants that increases the likelihood that admitted and enrolled students will successfully complete their programs.

Published research on the admission process and prediction of success in EMBA programs has been limited (Elkin, 1991; Gropper, in press). Elkin described admission procedures at Otago University in New Zealand as a process similar to filling an employment vacancy. When the structure of the admission process was reviewed, it was found that GMAT® exam scores were related to EMBA program performance ($r = .40$), explaining 16% of the variance (r^2) in program grades. Correlations among program grades and other admission criteria (i.e., age and UGPA) were not as high as those revealed with GMAT® exam scores. However, the correlation between GMAT® exam scores plus UGPA and performance yielded the highest relationship ($r = .47$). Admission criteria that explain roughly 9–16% of the variance (r^2) in grades, or correlations ranging from .30–.40, are commonly viewed as meaningfully contributing to the selection process (Kaplan & Sacuzzo, 1997). Thus, GMAT® exam scores were advantageous to the admission process at Otago University.

Results were not as promising at Auburn University. Recently, Gropper reported that GMAT® exam scores were more important in the prediction of core course and first-year performance than they were for end-of-program grades, $r = .21$, $.18$, and $.15$, respectively. Additionally, GMAT® exam scores accounted for more variance than UGPA in predicting EMBA performance. Unfortunately, the variance accounted for by the combination of both predictors was minimal; multiple correlations accounted for only 1.4–4.4% of the variance (r^2) in program performance. As a result of the previous research, there is a discrepancy regarding the importance of select admission factors in predicting future EMBA student success.

Some limitations of the previous published research should be noted. Both studies focused on applicants who

were accepted and who attended the studied EMBA programs as students (Elkin, 1991; Gropper, in press). These selection samples can result in lower-bound estimates of validity; the range of GMAT® scores and UGPA was limited because only accepted students that attended the program were included in the data. Often, there are fewer students included in the accepted student sample who have low GMAT® exam scores and/or UGPA values when compared to the range of scores represented by the entire pool of applicants to a given program. Thus, the variance of the accepted student sample is frequently lower than the variance of the applicant pool, and validity estimates are not representative of all applicants to the program. The real question of interest to EMBA programs concerns the selection of applicants not the predictive validity of admission factors for the accepted student body.

Also, this research (Elkin, 1991; Gropper, in press) cannot be generalized to other EMBA programs. Each of these previous studies examined predictive validity for only one EMBA program. As such, the research will only generalize to programs similar to the examined programs. To generalize findings, it is necessary to examine a range of programs. Though there are certainly similarities among EMBA programs, it is likely that there are characteristics that make programs unique. Thus, it is especially difficult to generalize the findings from two EMBA programs to all EMBA education.

Purpose

The purpose of the present study was to determine the relationship between common admission factors and performance in a sample of executive programs. This study examined UGPA and GMAT® Verbal, Quantitative, Analytical Writing Assessment (AWA), and Total scores as potential predictors of grades across 25 validity studies representing 22 unique EMBA programs. By examining many EMBA programs, results will be more generalizable to different programs. Bivariate and multiple correlations between the predictors and the criteria were examined to determine if traditional FT and PT admission variables were helpful in selecting applicants who were successful in executive programs.

Methodology

Validity Study Service

GMAC® offers graduate management programs that accept GMAT® exam scores a free service to help the programs evaluate their admission process. As a part of this Validity Study Service (VSS), schools provide GMAC® with student or individual-level (IL) data they collected during the process of admission and the progression of students through program coursework. UGPA, years of work experience, and GMAT® exam scores are examples of information collected during the admission process for which schools can provide IL data. Additionally, programs are asked to provide data on student performance in the program. This can include data on a specific set of core courses or all courses the student completed during the program. Once programs provide this IL data, the GMAC® VSS analyzes the data and provides a report to participating schools. The report includes information about predictive validity and the relationship between the IL information received during the admission process and student performance in the program.

