

# An Econometric Analysis of Demand for Management Education in Indore on the basis of Expenses on Coaching for MBA Entrance Exam

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## Abstract

The demand for management education depends upon one of the major attribute like expenses on coaching for MBA entrance exam of an individual which are broadly classified in two main categories namely demand side and supply side factors. The effect of this determinant on demand for education differs significantly depending on the pattern and context of the study. Hence, it is important to predict, control and analyze the structure and determinant of demand for education. The proposed study focuses on impact of expenses on coaching for MBA entrance exam on the demand for management education across various management institutions in Indore with the help of the primary data & Logistic Regression. The data has been collected from a student survey of MBA 1st year students of 2012-14 batch from institutes affiliated to DAVV(Devi Ahilya Vishwavidyalaya) or Devi Ahilya University and IIM-Indore (Indian Institute of Management-Indore).

**Key Words:** Management Education, MBA entrance exam, Indore, IIM-Indore and Institutes affiliated to DAVV.

## Introduction

Expenses on coaching for MBA entrance exam play a very important role on the demand for management education in Indore. Hence it is very important to study its impact on demand for management education. However, the decision of investing in education or enrolling the candidate (technically known as demand for education) for management courses is a matter of broader concern today specially in management education, i.e., professional degree course like MBA/PGDM.

Management Education simply means courses like MBA/BBA/PGDM/& PGP of IIM-I.

But in this study the total focus is on higher education i.e. post graduate courses like MBA/PGDM/& PGP(IIMI).

In Indore the demand for management education has been increasing from last few years. The number of seats for MBA courses of DAVV affiliated Institutes or colleges & PGP seats of IIM-Indore are shown below:

Institute	No. of Seats(2011)	No. of Seats(2012)
IIM-Indore	450*	450*
DAVV affiliated Institutes	6600**	7080**

\* Source: IIM-Indore Admission Office,

\*\*Source: MP-MET examination brochure of year 2011 & 2012.

- In the year 2009, numbers of seats in IIM-Indore were only 240. But from the year 2010, it has been increased to 450.

### Review of Literature

- The studies of Galper and Dunn 1969, Husain 2005, Hossain and Kabeer 2004, Duraisamy P. 2001 shows the relationship between demand for education and supply side variable like total public expenditure on education, political will and the education policy of the government, access to school, study allowances, other incentives of education such as mid-day meals, uniforms, books, transport and scholarship.
- (Edgell, Margaret Sampson-2009)-This research design based on Qualitative Comparative analysis, addressed three initial challenges to the study of a macro-level social phenomenon: subjectivity of study of a social construct; lack of definition of social- contract terms; and multiplicity of social contracts. Three countries were chosen as case study due to their classification as welfare states with strong government orientations: Finland, Norway, and Sweden. The results of this study revealed that for student financial support policy, that, absent supranational social contract, the national social contract was a stronger determinant of funding in the three countries studied than the shifts in social contracts in other European countries. For academic research funding, national social contract was the driving factor, over supranational social contract.

### Rationale

This research is probably one of the first attempts which shows the effect of expenses on coaching for MBA entrance exam on the demand for management education with special reference to Indore city and thereby will try to provide a platform for future predictions and control methods with the help of logistic regression. Till date, there are handfuls of studies available on determinants of demand for education & higher education and in most of the cases, factors which are affecting education are determined but there are no studies which talks about the future demand for any type of education. Basically this study will provide a clear understanding of how expenses on coaching for MBA entrance exam demand determinants for management education.

### Objectives of Study

1. To study how expenses on coaching for MBA entrance exam act as influencer in demand determinants for management education.
2. To study the significant impact of expenses on coaching for MBA entrance exam on the demand for management education in Indore.
3. To predict the future of management education in Indore and thereby finding out the controlling factor.

### Hypothesis

H0a: There is no significant impact of expenses on coaching for MBA entrance exam on the demand for management education in Indore.

H1a: There is significant impact of expenses on coaching for MBA entrance exam on the demand for management education in Indore.

### Research Methodology

#### Sampling Design

**Universe:** In this study the Universe is finite, and it is the total number of students of all MBA colleges in Indore city.

**Sampling Unit:** In this study sampling unit is the total number of MBA 1<sup>st</sup> year students of academic year 2012-2013 of Indore city.

