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Determinants of Household Expenditure on Education in Rural India

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NCAER

National Council of Applied Economic Research

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ABSTRACT

Using the NCAER survey data on Human Development in rural India (HDI) (1994), supplemented by other sources, the paper examines the extent of household expenditure on education by different groups of population, the elasticity of household expenditure on education to changes in household income on the one hand and government expenditure on education on the other and the determinants of family expenditures on education. It has been found that there is nothing like 'free' education in India. Household expenditures on education are sizeable; households from even lower socio-economic background—Scheduled Castes/Tribes, low income groups—all spend considerable amounts on acquiring education, including specifically elementary education, which is expected to be provided free to all by the State. Important items of household expenditures consist of books, uniforms and fees. Even in the case of government primary and upper primary schools, students seem to be paying huge amounts of fees—examination and other fees. It is also found that households do not discriminate much against spending on girls' education; substantial differences exist in household expenditures between expenditure on children attending government schools, government-aided schools and private schools. Among the determinants of household expenditures, household characteristics—particularly household income and the educational level of the head of the household—are found to be important. Other important determinants include demographic burden of the household (size of the household), caste and religion. Generally, gender is believed to be a very significant determinant of household expenditures on education. This is not necessarily true in all cases. School related variables chosen—the incentives such as mid-day meals, uniforms, textbooks and stationery, etc., and the availability of school within the habitation—are also quite important. Coefficients of elasticity clearly show that government expenditures and household expenditures do not substitute each other, instead they complement each other. So if the government wishes to mobilise household finances for education, it is important that the government increases its own allocation to education considerably. Conversely, and more clearly, if government budgets on education are reduced, household expenditures may also decline resulting in severe under investment in education.

JEL Classification

C3, D1, H52, I22, I28, R20

Keywords

Family/Household Expenditure on Education; Government Expenditure on Education; Interstate Variations; Gender Differences; Discrimation

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CONTENTS

1. HOUSEHOLD INVESTMENT IN EDUCATION

Investment in education is incurred in two domains: individual and institutional. Together they constitute the social domain (Majumdar 1983). Individual investment refers to the investment made by the students and/or their parents on their education. So it is also referred to as household or family investment in education. Institutional investment is referred to as public and if properly defined, government investment in education. Both public and household investments in education are highly significant not only because of their magnitudes, but also because of their nature and characteristics. While public investment can provide educational facilities, only household investment will enable its utilisation. The two are so inter-related and inter-dependent that, in the absence of either of them, there is likely to be under allocation of resources for education (Panchamukhi 1989). "Unless the two kinds of investments match there can be only empty or over-crowded classrooms" as Majumdar (1983, p. 28) rightly observes.

While there is a good and reasonably reliable database on public expenditures on education in India, information on household expenditures is extremely limited. Serious attention has not been paid towards collecting data on household expenditures on a regular basis over a long time, as it was considered too trivial to bother about, and/or that such information is not necessary for the planning of public resources.[1] In short, there is not much research on the extent of household expenditure on education and on determinants of household expenditure on education. But it is increasingly realised that ignoring household investment proves too costly for educational planning in the long run. Lack of detailed knowledge on these aspects leads to incorrect presumptions on the extent, nature and quality of household level investments in education. For example, it is most generally presumed that elementary education is provided free; households do not spend much on elementary education; there is willingness to pay for education on the part of the households; this is true for all groups of population—rich and the poor alike; and the willingness to pay remains largely untapped. Such incorrect presumptions also contribute to formulation of inefficient and unsound policies on fees, scholarships and subsidies as it seems to have happened in India. Hence studies on household investments in education assume much significance. The present study engages the questions—What constitutes household investment in education and why is it made?

Figure 1.1 presents the taxonomy of costs of education. Household costs include direct or visible and indirect or less visible costs. The indirect costs refer to opportunity costs, also known as foregone earnings. The direct costs include payments made to schools such as tuition

