Chapter 1
Introduction

1.1 Preliminaries

In India, Indore is the largest city and the commercial capital of Madhya Pradesh. Indore is located 190 Km west from the state capital of Bhopal. According to the 2011 Indian census, Indore city has a population of 1,960,631 and is the 14th most populous city in India, with a total metropolitan area of 2.3 million approximately. It is the 147th largest city in the world and one of the richest cities in Central India. Indore is also known as “Mini Mumbai” among native people of Indore, due to its lifestyle similarities with Mumbai.
Indore is home to several educational institutions for pre-primary, primary, secondary, high-secondary, senior secondary, graduation and post graduation studies. Most primary & secondary schools in Indore are affiliated with the Central Board of Secondary Education (CBSE), however a number of schools have affiliation with the Indian Certification of Secondary Education (ICSE) board, National Institute of Open Schooling (NIOS) board and the state level M.P. Board.

**Indore is the education hub of Central India**, It is the only city in India to house both Indian Institute of Management and Indian Institute of Technology. With moderate climate round the year, Indore is one of the best cities to dwell in. Indore has plethora of unique attractions to fetch students from across the nation like quality food, accommodation at affordable rates, and connectivity with major cities (by land, rail and air routes), coaching institutes for almost all the competitive tests. Students and career aspirants from all over Madhya Pradesh, Chhattisgarh, Rajasthan, Gujarat and other neighboring states come to Indore in search of a bright future which Indore has in all. Be it a dream of being an Engineer, or be it a desire to serve the mankind as a Doctor, Indore has something for every dream.

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).
The Indian Institute of Management, Indore is one of the top B-Schools of India. A placement package of close to 1 crore per year is also awarded to selected students in various MNCs every year. IIM Indore has been in top Business schools for a few years now. It provides best management education in Indore and Central India. IIM Indore admission requires a good score in GMAT/CAT tests. For GMAT/CAT preparations. In Indore there are many institutes including IMS, PT, CH-Edge Makers, Swati Jain Academy etc.

Devi Ahilya University, Indore formerly known as Indore University is the well known university of India. Devi Ahilya Vishwavidyalaya (University) provides Bachelors, Masters, PhDs in Management. IMS & IIPS are two important & topmost teaching departments of Devi Ahilya University which provides management education.

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

**Table 1: Number of Seats for MBA institutes in Indore**
<table>
<thead>
<tr>
<th>Institute</th>
<th>No. of Seats(2011)</th>
<th>No. of Seats(2012)</th>
</tr>
</thead>
<tbody>
<tr>
<td>IIM-Indore</td>
<td>450*</td>
<td>450*</td>
</tr>
<tr>
<td>DAVV affiliated Institutes</td>
<td>6600**</td>
<td>7080**</td>
</tr>
</tbody>
</table>

*Source: IIM-Indore Admission Office
**Source: MP-MET examination brochure of year 2011 & 2012

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

The demand for management education, particularly in a cosmopolitan city like Indore depends upon a number of attributes like personal, socio-economic, cultural, and institutional which are broadly classified in two main categories, namely Demand Side and Supply Side factors. The effect of all these determinants 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 determinants of demand for management education with the help of probabilistic models.

The proposed study focuses on impact of various socio-economic factors on the demand for management education across various management institutions in Indore with the help of primary data.

1.2 Objectives of the Study
The Research Objectives of this dissertation are as follows:

1. To study how individual characteristics such as age, gender, religion, caste and marital status act as influencers in demand determinants for management education.

2. To study how household characteristics like siblings, parent’s education, parent’s occupation and family income influence the demand determinants for management education.

3. To study how institutional characteristics like entrance coaching, total household expenditure and highest level of education influence the demand determinants for management education.

4. To study how graduate school characteristics like location, medium of instruction, stream of graduation and percentage of marks influence the demand determinants for management education.

