

Determinants of Student Academic Performance in Indian B-Schools – An Empirical Investigation

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Abstract

Given the highly competitive nature of MBA admission, one cannot help asking the question if the criteria used in the admission decisions are predictable for success in management courses offered at various B-Schools. This paper tries to explain the determinants of performance of students who are enrolled in regular MBA program in an Indian B-School. The study is conducted on first year students of a premiere B-School using multiple regression. Study shows that performance of MBA student in the course is not determined by their earlier academic performance. It can be explained only by the student's exposure to the course contents either through previous experience or otherwise. Academic performance is also explained by motivation to learn, or the efforts student put during the course. This study has implications for management education not only in the area of admission decision but also in area of teaching methods.

Keywords: Student, B-school, Academic, MBA, Regression

1. Introduction

During the last few years there has been a significant increase in business school enrollments across the country. According to Kapur – Mehta Report⁵ the student enrolment for academic discipline of management/commerce is around 16,60,238 which is approximately 17.99% of total enrolment of students in an academic year. It is well known that admission to a top rated business school in our country is very competitive. According to Muralidharan et al¹ IIM Ahemdabad was rated toughest business school in the world to get into by the Economist Intelligence Unit (2002); with more than 70,000 applicants were fighting for 200 places for their two year flagship program.

Given the highly competitive nature of MBA admission, one cannot help asking the question if the criteria used in the admission decisions are predictable for success in management courses offered at various B-Schools. Thus, the knowledge of the determinants of academic performance of a MBA student will help to enhance the decision making in the admission process. Similarly, management educators will also be interested to know the determinants of academic performance of MBA student so that they can design the syllabus, course and various other supporting activities to cater the needs of the students. This study

will also shed light on why some students in the MBA course better than the others.

In this paper we have tried to explain the determinants of performance of students who are enrolled in regular MBA program in an Indian B-School.

2. Factors Affecting Student Examination Performance

Overall academic performance of the student can be attributed to several factors. Keeping the variables like age, gender, cultural and economic background, qualification of parents etc. controlled academic performance of students in MBA classes in Indian B-Schools can be attributed to following factors- Admission Test Score (like- CAT, XAT etc.), their graduation academic performance, their pre - college academic performance i.e. high school performance, their earlier exposure to the courses offered or familiarity with the course and finally motivation of the student to study during the course period.

MBA is offered as a post graduate program in most of institutes across India and with wide variations of standards of University education in India, a need was felt to have a separate admission

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system for entry to MBA program. This need is catered by various admission tests like - CAT, XAT, MAT etc. which are developed on the lines of GMAT and measure mathematical aptitude, logical reasoning, language comprehension etc. According to Sinha⁶ COSMODE research has shown that admission tests used by b-schools in India do not demonstrate any linkage between performance in test and performance in MBA class; there is hardly any research basis for test.

According to Dreher and Ryan³ it is the assumption that people who have worked full time for several years enjoy, richer more personally relevant learning in the MBA classroom than do their less experienced counterpart is easy. They say that this is because it is presumed that knowledge they gained on the job helps them to understand the interrelatedness of various business functions. In their another article Dreher and Ryan² prior work experience was found to account for only a small proportion of the variance in first-semester grades and was found to be unrelated to academic performance in the second semester. Taking these results and other existing empirical studies into account, there is little support for the view that previous work experience (as assessed by typical admission procedures) leads to higher levels of academic achievement. For the present article I am considering the student's earlier exposure to the courses offered or familiarity with the course whether it is in terms of experience through work or he or she has familiarity with course contents by other means.

Eskew and Faley⁴ have mentioned in their article that past academic performance is significantly related to future performance- i.e., grades predict other grades. Yang and Rosa-Lu (2001) in their study concluded that undergraduate performance is the most important prediction for the graduate academic performance, thus we are considering the variables- graduation academic performance and pre- college academic performance which may affect the student academic performance in MBA program. Eskew and Faley⁴ also mention that research has also shown that measures of effort/motivation can explain significant portions of the variance in overall academic performance above that explained by grades and aptitude test scores.

3. Sample and Data Collection

In order to understand the variation in the performance of students during their first year at an Indian B-School a sample of 100 students, who are presently in their final year at a premiere b-school were interviewed. All the students were from same academic program. The final year performance is based mainly on performance in electives and is therefore not considered. The performance (CGPA) of these students during their first year was recorded along with their graduation GPA, high school GPA, XAT score, overall exposure to the courses and motivation.

4. Study Variables

The performance of the students is measured on the scale of 8, where 0 was the lowest performance index and 8 is the highest performance index. Similarly, the graduation performance and high school performance is measured on the scale of 5, where 0 means lowest performance index and 5 means highest performance index. Further, the MBA Entrance Admission Test (MEAT) score is expressed in terms of percentage (with respect to highest marks achievable). The exposure is measured in terms of familiarity with the courses and is rated on a scale of 10. Lastly, the motivation is measured in terms of the number of hours devoted to the study.