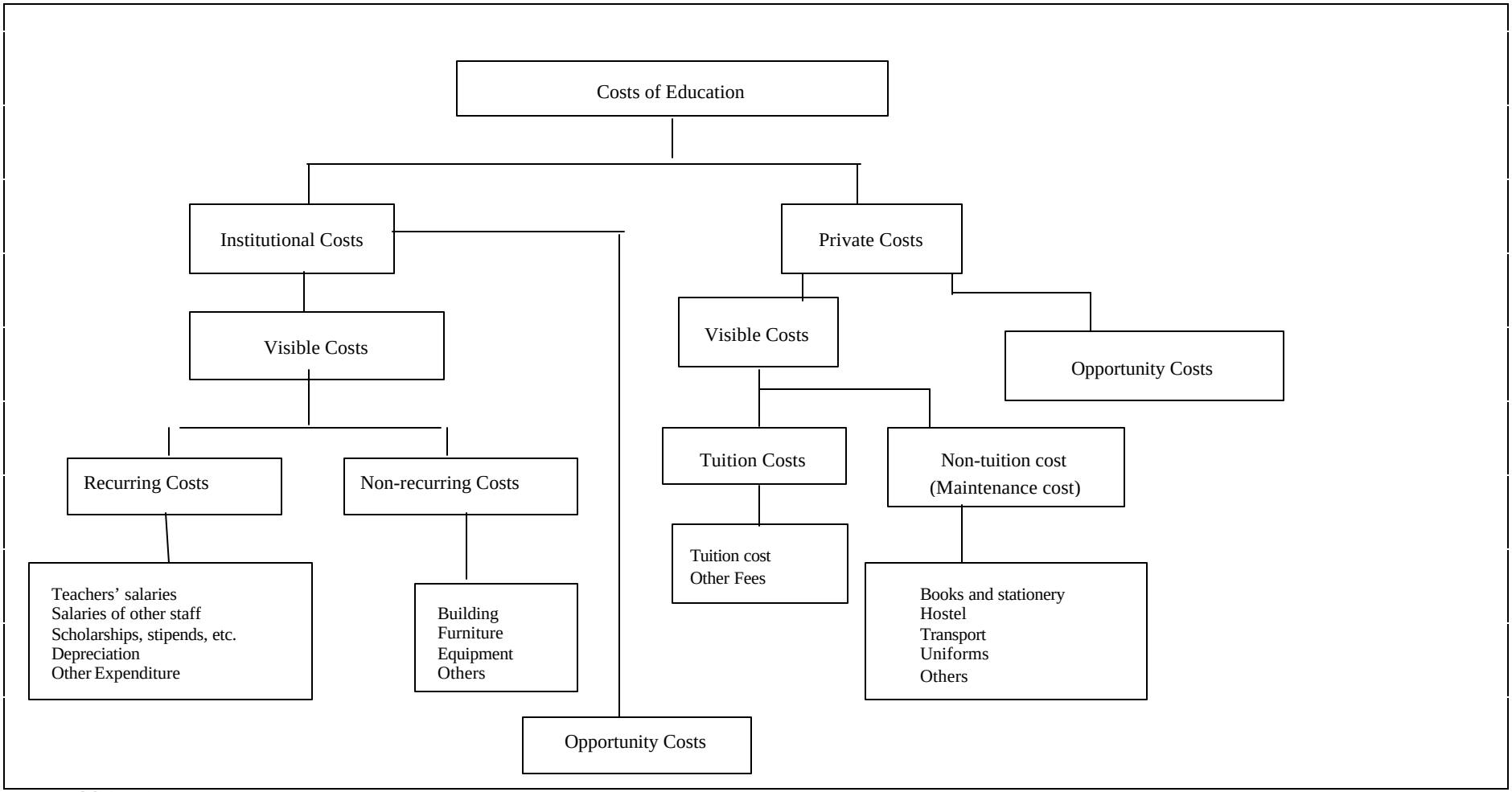
[1] For example, household expenditures except for fees, do not feature, in the massive report of the Education Commission (1966).

fees, examination fees, development fees, registration fees and several other types of fees and charges, and other costs, which are not necessarily paid to the school. The latter includes expenditures on textbooks and stationery, uniforms, transport, hostel, private tuition, etc. The present study is confined to the direct costs incurred by households in educating their children. Indirect or opportunity costs of education are important and earlier research has revealed that they are also sizeable (Tilak 1988). But the present study is constrained to ignore this aspect.

The present study is primarily concerned with the question: Why do households invest in education?

Household investments in education are influenced by a wide variety of factors. Household decision-making for investment in education can be understood at least partly in terms of economic factors. Primarily households invest in education, as they anticipate economic and non-economic benefits from education. The net economic benefits of education are measured familiarly in terms of internal rates of return to education. Despite several limitations that the method of rate of return analysis carries with it, such estimates are found to be useful in educational planning, including the decision-making for investment both by the households and the public domains. Estimates on rates of return to education are available in India and they are found to be generally high both to the individual as well as to the society at large (Tilak 1987).

In the life cycle model of household decisions at the micro economic level, if rates of return to education are high, households may choose to refrain from present consumption and invest in education in order to increase the earnings capacity and other benefits in future. But even if the expected private rates of return—monetary and/or non-monetary—are high, households may not be spending on education constrained by economic, social and cultural factors.



Source: Tilak (1988).

Fig. 1.1: Taxonomy of Costs of Education

If the income of the household is low, effective demand for education can be low and there can also be serious under-investment in education. Families may or may not be willing to borrow money for education, as education is 'risky'; and more over, the credit market for education is yet to be developed in many developing countries like India. Thus it is mostly felt that the levels of investment of households in education are related to income levels. Generally it is found that high-income households spend more on education than poor income households.

Households may feel compelled to invest in education, if public efforts as reflected in the quality of physical and human infrastructure available in schools are perceived to be inadequate. Under such circumstances even poor households spend on education out of compulsion. So the poorer the quality of infrastructure and other facilities in public schools, *ceteris paribus*, the higher could be the level of expenditure of the households on education. The quality of school infrastructure could be measured in terms of a large number of indicators, such as its availability within the habitation, the type of buildings, the quality and quantity of teachers, etc. The quantity and quality of school facilities could also be measured in terms of public expenditure per student. If the facilities in public schools are better, families may not feel the need for incurring expenditure. Therefore, it can be argued that household investments substitute public investments in education, as they fill the gap in investments caused by cuts in (or inadequate) public investments.