**Sampling Frame (Source List):** In this study, sampling frame consist of IIM-Indore and all MBA colleges which are affiliated to Devi Ahilya University, Indore.

**Sampling Technique:** In this study **Probability Sampling or Simple Random Sampling** is used so that every item of universe has an equal chance of inclusion in the sample. Random Sample from a finite population refers to that method of sample selection which gives each possible combination an equal probability of being picked up and each item in the entire population to have an equal chance of being included in the sample.

**Sample Size:** For a finite population, following formula has been used to calculate size of the sample when estimating a percentage or proportion:

$$n = \frac{z^2 \cdot p \cdot q \cdot N}{[e^2(N-1) + z^2 \cdot p \cdot q]}$$

where,

n= Size of the sample,

Z= The value of the standard variate at a given confidence level and to be worked out from table showing area under normal curve,

p= Sample proportion,

q= 1-p,

N= Population size,

e= Margin of error.

In this study, level of confidence is 95%, margin of error is 5%, and population size is total number of students in Indore which is calculated by

Institute	No. of Seats(2012)
IIM-Indore	450
DAVV affiliated Institutes	7080
<b>Total no. of seats</b>	<b>7530</b>

Since, confidence level is 95%, Hence Z=1.96, N=7530, e=0.05, p=0.5 & q=0.5

Therefore, by using above formula and values, Sample Size 'n' comes out to be 366.

**Sample Size n= 366**

In this study data is collected from 400 students in order to reduce margin of error at the same confidence level of 95%.

**Data and Explanatory Variables**

**Data**

The present paper uses the primary data collected from a

student survey from the 400 first year students pursuing MBA in 15 MBA colleges including IIM-Indore and other colleges affiliated to DAVV in Indore for the academic year 2012-13. The survey has collected data on a number aspects as per the requirement of the study and the present paper uses only part of it as per the requirement. Since the focus of the present paper is to analyze the determinants of the choice the institutions among students in Indore, the data presented here is focused to the problem with overlooking some other important collected information. Out of the 400 students, 21 students are studying in IIM-Indore.

**Explanatory Variables**

The description of variables are as follows:

Variable	Definition
SELINST	Dependent variable that takes value 0 for IIM-Indore and 1 otherwise.
EXPENSE ON COACHING ENTRANCE EXAM	Discrete variable that takes value 1 if expense on coaching for entrance exam is less than Rs. 20,000, 2 if expense on coaching for entrance exam is 20,000-40,000, 3 if expense on coaching for entrance exam is more than Rs. 40,000

Source: Authors Computation.

Note: Many of these variables were tested and finally few of them were used in the regression equations as per the suitability.

**Binary Logit Model where the Dependent Variable is Choice between IIM-Indore and Institutes affiliated to Devi Ahilya University**

A Binary Logit model is used to estimate the choice between IIM-Indore and Institutes affiliated to Devi Ahilya University. The model explains the 'marginal effect' i.e. the change in the propensity or probability of studying in IIM-Indore and Institutes affiliated to Devi Ahilya University after a change in one of the explanatory variables. The specification of the model is as follows:

The probability of studying in IIM-Indore is

$$P = 1 / 1 + e^{-(\alpha + \beta_i X_i)}$$

Where P denotes the probability of a student studying in IIM-Indore, Xi is the set of explanatory variables, β<sub>i</sub> is the regression coefficients.

The probability of studying in Institutes affiliated to Devi Ahilya University can be written as

$$1 - P = e^{(\alpha + \beta_i X_i)} / 1 + e^{(\alpha + \beta_i X_i)}$$

Hence,

$$P / 1 - P = e^{(\alpha + \beta_i X_i)}$$

Where, P / 1-P is the odds ratio in favor of studying in

Institutes affiliated to Devi Ahilya University i.e. the ratio of the probability that a student will study in Institutes affiliated to Devi Ahilya University to the probability that it will study in IIM-Indore.

Taking the natural log of the odds ratio

$$L = \ln(P/1-P) = \alpha + \beta_r X_r$$

Here  $L$  is the log of the odds ratio which is linear in parameters and  $\beta_r$  is the maximum likelihood estimate of the coefficients on  $X_r$ .

### Empirical Analysis

The present section of the paper analyzes the empirical estimates obtained from the econometric models (logistic regression) specified in the previous section. The due focus is to examine the impact of expenses on coaching for MBA entrance exam on the choice of the management institute in Indore. To start with a correlation matrix is presented to get an overview of the direction of the different explanatory variable with the dependent variable.