Data

The current study summarized VSS data collected during a four-year period from 2002–2006 and was based on 25 validity studies conducted for 22 unique EMBA programs. For the summary study, standard variables collected across the studies—UGPA, GMAT® Total, GMAT® Verbal, GMAT® Quantitative, and GMAT® Analytical Writing Assessment (AWA) scores—were included as predictors of grade point average (GPA). GPA represents student grades based on coursework completed during the executive program. Some programs reported grades based on first-year performance while others reported final student grades upon completion of the program. The 25 validity studies represented a total of 2,725 students.

Restriction of range correction

The IL data evaluated for programs as a part of the VSS were analyzed using a procedure that corrects for restriction of range among scores obtained from limited samples. IL data collected from admissions tests, such as the GMAT® exam and others, often represent a limited range of all possible exam scores and grade ratings.

Because data provided to the VSS represents just students admitted to the program, rather than all applicants, average exam scores and subsequent GPAs are higher than what would be expected from a sample of applicants to the program. Often, there are very few students included in the data who have low GMAT® exam scores and/or GPA values, thus limiting the variability of the IL data. As a result, validity estimates based on admitted students are often lower than what would be expected based on a sample of all program applicants. The restriction of range correction used by the VSS is based on a formula proposed by Hunter and Schmidt (1990):

$$r_{ij}^* = \frac{U r_{ij}}{\sqrt{(U^2 - 1) r_{ij}^2 + 1}}$$

where r_{ij}^* is the adjusted bivariate correlation of variables i and j , r_{ij} is the observed bivariate correlation, and U is

$$U = \frac{\sigma_{pop}}{\sigma_{obs}}$$

Each program's correction is based on the ratio of variance in the IL observed data provided by the program to the variance in the population of applicants. The population of applicants for each program submitting data to the VSS is based on all GMAT® examinees who sent their scores within a given time period to the institution being studied. As a result, corrections were different for each program. Corrections for restriction of range were made to the bivariate correlations between each predictor (i.e., UGPA and GMAT® scores) and the criterion (i.e., GPA) separately for each study. Then, these corrected bivariate correlations were used in the regression equations to calculate estimates of predictive validity for each study. The restriction of range adjustments for the 25 EMBA studies resulted in an average predictive validity coefficient increase of .10.

Data Summarization

The results presented for the current study summarize predictive validity estimates across 25 validity studies. Talento-Miller, Rudner, and Owens (2006) described multiple methods for evaluating predictive validity across studies that included the same predictors and outcomes. The method selected for use in the current study involved the summarization of validity estimates across all 25

studies by calculating the mean and median validity estimates. Based on previous research (Talento-Miller et al., 2006), this method yields appropriate average estimates of program-level (PL) validity. It should be noted, however, that it is inappropriate to summarize PL subgroup (e.g., gender and ethnicity) validity by calculating the mean and median validity estimates obtained from subgroup analyses across multiple studies. While appropriate methods for subgroup analysis do exist, such analyses are beyond the scope of this paper.

Results

Results from each of the 25 unique EMBA validity studies can be found in Table I. Sample sizes for the individual studies ranged from $N = 34$ to $N = 206$. Across all studies, GMAT® Verbal scores demonstrated the widest range in bivariate correlations with GPA, $r = .57$. The lowest bivariate correlation with GPA resulted with UGPA, $r = .03$, and the highest bivariate correlation was found with GMAT® Total score, $r = .74$.