On the other hand, it is also argued that if government spends well on education and provides good quality education, households feel enthusiastic and would willingly contribute to education and thus supplement public efforts. In short, household and government investments in education are related, either substituting each other or complementing each other. The set of school related factors seem to be important in determining the extent of household investments in education.

Due to various social and cultural reasons, households might spend or may have a preference to spend on the education of their sons than daughters or *vice versa*. In fact, several other household characteristics, such as religion, caste, household size, educational levels of the parents, occupational levels of the parents, etc., which could be called social, cultural, educational, occupational and other factors, might also influence the nature and quantum of investments that the households make in the education of their children.

High levels of household investments in education are favoured mainly on three grounds:

- Government lacks adequate resources to finance education and hence households have to necessarily finance their education at least partly.

- The belief that household expenditures, such as fees would improve efficiency in the system, by making the children more serious with studies.
- The necessity to fully exploit the ability and willingness of households to pay for education as reflected in the household expenditure on education.

On the other hand, there are a number of strong arguments to be heard against household expenditures:

- The phenomenon of household expenditures, particularly on lower levels of education is against the letter and spirit of free and compulsory education in many countries, for example, as enshrined, in the *Constitution of India* and in several UN declarations, including *Convention of the Rights of the Children*.
- Household expenditures reflect and perpetuate inequities in the system with the rich households spending more and poor households spending less on education.
- Household expenditures interfere with demand for education; high levels of household expenditures may force the poor not to opt for schooling at all.
- High levels of household expenditure on education reflect high levels of inefficiency on the part of the government in providing it.
- Household expenditures on education is inconsistent with the very nature and philosophy of education as it makes education a commodity to be bought.

The relationship between public and household expenditures is also noted. Pryor (1968) argued that if the elasticity of substitution of household for public expenditures is low, then a larger share of public financing should result in the production of a greater relative amount of education; if the elasticity of substitution of household for public expenditure is unity, then the way in which education is financed should make no difference in the relative amount of education that is produced; but if this elasticity is below unity, then public financing of education should result in a higher ratio of total education expenditures to the GNP, other things remaining equal.

The purpose of the present study is to examine various dimensions of household expenditures on education in India. In the process, it is also examined which phenomenon is important—willingness to pay or the compulsion to pay for schooling. To be precise, it is intended to examine the influence of various factors on household investment in education.

1.1 Objectives of the Analysis

The following are the main objectives of the study:

- to quantify the extent of household expenditure on education in India;
- to analyse the pattern of household expenditure in detail, by gender, type of school, household characteristics and State;
- to examine the determinants of household expenditure on education; and
- willingness to pay *versus* compulsion to pay—which is a more important phenomenon in household spending on education?

1.2 Database of the Study

A reasonably reliable and sound database is available in the case of public investments on education in India from official sources.[2] However, data on household investments are scarce and hence most analyses of investment in and financing of education are confined to public expenditures only. The database on household expenditures on education in India is too restricted. There are two main sources for any data available on household expenditure on education in India. First, the data published every year by the Department of Statistics, Planning Commission on household expenditures—'private final consumption expenditure'—on education based on the estimates made by the National Sample Survey Organisation (NSSO) in the *National Accounts Statistics* (NAS). But NAS does not give any details regarding the composition of the expenditure by items, the levels of education, etc. NAS, however, provides time series information, besides covering the whole nation. Earlier it used to put together expenditure on education, recreation, culture and 'others', as a single category. But of late, data on education are separately made available. More importantly, the NSSO occasionally conducts rounds concentrating on education. One such round was the 42nd Round conducted in 1986–87.[3] The survey was repeated in the 52nd Round (1995–96).[4] These surveys provide a lot of detailed information on participation in education and household expenditures on education, by levels of education, by items of expenditures, by different characteristics of population—caste, region, household expenditure, etc.

The second important source of information on household expenditure on education is surveys conducted by researchers and research organisations. Many such surveys, particularly those conducted by individual researchers, are sample surveys conducted in small regions—a district or so (e.g., Tilak 1987)—and were conducted in wider contexts of estimation of

[2] *Education in India* and *Analysis of Budget Expenditure on Education* (both published by the Ministry of Human Resource Development, Department of Education, Government of India) are two major sources of statistics on government expenditures on education.

[3] The results are published in NSSO (1991 and 1993).

[4] Some of the main results are published in NSSO (1998).

household and social costs of education and estimation of rates of return to education. A couple of statewide and even nationwide sample surveys were also conducted by some organisations in this context. For example, Panchamukhi (1990) conducted a sample survey in Maharashtra, Rajasthan and Karnataka, based on which estimates were generated on the extent of private sector—households and private school management sector—expenditures on school education in various states in India in 1986–87 and 1987–88. The National Council of Applied Economic Research (NCAER 1994) conducted a national survey on human development in India (HDI) confining to rural areas in as many as 16 major states. This survey was conducted realising the need for a recent survey similar to the NSSO's 42nd Round and it was conducted in 1994 before the NSSO's 52nd Round was launched in 1995–96. UNICEF has more recently launched another survey in eight major states in India to estimate household expenditures on elementary education.

