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**FEATURE**

**Intelligence Quotient, College Major, School of Origin,  
and Academic Performance of Master's in Business  
Administration Students**

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**Abstract:** *This study intended to find out whether IQ, College Major, and School of Origin significantly contribute to superior performance of students in the Master in Business Administration (MBA) program. Data was taken from 40 respondents who had graduated from a management graduate school in Jakarta. Stratified convenience sampling method was used. Data was analyzed using Logistic Regression technique.. It was found that IQ significantly contributes to the superior performance of the MBA students. Students' prior college major did not significantly contribute to superior performance in the MBA program. This was also true for prior school of origin, which did not significantly contribute to the superior performance of the student in the MBA program.*

**Keywords:** Student performance, IQ, school of origin, college major

Schools want their students to be superior in their academic performance. A lot of effort is expended by schools and resources are utilized to make sure that the students receive the quality education they deserve. The best education will prepare them for better jobs in the future, such as being managers. Studies have shown that school factors affect job performance as managers. The study of Howard (1986) found that the performance of a person as a manager was accounted for by certain factors, among which was their college major. It is also important to know what makes students superior in their academic performance, hoping that it will also contribute to their performance in their work.

Several studies have been done on factors associated with student academic performance. One factor that seems to affect student academic performance is their intelligence. The study of Nonis et al. (2005) indicated that ACT scores (a common college entrance examination used in the U.S. as a surrogate measure of intelligence) significantly correlate with students' academic performance. Another study by Cushing and McGarvey (2004), done on a university's Master of Business Administration (MBA) program, found a high correlation between undergraduate GPA and test scores (academic performance) in the MBA program. This study did not look at the importance of the standardized entrance examination test such as the GMAT (a common entrance examination as a surrogate measure of intelligence used in the MBA programs), however, the study of Nonis et al. (2005) indicated its importance. It is clear that both GPA and standardized entrance examinations can predict student performance and can be used as a surrogate measure of intelligence. However, due to variation across institutions, GPA for measuring students' intelligence must be used with caution, especially in making comparisons.

Another factor that might affect MBA students' performance is previous educational background. As the study of Win and Miller (2005) discovered, previous schools do have an impact on academic performance. Win and Miller (2005) studied first year students at the University of Western Australia, and found that high schools had an impact on the academic performance of university students beyond the students' own background characteristics. Another study (Conley & Simon, 1993) indicated that personality very likely affects academic performance.

The undergraduate educational background of students entering graduate school, then, is expected to have an effect on their performance in the program. The study of Hartnett, Romcke and Yap (2004) on university accounting students found statistically significant relationships between accounting performance and accounting study prior to university. Rohde and Kavanagh (1996) also found that the accounting grades of students who had studied accounting previously were higher than those of students who did not study accounting in high school. It seems that the previous educational background of a student might affect their academic performance at the next education level.

The following studies indicated that personal characteristics of students such as striving for achievement, feelings of inferiority, persistency, and initiative affect their academic performance. Each student has their own personal characteristics that will affect their academic performance. Nonis et al. (2005) studied factors that were used to predict academic success. They discovered that some predictors of academic success were personal characteristics such as achievement striving and feelings of inferiority. These characteristics significantly correlated with the academic performance of students taking marketing education. Another study by Jaramillo and Spector (2004) on the

academic performance of undergraduate marketing students discovered that persistency and initiative were positively related to effort, which is an important antecedent of academic performance. Also the study of Lee, Jamieson and Earley (1996) found that achievement striving was positively related to academic performance. It was suspected that some of the personal characteristics of MBA students were developed during their undergraduate years. Some schools might treat their students differently from one another, and this may also contribute to the formation of personal characteristics.

Based on the above review of related studies, the following conceptual framework was formulated (see Figure 1). College major (CM) and school of origin (SO) are the predictive variables, academic performance (AP) is the criterion variable and intelligence quotient (IQ) is the intervening variable. Though IQ is the intervening variable, since logistic regression was used in analyzing the data, IQ was treated as one of the predictive variables. The following regression model was hypothesized:

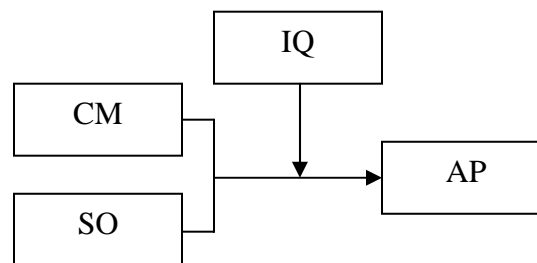
$$AP = \alpha + \beta_1IQ + \beta_2CM + \beta_3SO$$

Where:

$\alpha$  = constant

$\beta$  = logistic regression coefficient

$\varepsilon$  = error



Note. CM = college major  
 SO = school of origin  
 IQ = intelligence quotient  
 AP = academic performance

Figure 1. Conceptual framework of the study.