Table I. Predictive Validity by Program							
Validity Study	<i>N</i>	Type	UGPA	GMAT® Verbal	GMAT® Quant	GMAT® Verbal + Quant	GMAT® Total
A	79	Public	0.03	0.58	0.63	0.83	0.65
B	100	Public	0.13	0.51	0.60	0.70	0.58
C	110	Private	0.13	0.31	0.66	0.67	0.68
D	98	Public	0.13	0.32	0.56	0.60	0.47
E	101	Private	0.24	0.28	0.35	0.40	0.46
F	90	Private	0.10	0.56	0.36	0.62	0.48
G	147	Public	0.12	0.66	0.43	0.67	0.61
H	88	Public	0.20	0.46	0.48	0.60	0.61
I	96	Private	0.39	0.45	0.56	0.66	0.57
J	103	Public	0.26	0.39	0.48	0.54	0.46
K	95	Public	0.39	0.35	0.60	0.63	0.58
L	109	Public	0.40	0.48	0.53	0.64	0.55
M	78	Private	0.37	0.51	0.62	0.70	0.65
N	121	Private	0.23	0.46	0.51	0.57	0.55
O	137	Public	0.29	0.09	0.59	0.59	0.67
P	126	Public	0.46	0.55	0.57	0.71	0.66
Q	148	—	0.47	0.19	0.42	0.42	0.41
R	206	—	0.38	0.43	0.43	0.52	0.49
S	105	Public	0.22	0.38	0.35	0.45	0.39
T	102	Public	0.19	0.29	0.38	0.42	0.44
U	166	—	0.40	0.50	0.72	0.75	0.74
V	88	Public	0.18	0.49	0.65	0.76	0.60
W	50	Public	0.18	0.10	0.42	0.42	0.24
X	148	Public		0.45	0.28	0.48	0.59
Y	34	Private	0.38	0.47	0.65	0.73	0.61

A summary of predictive validity results combined across the 25 EMBA validity studies can be found in Table 2. GMAT® Total score yielded the highest mean and median predictive validity values for any single predictor examined in this study. However, the highest estimate of predictive validity was found when GMAT® Verbal and GMAT® Quantitative scores were combined with UGPA as multiple predictors of performance, median $r = .65$. As an individual predictor of performance, AWA scores only accounted for about 5% of the variance (r^2) in

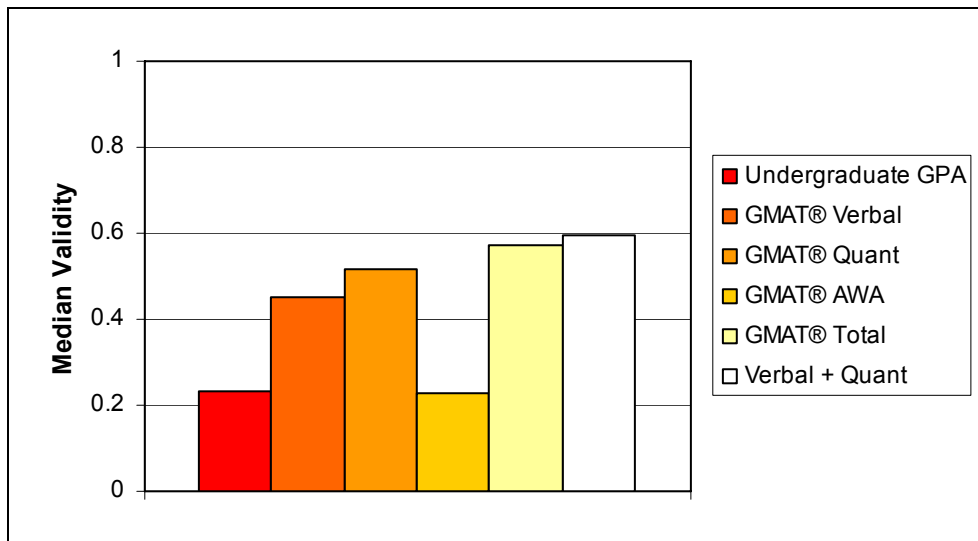
performance, and when combined with GMAT® scores and UGPA, AWA scores do not uniquely add to prediction. It should also be noted, however, that some programs did not report AWA scores for their students. For those programs that did report AWA scores, most did not report scores for all students included in the sample. As a result of the limited information available on the AWA for the sample used in this study, the current estimates of predictive validity may not be representative of all EMBA programs.