The present study proposes to use the household survey, conducted by the NCAER in January–June 1994. The HDI survey concentrated on rural India and covered 33,230 households living in 1765 villages in 195 districts in major states, covering all the regions in the country—north (Haryana, Himachal Pradesh and Punjab), upper central (Bihar and Uttar Pradesh), lower central (Madhya Pradesh, Orissa and Rajasthan), west (Gujarat and Maharashtra), east (West Bengal and the states in North-eastern Region) and south (Andhra Pradesh, Karnataka, Kerala and Tamil Nadu). In all, there were 16 major state categories (putting all states in the North-eastern region into one category and 15 other states).[5] The survey yielded valuable information on poverty and relative incomes, distribution of income, ownership of physical assets by the households, educational, health and demographic characteristics of households and household expenditures on various categories including food, security, education and health. The survey also yielded a detailed profile of villages surveyed with respect to the infrastructure available in the villages.[6] So far, educational aspects have not been probed in depth using the survey data.[7]

1.3 Analytical Framework of the Present Study

Apart from detailed analytical tables, and estimation of elasticity coefficients, the main analytical tools used in this study include household expenditure functions. Expenditure functions are regression equations that relate individual household expenditures to their

[5] Based on the household level observations, individual level observations are generated for the present study. As a result, one can find a larger number of observations than the number of the households in the regression equations.

[6] Valuable descriptive results of the survey, including details on the sample survey are published in Shariff (1999).

[7] Important exceptions: Sipahimalani (1998) examines the gender-based perspectives in participation in schooling; and Tilak and Sudarshan (2001) examines issues relating to private schooling – both are based on the HDI survey.

determinants. From the point of view of empirical investigation and policy use, the expenditure functions facilitate analysis of household expenditures in a framework suitable for econometric estimation. The models that form the basis for the present and for that matter for most of the literature on household decision-making behaviour, are the models developed by Becker (1967), and by Behrman, Pollak and Taubman (1982). The former is mostly an individual maximising model and the latter is described in the literature as the 'family' model. Often, both are considered and in fact it may not be possible to distinguish between the two.[8] In the individual model, decisions regarding investment in education are mainly made on the basis of efficiency considerations; while in the family model, there may be, in addition, several other considerations, including equity between several children of the family—sons and daughters, younger and older children, etc., (or prejudices and biases, e.g., say discrimination against girls). Decisions regarding investment in education in general and more particularly at lower levels of education are made by families and rarely by the individual concerned. Hence, family/household expenditure function is considered appropriate in the present context.

Estimation of expenditure function in a cross section analysis involves observation of characteristics such as household income, of a large number of households and/or pupils at a point of time. To the extent that the variation among households/students in these characteristics is correlated with variations in the levels of expenditures on education, one might conclude that a change in a certain characteristic, such as household income, may be responsible for a change in the levels of household expenditure on education. More specifically, the conceptual model underlying a typical earnings function can be expressed as a functional relationship that relates expenditures to its determinants:

$$HHEX = f(X) \qquad (1)$$

where HHEX refers to household expenditure on education, and X a set of independent variables.

Equation 1 takes the following functional form

$$ln\ HHEX = \alpha + \beta_i X_i + \in \qquad (2)$$

where *ln* HHEX refers to logarithm of annual household expenditure on education, β_i is the regression coefficient to be estimated that measures the extent to which various variables X_i influence the household expenditures on education, and $\in$ the error term that is to be estimated by the equation. The regression coefficient β_i indicates the change in the levels of expenditures associated with a one-unit change in the independent variable of interest. α is the intercept

[8] See Ermisch and Francesconi (2000) for discussion on the two methods.

term; it gives the mean effect on the dependent variable of all the variables excluded for the model; or it is simply interpreted as the average value of the dependent variable when all the explanatory variables are set equal to zero.

In the first stage, using the estimates on household expenditures on education based on the survey, and secondary data on a few important variables on states, the model is estimated with a state as an observation. We have data only on 16 major states/state categories in India. In the next stage, household level data are used. The variables selected in the two cases are marginally different. This is primarily dependent upon the availability of data.

Each of the analyses—one based on state level data and the other on household level data—has some advantages over the other, particularly in including important variables and thereby in improving the model, and certain limitations as well. For instance, the state level analysis enables us to use secondary data available on public expenditure on education, facilities in schools, economic development of the state, etc. Some of these variables could not be included in the household level analysis. But in the household analysis, a variety of individual and household characteristics could be included, which obviously do not figure in the state level analysis. So the two analyses are hoped to complement each other and help us better in understanding the determinants of household expenditures on education.