5. To estimate future demand (and its probabilities) of management education in Indore and to have an appropriate control on the determinants of the demand (i.e., prediction and control), at average and individual levels.

1.3 Rationale of the Study
This research is probably one of the first attempts to discover the various determinants of demand in management education with special reference to Indore city and thereby tries to provide a platform for future predictions and control methods with the help of probabilistic models. Till date, there are handfuls of studies available on determinants of demand for education and 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.

Most of the studies have used simple regression model, linear probability model, correlation analysis, t-test and logistic regression while determining the determinants of demand for education and higher education. This study will make use of probabilistic models such as logistic regression in order to find out the determinants of demand for management education. In order to predict and control the demand for management education in Indore, this study will find out the determinants of demand at average and individual level also.

Basically this study will provide a clear understanding of how various factors like individual, household, institutional and graduate school characteristics may act as demand determinants for management education. This thesis will also
contribute empirically and theoretically to the better understanding for future demand for management education in Indore.

1.4 Area of Research

Education is demanded by any human being due to two main reasons. First, education as creation of minimal capabilities, i.e., education is demanded to fulfill the necessary functioning for conducting a normal social life. This motive behind the demand for education is compulsory to live in a society or to maintain a social life. However, there are many individuals who choose to attend school beyond the minimum requirement and this entails for the second reason, i.e., education as investment in human capital. 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.

Education in general and higher professional education in particular is considered as a profitable and rewarding activity as it facilitate the entry into higher status occupations in the labor market and enhancing social mobility and (Aturupane 1993). Hence, the households are expected to seek positive quantities
of education for their members of school going age. However the decision of investing in education by the household on their wards depends on a number of personal, socio-economic, cultural, household and institutional attributes which are broadly classified in two main categories namely demand side and supply side factors. The effect of all these determinants on demand for education differs significantly depending on the pattern and context of the study. Hence it is important to analyze the structure and determinants of demand for education.

The demand for education refers to the desire to participate in education and the ability to be able to pay the costs of the education (OECD 1978, Bowel 1962). The demand for education is generally classified under two broad heads i.e. (i) individual demand for Education (ii) manpower demand for education (Vaizey 1972). The individual demand for education is also referred as private demand/social demand for education which is influenced by various factors like socio-economic aspiration of families, job market reward system, prestige attached to education whereas the manpower demand is related to the requirements of production and economic system. In some other context, it is also classified as social demand for education and private demand for education. Social demand for education reflects the decision of an individual to attend the school or to work whereas the private demand for education attempted at explaining the demand in
terms of returns to education (Blaug 1966, OECD 1979 and Tilak 2006). The
demand for education is affected by its price, income level of the parents and the
price of other level of education like any other commodity in an economy (Belfield
2000, Donoghue 2008). Though it does not imply that education is a consumption
good rather than an investment, it does imply that, education demand can be
realized (Belfield 2000:48). It is commonly believed that education is a ‘difficult’
good to express a demand for it. The demand for education is not a simple
functional relationship between the quantity of education demanded and price,
income or rate of return to investment in education rather it is a functional
relationship between a complex set of institutions which comprise the educational
system in one hand and the society in other hand (Sheehan and et al 1973). The
discussion of demand for education has necessarily been of a general and rather
inclusive in nature and the conventional approach used for analyzing demand for
commodities in a market system cannot readily be applied to education, because
much of the educative service provided is not channeled through market system
(Donoghue 2008). There are mainly three types of uncertainties or risks around the
decision to invest in education which ultimately lead to sub-optimal demand for
education. They are like, individuals may have imperfect information about their
own abilities to absorb, understand and apply the education they receive;
expressing the demand for education as a big or indivisible investment possibly
inducing capital constraint on the final amount of education and finally the future demand for education in the labor market is not known to the consumers as a result many people suffer structural unemployment from having skills which are not in demand (Belfield 2000). As an individual needs to spend some portion of its income to purchase a commodity and from that it gets some utility, similarly he/she has to spend a part of his/her earnings to purchase education (Cheechi 2006). By taking the rate of interest on bonds ($R_b$) as the proxy for market rate of interest, which measures the opportunity cost of education and $R_e$ is the rate of return to education, Mark Blaug has shown the private demand for education curve as:

*Figure 1: The demand curve for education*

Where, $R_b/R_e = \text{Price of education.}$
Similarly, various studies have used different types and forms of demand functions to estimate the determinants of demand for education and taking into consideration those functions, a common demand function for education can be presented in the following form:

\[ DE_t = f (\text{CONST}, P_t, Y_t, E_t, U_{t-1}, SE_t, W_t, C_t, H_t, \mu_t) \]

Where,

- \( DE_t \) = Demand for education
- \( \text{CONST} \) = Constant
- \( P_t \) = price of education and in the present case it is fee net of subsidy
- \( Y_t \) = Real household disposable income
- \( E_t \) = The pool of eligible i.e. those who are able to demand for education
- \( U_{t-1} \) = Unemployment rate in the year \( t-1 \)
- \( SE_t \) = Provisions for education i.e. vector of school and teacher characteristics
- \( W_t \) = Wage rate in the retail sector serving as a proxy for the opportunity cost of taking education
- \( C_t \) = Vector of child characteristics (age, sex, caste, religion, ethnicity, rural/urban, birth order of the child etc.)
- \( H_t \) = Vector of household characteristics (parental education level, per adult household consumption expenditure, area of land holding, total number of siblings in the household below the age of 5, the number of animals (goat and cattle))
μᵢ = Error term. The dependent variable (demand for education) is expressed in different forms like total enrolment in higher education, Eligible Enrolment Ratio (EER) i.e. the ratio of enrolment in higher education to higher secondary pass outs, Gross Enrolment Ratio (GER) i.e. the ratio of total enrolment in higher education to the total population in the age group of 18-24 etc. as per the nature and objectives of the study.

1.5 Plan of Thesis

This thesis will consist of five chapters which can be summarized as follows:

- **Chapter 1: Introduction**
  
  In this chapter, Preliminaries, Objectives & Area of Research of this research has been shown. This chapter also consists of “Plan of Thesis” which shows the summary of whole thesis. Basically this chapter introduces management education in Indore and current demand for management education in terms of number of seats for MBA course available in institutes which are affiliated to Devi Ahilya University & PGP course of IIM-Indore.

- **Chapter 2: Review of Literature**
This chapter is designed in such a way that it will cover all types of previous studies which are related to education. Hence this chapter is subdivided into four parts. First part consists of previous research which are based on determinants of demand for higher education, second part consists of previous research based on determinants of demand for management education, third part consists of those few previous researches on higher education in which probabilistic models were used as an application, & fourth part consists of all those previous research which are based on any type of education (referred as education in general in this thesis) such as schooling education, basic education, shadow education etc.

- **Chapter 3: Hypotheses and Research Methodology**
  - It consists of Hypotheses and Research Methodology. Hypotheses are formulated on the basis of objectives of this study. This chapter also explains “Binary Logistic Regression” method used in this study.

- **Chapter 4: Research Design and Data**
  - It consists of Research Design and Data used in this study. Research design consists of research design steps, sampling plan &
determination of sample size. Sampling plan consists of a formula and a sample size table for a given population, by which sample size of this study is determined. Data consists of raw data, edited data and graphical representation of data.

- **Chapter 5: Empirical Analysis**
  
  - This chapter consists of analysis and findings on the basis of estimated logistic regression equation for individual, household, school, graduate school and institutional characteristics. This chapter also explains the analysis of future demand for management education in Indore with prediction and control. Hence this chapter shows the result of correlation analysis and binary logistic regression used in this study.

- **Chapter 6: Conclusions and Policy Implications**
  
  - It explains final summary and conclusion as well as some limitations of this study. This chapter also consists of implications for future research.