Table 2. Summary of Validity Coefficients for EMBA Programs						
Variables	N	Mean	SD	25%	Median	75%
UGPA	24	.26	.13	.15	.24	.39
GMAT® Verbal	25	.41	.14	.31	.45	.51
GMAT® Quant	25	.51	.12	.42	.53	.61
GMAT® AWA	22	.23	.12	.16	.23	.29
GMAT® Total	25	.55	.11	.47	.58	.63
Verbal + Quant	25	.60	.12	.50	.62	.70
Verbal + Quant + AWA	22	.60	.13	.48	.61	.68
Total + AWA	22	.55	.12	.46	.58	.62
Verbal + Quant + UGPA	24	.64	.12	.57	.65	.73
Total + UGPA	24	.58	.12	.48	.61	.67
Verbal + Quant + AWA + UGPA (V+Q+A+U)	21	.64	.12	.57	.63	.72
Total + AWA + UGPA (T+A+U)	21	.58	.11	.48	.60	.66

Figure 1 provides a graphical interpretation of the range in median predictive validity values based on the predictor(s) used. It can be seen that predictive validity is similar for GMAT® Total score and the combination of GMAT® Verbal and Quantitative scores. GMAT® Total score is a combination of raw scores from both the GMAT® Verbal

and Quantitative scales that are then rescaled to represent GMAT® Total score. Consequently, GMAT® Total score is not just a simple combination of GMAT® Verbal and Quantitative scores, and predictive validity results should not be expected to be identical for these different predictors, though it is often similar.

Figure I. Comparison of Median Validity Results for Individual Predictors



Results from the 25 EMBA studies were also examined separately for public and private institution designations. Information on institution type was not available for three of the studies included in the report. The results in Table 3 reveal that predictive validity coefficients were similar

across public and private institutions. Roughly 40% and 45% of the variance (r^2) in EMBA public and private program performance, respectively, can be accounted for by GMAT® Quantitative, Verbal, AWA scores, and UGPA.

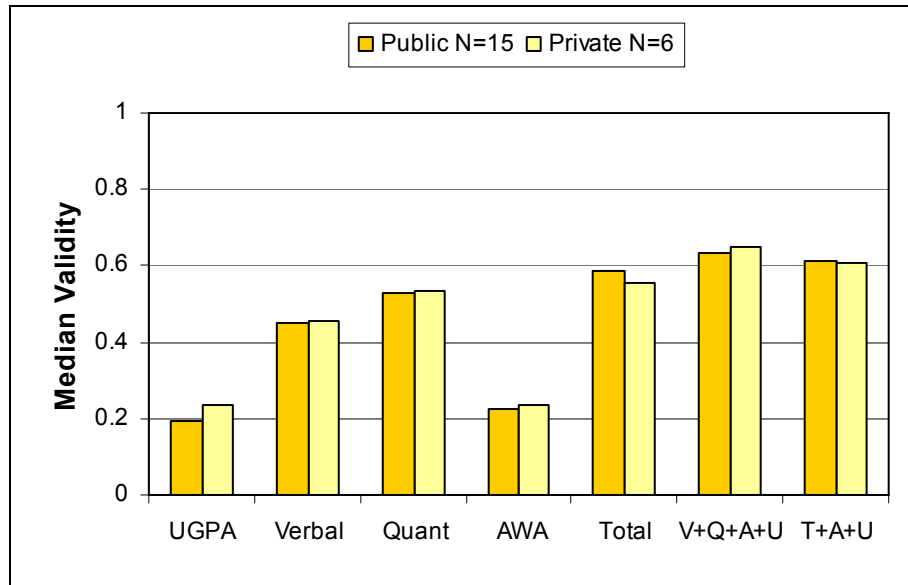
Table 3. Median Validity Coefficients by Institution Type

Variables	Public N= 15	Private N= 7
UGPA	.20	.24
GMAT® Verbal	.45	.46
GMAT® Quant	.53	.56
GMAT® AWA	.23	.22
GMAT® Total	.58	.57
Verbal + Quant	.60	.66
Verbal + Quant + AWA	.60	.67
Total + AWA	.59	.57
Verbal + Quant + UGPA	.65	.67
Total + UGPA	.61	.64
Verbal + Quant + AWA + UGPA (V+Q+A+U)	.63	.67
Total + AWA + UGPA (T+A+U)	.61	.64

Figure 2 provides a graphical comparison of median predictive validity by institution type. GMAT® Total score was the best individual predictor of EMBA program performance for both institution types, and the combination including GMAT® Verbal, Quantitative,

AWA, and UGPA as predictors yielded the strongest relationship with grades in both public and private programs. However, a comparison of this combination with the combination that included GMAT® Total, AWA, and UGPA revealed similar estimates of validity.