**Table-1**

**Correlation between SELINST & Explanatory variable**

Explanatory Variables	SELINST
FATHER'S EDUCATION	-.085

\*\* Correlation is significant at the 0.01 level (2-tailed).

\* Correlation is significant at the 0.05 level (2-tailed).

### Empirical Estimates of Binary Logit Model where Dependent Variable is the Choice of Selection of Management Institute

In this sub-section an attempt is made to find out the effect of expenses on coaching for MBA entrance on the choice of

management institutes in Indore with help of a binary logit model. The logistic coefficients should be interpreted as the change in the logarithmic odds of the dependent variable associated with a one unit change in the independent variable.

**Table-2**

**Dependent Variables Codings**

Original Value	Internal Value
IIM-Indore	0
Institute affiliated to DAVV	1

**Table-3**

**Categorical Variables Codings**

EXP_EEXA	Frequency	Parameter Coding				
		1	2	3	4	5
Less than 20,000 Rs./NA	372	1.000	.000	NA	NA	NA
20,000-40,000 Rs.	24	.000	1.000	NA	NA	NA
More than 40,000 Rs.	4	.000	.000	NA	NA	NA

Source: Author's self calculation.

Note: Coefficients which are statically significant at 1 per cent and 5 per cent are shaded for ready identification.

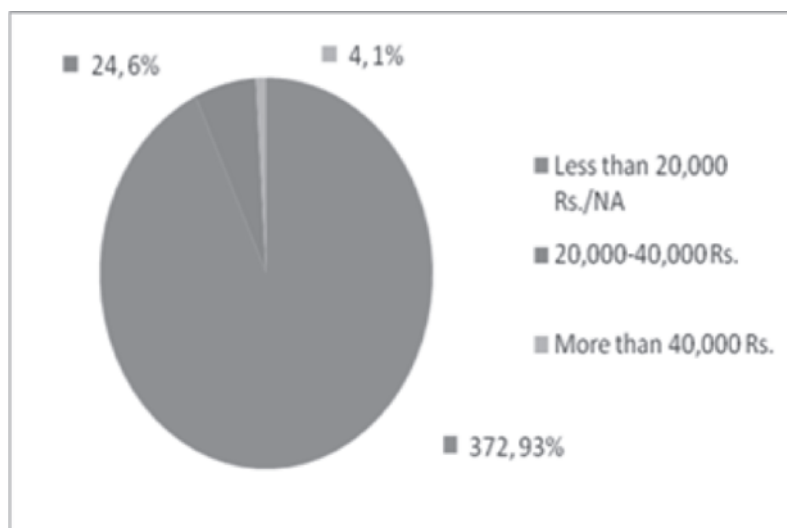
**Table-4**

Variables in the Equation						
	B	S.E.	Wald	df	Sig.	Exp(B)
EXP_EEXA			.000	2	<b>1.000</b>	
EXP_EEXA(1)	.511	21271.505	.000	1	<b>1.000</b>	<b>1.667</b>
EXP_EEXA(2)	2.090	22340.633	.000	1	<b>1.000</b>	<b>8.085</b>

\* Values used in this study, \*\*Significant at the level 1%, \*\*\*value out of range so not included in this study.  
R square = 1.000

The Exp(B) values shows that student whose average expense on coaching for entrance exam is less than Rs. 20,000 and Rs. 20,000-40,000 are more likely to attend

institutes affiliated to DAVV vis-à-vis IIM-Indore after controlling the influence of all other factors, however the coefficient is statistically not significant.



### Summary & Conclusion

The present paper has made an attempt to identify the demand side determinant which is average expense on coaching for MBA entrance exam of students' selection of management institutes between institutes affiliated to DAVV and IIM-Indore in Indore city and to quantify the relative strength and intensity of these influences. The empirical results obtained from logistic regression used for the study reveals several dimensions of the demand for management education in Indore.

1. It has been observed that average expense on coaching for entrance exam are negatively correlated with the student's choice for the selection of Institute.
2. Logistic Regression analysis shows that there is no significant impact of average expense on coaching for entrance exam with the student's choice for the selection of Institute.

A study of this kind can be used as an important planning tool for the concerned policy makers in the analysis of the patterns and determinants of various socio economic factors on the choice of various institutions in Management Education.

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