1.4 An Overview of the Existing Literature

The view, that the government meets the entire expenditure on education and household expenditures on education in India are negligible and hence could be ignored, prevailed until some information was made available on the extent of household expenditures. From a quick look through the meagre research available on household expenditures on education (for example, Panchamukhi 1965, Kothari 1966, Shah 1969), it was clear that the earlier presumptions were wrong. It was found that household expenditures were sizeable. Panchamukhi (1965) and Kothari (1966) estimated the total costs of education, that included not only public or government costs, but also household costs, including opportunity costs of education. Accordingly they found that the total costs of education constituted about 6 per cent of GNP in 1959–60. Based on a small sample of students in Baroda, Shah (1969) estimated tuition and non-tuition costs incurred by the families on elementary education, by income groups. Based on another small sample survey in Andhra Pradesh, Tilak (1987) estimated that household expenditures alone constituted 3.5 per cent of GNP in India in 1979–80.

National level estimates based on *National Accounts Statistics* also reveal that household expenditures on education in India are sizeable, though not as high as the earlier researchers estimated. For instance, these expenditures constituted 2.5 per cent of GNP in 1970–71 (see Tilak 1985).

Very few studies are available on estimating total costs of education in India that include government and household investments in education. Unfortunately, no elaborate and detailed estimates for the recent periods are available except a couple of studies conducted in different contexts (e.g., Ram and Schultz 1979 and Tilak 1988). According to Tilak's crude estimates, household expenditure on education formed 2.4 per cent of GNP in 1979–80, the opportunity costs of the students another 4.2 per cent—in all, the household investments formed 6.6 per cent of GNP and the government investment 3.9 per cent. Thus the total social investment in education in India was of the order of about 10 per cent of GNP. There is a need to collect more detailed information on household investments in education on a regular basis and more detailed research on the determinants of public and family investments in education in India.

Tilak (1991) has compiled the time series estimates of household expenditures on education in India between 1960–61 and 1984–85, based on the NAS and compared them with estimates on public investment in education. It was found that households do not respond more promptly than public bodies to educational needs contrary to what Schultz (1981) has argued. The elasticity of expenditure on education, measured as percentage increase in household expenditure on education for a unit increase in total expenditure of the households is much less than the elasticity with respect to government expenditure. In other words, a small increase in income level of the government results in more than a proportionate increase in the government expenditure on education, while a similar increase in household income leads to a less than proportionate increase in family expenditure on education.

Shri Prakash and Chowdhury (1994) used a longer time series data set of the NAS, and found higher income elasticity for households (1.03) than for public authorities (0.53), but concluded that education was a 'superior' good both for public and private authorities. With a truncated data set then available (1970–71 to 1979–80), Tilak (1987, 1988) came out with a different set of estimates on elasticity.[9]

Though occasional surveys conducted by NSSO and NCAER do provide valuable details, they do not facilitate any systematic comparisons overtime, unless they are repeated at regular time intervals. The surveys conducted by individual researchers (e.g., Tilak 1987, Panchamukhi 1990) provide several details, but they do not allow time series comparisons, besides being confined to small regions.

On the whole, research on household expenditures on education in India is very limited. The issue has not attracted wide attention of researchers so far. Research examining the

[9] Tilak (2000b) made a brief analysis of determinants of household expenditure on education, based on the published data of the 52nd Round of the NSSO. See also Tilak (2001a, b, c).

determinants of household expenditures on education is extremely scanty. In fact, no single study could be found specifically on Indian education, though many analysed demand for education or participation in schooling with the help of a large set of economic, social and cultural factors.[10]

However, in a few advanced countries, the problem received some attention. There is a burgeoning research conducted in developed countries on the extent of household expenditures on education in a few developing countries, that can be referred to as research on willingness to pay for education, conducted broadly in the context of exploring the scope for cost recovery.[11]

Broadly within the framework of family investment decisions (Becker 1967, 1981) researchers also examined the household investment decisions in education. McMahon (1984) developed a future-oriented family utility function to explain why families invest in education in USA. His investment demand and supply functions included variables on expected non-monetary returns, family disposable income, tax subsidies, student loans, family size (number of brothers and sisters), order of birth, and the demand function was estimated with the help of academic scores, and schooling level of parents. Ability of the children in studies and mother's education were found to be very important.

Williams (1983) tries to explain the trends in private expenditures on education in Australia with the help of government expenditures, real price index of the cost of education, real personal disposable income and the demographic term.

The lack of empirical studies on household expenditures on education, more specifically on determinants of household expenditures on education in India, is being increasingly felt in a period when public budgets for education are dwindling and household and private finances are being looked upon with hope. It is argued that households have the ability and willingness to pay for education. This is argued to be true not only in the case of higher education, but even in the case of elementary education; and that the potential willingness to pay for education can be tapped, so that government funds for education can even be reduced and reallocated in favour of other sectors. Counter arguments are also being made in this context. Public policies are being formulated. But there is no systematic evidence on this and related aspects. There is indeed a major gap in research. The present study is a modest attempt to fill this gap to some extent.

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[10] For example see Bhatty (1998) for a recent survey of the literature. Other recent studies include Duraisamy (1998), Dreze and Kingdon (1999). See also Tilak (1996, 2000a).