It was hypothesized ( $H_1$ ) that the performance of students in the MBA program (AP) was affected by three factors: the intelligence of the students (IQ), their undergraduate college major (CM), and school of origin (SO). In this study, the performance of students is the criterion variable and the other three factors are the predictive variables.

### Method

This was a cross-sectional, confirmatory study. It was cross-sectional since the data was collected all at the same time. It was also a confirmatory study since there were several variables that needed to be confirmed for their significance: Academic Performance, IQ, College Major, and School of Origin. *Academic Performance* of the MBA students was the grade point average (GPA). *IQ* was the intelligence of the students as measured by an IQ test. *College Major* was the undergraduate major of the students prior to taking the MBA degree. The college major of the students was either business major or non-business major. Included in business majors were majors in economics, accounting, and management. Non-business were engineering, science, law, medical and other social science majors. *School of Origin* was the school where the student studied as an undergraduate. It could either be a state-owned college/university or privately owned college/university.

Stratified convenience sampling was used in collecting the data. The population was stratified according to the schools that offered graduate degrees in management. Conveniently, a graduate school of business administration in Jakarta was selected since the data was readily available. Students enrolled in that school from year 2001 to 2006 were selected. They were divided into two groups, those who graduated with superior performance, and a group who graduated with low performance. The GPA was used as the criterion to consider whether the student belong to the superior or low performance group. Those students with a GPA of 3.75 or above were considered to have superior performance, and those with a GPA of 3.24 or below were considered as low performing. All together, 40 students were selected for this study. They were the full time students that enrolled from 2001-2006. Twenty students with high performance and another 20 students with low performance made a total of 40 respondents who were selected.

Data regarding the academic performance, intelligence scores, and previous academic background were available from the Registrar's office. Permission was asked from the person in charge. Upon receiving permission, data was gathered. Data was analyzed using the Logistic Regression method of statistical analysis. SPSS was used as computing software for data processing. The data was tested first for the fitness of the model, then for the significance of the predictive variables.

### Results

The model was tested for significance using the Hosmer and Lemeshow test. It is said to be accepted for further analysis when the Hosmer and Lemeshow score is more than 0.1. The Hosmer and Lemeshow test indicated a significant (Sig.) value of 0.477, which is far above the minimum requirement of the model to be accepted for further analysis which is 0.1 ( $P > .01$ ). This means that the independent/criterion variables can be used to predict the dependent variable.

The significance of the independent variables was tested using the *Logistic Regression model* with the significance level of 0.05 or at the confidence level of 0.95. The output of this test is shown in Table 1. Table 1 shows that only IQ was significant ( $\beta = 0.116$ ,  $P = .004$ ). College Major was not significantly related to the Academic Performance ( $\beta = 0.881$ ,  $P = .314$ ), nor was School of Origin. School of Origin was not significantly related to the Academic Performance ( $\beta = -0.544$ ,  $P = .501$ ). Their significance values were higher than the required significance level of 0.05.

The null hypothesis that said that IQ did not affect the performance of students in the MBA program is therefore rejected. There was a significant effect of students' IQ on their academic performance in the MBA program. The null hypothesis that says College Major does not affect performance of students in the MBA program is accepted. There was no significant effect of undergraduate college major on their academic performance in the MBA program. Also, the null hypothesis that says School of Origin does not affect performance of students in the MBA program is accepted. The undergraduate school of origin did not have a significant effect on students' academic performance in the MBA program. Students with a higher IQ tend to have superior academic performance compared to those who have a lower IQ.

Table 1  
*Logistic Regression Test*

Variable	B	Sig.
IQ	.116	.004
College Major	.881	.314
School of Origin	-.544	.501
Constant	-14.190	.004

The findings of this study are consistent with the study of Nonis et al. (2005), which stated that ACT scores significantly correlate with the academic performance of college students. This finding will be consistent as long as the assumption is made that standardized examinations such as the ACT for college at the graduate level, measure student intelligence. Cushing et al. (2004) also found that applicants to a university's MBA program exhibited a higher correlation between standardized admission test scores and *undergraduate* GPAs. Both entrance examinations and previous undergraduate GPA can be used in predicting academic performance in the MBA program. However, care must be taken in the use of GPA. Different schools have different standards for GPA. It is not possible to compare student performance based on GPA if students come from different schools. For that reason, the use of standardized entrance examinations should be more reliable as the predictor of the academic performance.

### Conclusion

The data support the hypothesis that IQ is a factor that affects the performance of the students in the MBA program. The data did not support the hypothesis that undergraduate college major and undergraduate school of origin affect the performance of the students in the MBA program. Other factors such as the school where the students come from and their major in the undergraduate program did not contribute to superior academic performance in the MBA program. In conclusion, this study found that it does not matter where the students come from or what major they took in their undergraduate degree; the performance of MBA students depends on their intelligence.

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