Figure 2. Comparison of Median Validity Results for Public and Private Institutions



Conclusions

Like their FT and PT counterparts, EMBA programs are faced with a difficult task of deciding which applicants to admit. The cost of mistakes is high, both for the potential student and the school. Mistakes could equate to damaged reputations and lost opportunity costs. Admission review is a complicated process involving a wide range of data, including test scores, UGPA, work experience, and interview data. Decisions are typically made amid competing interests, such as academic strength, class size, demographic mix, and developmental admits. Individual fit and desired class and/or program characteristics are also key variables considered during the admission selection process. Results of the current study demonstrated that the GMAT® exam can significantly contribute to this process, even more so than for FT and PT programs.

The relationship between GMAT® exam scores and EMBA program performance are stronger than the two previously published program-specific evaluations (Elkin,

1991; Gropper, in press). These two studies reported that GMAT® scores accounted for only 2–16% of the variance (r^2) in grades. The current study summarized results over 22 different programs to provide for a more comprehensive understanding of the predictive power of various admission criteria for executive education. The results revealed that, on average, GMAT® Total and the combination of GMAT® Verbal and Quantitative scores accounted for 30% and 36% of the variance (r^2) in EMBA program grades, respectively. GMAT® Quantitative, Verbal, and Total scores were better predictors of EMBA program performance than UGPA. Performance was best predicted when GMAT® scores and UGPA were used together to select applicants for admission. Estimates of predictive validity were also similar regardless of institution type (i.e., private vs. public). Thus, performance in EMBA programs positioned within both private and public institutions are related to GMAT® scores and UGPA.

It can be concluded that the common variables, GMAT® Quantitative and Verbal scores and UGPA, used to select

applicants for admission to FT and PT graduate management programs are also appropriate to use when making selections for executive education. Use of GMAT® Quantitative and Verbal scores and UGPA help ensure quality students are admitted. Additionally, use of the GMAT® exam communicates information about the quality of the program to prospective students, which may have an impact on program applications. Schoenfeld (2005) found that quality and reputation are among the most important factors used by prospective students when choosing a graduate MBA program.

Some EMBA programs may feel that by implementing admission requirements they are limiting their applicant pool. However, recent research indicated that admission requirements such as the GMAT® exam did not influence an applicant's decision to apply to a particular EMBA program (EMBA Council, 2005). Nevertheless, the quality of the selection and admission processes employed by programs does have larger implications on the branding of the EMBA degree.

Though the current study looked as several common admission factors, there are numerous other variables that are used by executive programs. Future studies could further the research of Gropper (in press) and examine the impact of work experience on EMBA program performance. For instance, programs that submitted data did not include a common measure of work experience or job accomplishments as an admission factor for the current study. The Gropper study found that although years of work experience were not significantly related to EMBA program success, attainment of managerial or vice presidential status within a company was a strong positive predictor of grades. Research could further explore the relationship between job titles and their associated skill requirements and performance in executive education.

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Interviews are also a critical admission component for many EMBA programs. The Executive MBA Council reported that 84% of EMBA programs require interviews prior to admitting an applicant (2006). The interviews are used to confirm that applicants have the skills they purported on their application. The interview process additionally provides EMBA programs with the opportunity to determine if an applicant is a match to the program in terms of personality and intellect. There is a need for future research to determine the impact of the interview process on admission decisions and, more importantly, how it can be used to effectively select applicants that will be successful students.

Because this study employed a relatively large number of EMBA programs, 22 unique programs, results will likely generalize to other programs. However each EMBA program should conduct their own validity study to determine how well admission variables work for their unique learning environment. Validity studies, such as the 25 examined in this study, help programs identify the relative contribution of various admission factors in the selection of applicants that will perform well in their specific courses. Results from this study sample suggest executive education will benefit from including common MBA admission requirements, such as undergraduate performance and GMAT® exam scores, for the selection of applicants into EMBA programs.

Contact Information

For questions or comments regarding study findings, methodology or data, please contact the GMAC® Research and Development department at research@gmac.com.

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