[11] For example see Gertler and Van der Gaag (1988), Gertlier and Glewwe (1990, 1992), Tan, Lee and Mingat (1984). Much of this research originated from the World Bank. Other recent studies on household expenditures include Mehrotra and Delomonica (1998) and Bray (1999).

The empirical analysis here is organised in two sections. Section 2 provides a descriptive and analytical account of household expenditures on education by several household characteristics. Section 3 contains an econometric analysis that examines the determinants of household investments in education. A summary is presented along with a few concluding observations in Section 4. An important caveat of the study may be mentioned here: the study is concerned with household expenditures on education rather exclusively. Closely related aspects such as participation or non-participation in schooling are deliberately kept outside the scope of this study.

2. SOME STYLIZED FACTS ON HOUSEHOLD EXPENDITURES ON EDUCATION IN INDIA

Based on the rich HDI survey of the NCAER, a large set of tables is generated, which highlights several important dimensions of household expenditures on education in rural India. Some of the findings are familiar, many are not so familiar and at least a few are new. Some puzzling features could also be found. These are summarized here as a set of stylized facts. While the HDI survey provides valuable information on all levels of education, the focus here is on elementary education—primary and upper primary (middle) education. However, reference to other levels of education is not altogether avoided.

2.1 Household Expenditures on Education in Rural India

Households spend a lot on acquiring education even in rural India. Household expenditures on education are quite sizeable. A typical household has to spend Rs.341 per child per year on its primary education.[12] The corresponding figure increases to Rs.474 if the child is enrolled for upper primary education. On an average, a household has to spend as much as Rs.387 per year on acquiring free elementary education in rural schools. These figures are of course actual expenditures incurred by the households and not what the households would like to spend on the education of their children, as many households do not spend adequately on good clothing for children or on purchase of sufficient number of textbooks and stationery, etc. If such aspects were considered, the estimate would obviously be much higher.

The estimates based on the HDI survey are somewhat comparable with alternative estimates now available. For example, while according to the HDI survey, the household expenditure amounts to Rs. 341 per child per annum in rural primary schools the corresponding estimate is Rs. 318 according to the PROBE (1998) Survey in the north Indian villages in 1996. The estimate for the whole of rural India based on the 52nd Round of the NSS was Rs. 297 in 1995–96.[13]

[12] Primary education refers mostly to classes I-V; upper primary education to Classes VI-VIII; and elementary education to Classes I-VIII. In a few states, viz., Assam, Gujarat, Karnataka, Kerala and Maharashtra primary education refers to classes I-IV and upper primary education to classes V-VII; and in Andhra Pradesh upper primary education refers to Classes VI-VII and accordingly in all these states, elementary education refers to Classes I-VII only. See MHRD (1996).

[13] See Table A2.1 for more related details.

Household expenditures on education increase by increasing levels of education. It is least in the case of primary education. While the families have to spend on an average Rs. 788 per child for secondary education[14], Rs. 1489 in the case of higher education[15] (Table 2.1).

Household expenditures also differ widely depending upon which type of school the child goes to—government, government-aided or private (Fig. 2.1).