5. Statistical Methodology

In order to understand the relationship between the performance of first year students and other factors we used multiple regression analysis. However, due to high degree of multi co linearity between the predictor variables, the predictor variables were first recategorized into factors using factor analysis and then these factors were used as predictor variables in the multiple regression analysis. The regression analysis was performed using SPSS v 16.0, with first year performance as the criterion variable and content exposure, study motivation, graduation performance, school performance and MEAT score (recategorized into factors) as predictor variables.

6. Checking Assumptions of Multiple Regression

6.1 Normality of the Variables

The distribution of all the variables was analyzed using the Shapiro-wilk test of normality. The results in Table 1 indicate that none of the variables seriously violates the normality assumptions ($p > 0.05$).

6.2 Multicollinearity of Variables

The correlation matrix in Table 2 suggests that among the predictor variables the MEAT score, school performance and

Table 1. Shapiro-Wilk test of normality

	Statistic	df	Sig.
Performance	0.908	100	0.100
MEAT Score	0.990	100	0.659
School Performance	0.973	100	0.370
Graduation Performance	0.985	100	0.335
Exposure	0.948	100	0.401
Self Motivation	0.918	100	0.811

Table 2. Correlation matrix

	Performance	MEAT_Score	School_performance	Grad_performance	Exposure	Motivation
Performance	1.00	-0.03	-0.03	-0.08	0.92**	0.93**
MEAT_Score	-0.03	1.00	0.43**	0.52**	-0.05	-0.05
School_performance	-0.03	0.43**	1.00	0.55**	-0.04	0.00
Grad_performance	-0.08	0.52**	0.55**	1.00	-0.11	-0.09
Exposure	0.92**	-0.05	-0.04	-0.11	1.00	0.94**
Motivation	0.93**	-0.05	0.00	-0.09	0.94**	1.00

** Significant at 5%

graduation performance have high and significant correlation. Similarly, there is a significant positive correlation between exposure and motivation. Thus, we conclude that there is a high degree of multicollinearity between the predictor variables.

7. Principal Component Analysis (Factor Analysis)

The Eigen value criteria indicate that the set of five predictor variables, which has high degree of multicollinearity, can be recategorized into two factors based on the pair-wise correlation between them. These two factors can be represented in terms of the five predictor variables as follows:

$$\text{Factor1} = 0.629 * (\text{MEAT Score}) + 0.614 * (\text{School performance}) + 0.709 * (\text{Grad performance})$$

$$\text{Factor2} = 0.733 * (\text{Exposure}) + 0.748 * (\text{Motivation})$$

8. Correlation Matrix

The correlation matrix in Table 3 with the new factors indicates that there is no significant correlation between the factors. Thus, the factors do not show the problem of multicollinearity.

9. Results

The F-test results indicate that the two factors are statistically significant in explaining the variation in the performance of the first year students, $F(2, 97) = 391.60, p < 0.05$. Moreover, the model summary results in Table 4 suggest that 88.8% of the variation in the performance of the students in their first year can be explained by the two factors.

Further, the regression coefficients in Table 5 indicate that Factor 2 ($t = 27.96, p < 0.05$) is statistically significant in explaining the variation in the performance of first year students. Moreover, the regression coefficients for Factor 2 indicate that for each unit increase in the value of Factor 2, the performance of the student

Table 3. Correlation matrix (with factors)

	Performance	Factor1	Factor2
Performance	1.000	-0.037	0.943**
Factor1	-0.037	1.000	-0.056
Factor2	0.943**	-0.056	1.000

** Significant at 5%

Table 4. Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
0.943	0.890	0.888	0.483

in first year increases by 0.62 units. Overall, the regression model for the present analysis can be represented by $\text{Performance} = 1.75 + 0.62(\text{Factor 2})$

$$\text{Performance} = 1.75 + 0.62 * (0.733 * (\text{Exposure}) + 0.748 * (\text{Motivation}))$$

10. Conclusions and Limitations of the Study

Study shows that performance of MBA student in the course is not determined by their earlier academic performance. It can be explained only by the student's exposure to the course contents either through previous experience or otherwise. Academic performance is also explained by motivation to learn, or the efforts student put during the course. This study has implications for management education not only in the area of admission decision but also in area of teaching methods. This study does not support the use of earlier academic performance in school or college as selection criteria. The outcome of the study questions the relevance of admission tests in selection for the program. The results indicate that we may need to redesign our admission test structure to make the good selections decisions.

Table 5. Regression Coefficients

	Unstandardized Coefficients		Standardized Coefficients		t	Sig.
	B	Std. Error	Beta			
(Constant)	1.75	0.28			6.32	0.00
Factor1	0.00	0.01	0.02		0.46	0.65
Factor2	0.62	0.02	0.94		27.96	0.00

There are certainly certain limitations of the study that constrain the generalizability of this study. Firstly, only few predictors were studied due to limitation of time and resources. Other variables like student's economic and cultural background, parent's education, age, commitment to other college activities etc. could have improved the study outcomes.

11. References

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