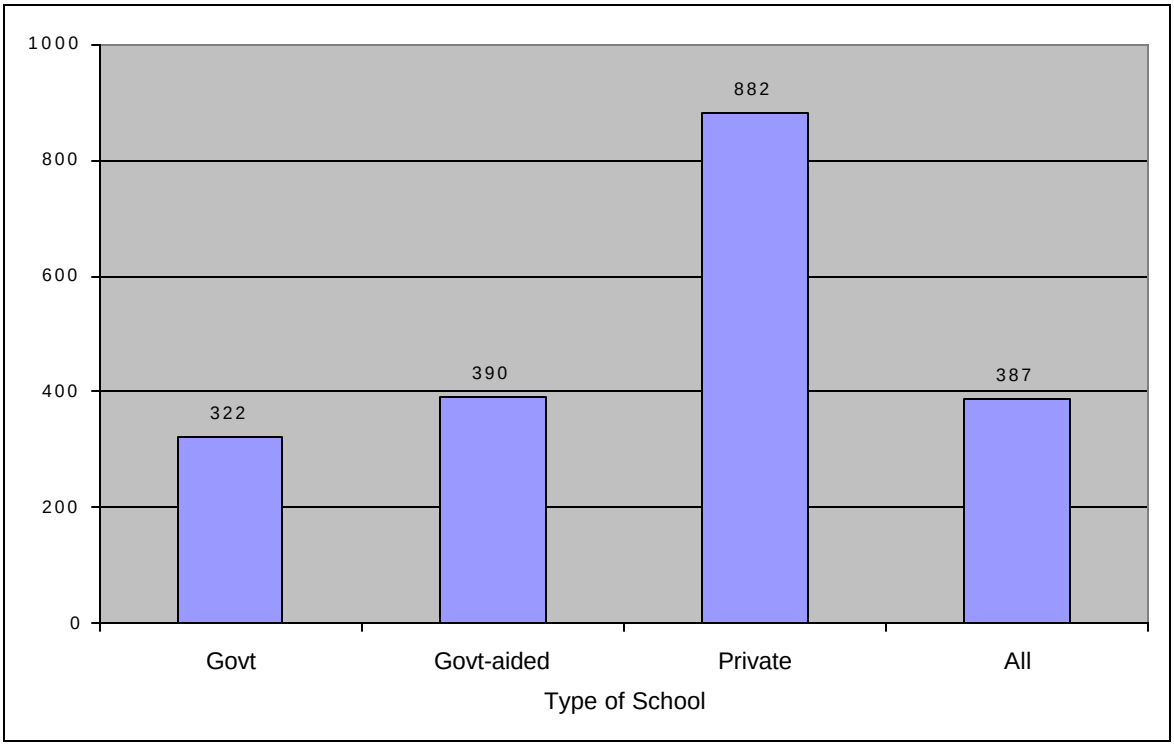

Fig. 2.1: Household Expenditure on Elementary Education (Rs.) per Student in Rural India, by Type of School

It may be noted that government schools here include not only schools run by government, but also schools run by local bodies such as Municipalities, Panchayats, Zilla Parishads, Mandals and other local layers of administration. Government-aided schools, which are normally referred to as private-aided schools, include privately managed schools that receive aid from the state; and private schools here refer to only those schools that are not aided by the state, unless otherwise mentioned.[16] Elementary education in government schools require households to spend Rs. 322 per child; in a government-aided school it would increase by about 20 per cent and in a private school it is nearly three times higher. In other

[14] Secondary education includes senior/higher secondary level also.

[15] 'High' education level in the tables refer to *higher* education, that is, post-secondary education.

[16] The HDI survey has not made a distinction between recognised and unrecognised private schools. But it does include unrecognised schools.

words, household expenditure per student is the least in government schools, followed by government-aided private schools and it is the highest in case of private schools. This pattern is true more or less in the case of all levels of education.

Of the various components of expenditures on education, books and uniforms together account for a major portion, that is, above 70 per cent in government schools (Table 2.2). The second important item is school fees that includes examination and other fees. Private coaching is also an important item. Even in the case of elementary education, one finds a more or less similar pattern. Books, stationery and uniforms together account for 80 per cent of the total household expenditure in government schools. Fees constitute 12 per cent of the total expenditure in government schools and as high as 35 per cent in private schools[17] (Fig. 2.2). Interestingly, one notices that expenditures on different items are inter-related, as the coefficients of correlation given in Table A.2.2 indicate.

Unfortunately the HDI survey clubs several components of expenditures into a few categories. All fees, including examination, tuition and other fees are grouped into one item; similarly expenditure on books, stationery and uniforms are put into one category.

[17] Table A.2.3 gives similar details for all levels of education together and Table A.2.4 gives coefficients of correlation between them.

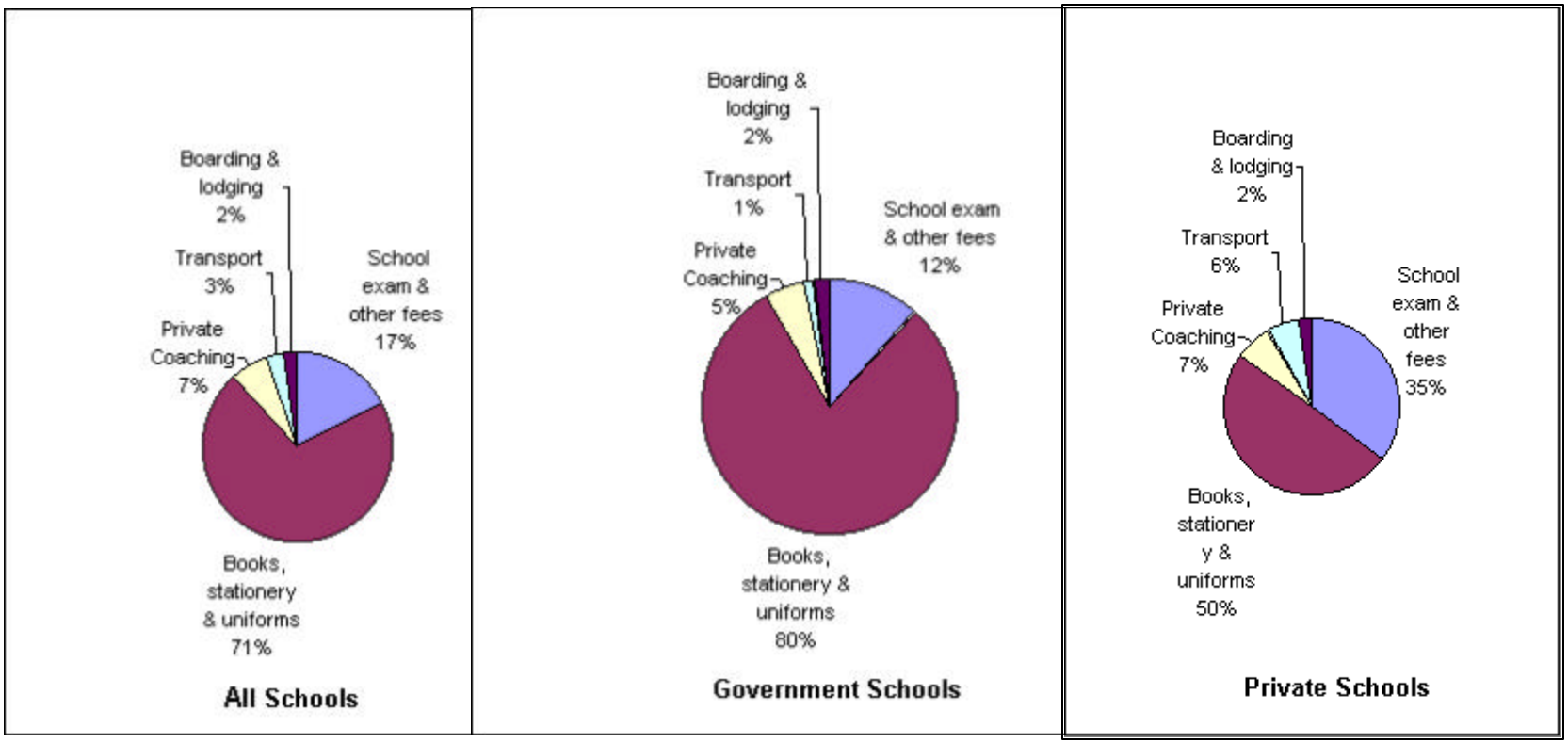

Fig. 2.2: Percentage Distribution of Household Expenditure on Elementary Education in Different Types of Schools, by Items

Disaggregation would have been useful to find out, say for example, how much tuition fee is charged in government and private schools; or how much is the expenditure separately on uniforms, books, etc.

Households have different levels of expenditure on the education of their male and female children. Gender differences exist and they are normally against girls. The preference for households to invest in the education of male children than that of the female children is widely prevalent. The pattern is the same whether children are enrolled in government or private schools. Such differences increase by increasing levels of education. While on the whole, households tend to spend less per student on the education of females than on males, this observation needs to be qualified further.

Household expenditures do not differ much by gender in the case of children attending government schools; but the gender differences, measured as a simple coefficient of discrimination, [18] are sizeable in the case of children attending government-aided or private (unaided) schools, where the expenditure levels are generally higher for both boys and girls (Table 2.3). When it comes to higher education, gender bias seems to be more clearly noticeable in government colleges, less in government-aided and further less in private colleges. Parental prejudices against girls seem to decline, once girls go to college.

Household expenditures on education per student also differ by caste group. The expenditures on education are less in the case of the Scheduled population (Scheduled Castes and Scheduled Tribes together) than in the case of others (non-Scheduled population). Generally the expenditures are less in the case of Scheduled Tribes compared to Scheduled Castes, but this pattern does not hold always, particularly if we examine the expenditure patterns in private schools (Table 2.4).

It is important to stress that the socially and economically weaker sections like the Scheduled Caste and Scheduled Tribe households also spend considerable amounts on the acquisition of education, including primary and upper primary education. Scheduled Castes incur more expenditure than Scheduled Tribes and others incur even higher expenditure.

Similar differences are noticeable between several religious groups as well (Table 2.5). While Muslim households spend the least on education per student, followed by Hindu households, Christians and other minorities tend to spend higher amounts. Differences in

[18] The coefficient of discrimination, D, is defined as $(HHEX_m / HHEX_f) - 1$. HHEX refers to household expenditures on education, and the subscripts m and f to males and females respectively. This is similar to the coefficient of gender discrimination proposed by Becker (1957). Higher the value of the coefficient, higher is the degree of discrimination against girls and *vice versa*. If the coefficient is zero, it means no discrimination. A negative value of the coefficient means discrimination against boys or discrimination in favour of girls.

household expenditure by religion are marginal in government schools, high in government-aided schools and still higher in private schools.

The pattern of household expenditure per student on elementary education by household income groups[19] reveals certain interesting aspects: *The differences between different income groups are not high in the case of government schools; they are higher in the case of government-aided schools and strikingly higher in the case of private schools*. What is the wealth effect on household expenditure on education? A simple measure of the wealth effect on household expenditures, that is how much do the wealthy spend on elementary education compared to the bottom income group,[20] highlights significant effects of wealth on the levels of household expenditures on education. The available evidence presented in Table 2.6 confirms a severe degree of unequal effect of wealth. The wealth effect seems predominant in private schools and also government-aided private schools, than in government schools.

From the pattern of household expenditures, it appears that all those who go to government schools spend more or less the same amounts on education; perhaps there is no scope for much unequal spending on education, as most schools are alike; but interestingly those who go to private schools spend varied amounts (Fig. 2.3). In other words, there is a homogeneity among the households of different income groups in spending on education in government schools, but in private schools there is much more heterogeneity. This may be possible as private schools consist of highly divergent types of schools, ranging from unrecognised teaching shops to expensive formal recognised boarding schools, necessitating different levels of expenditures by the households.

[19] Households are grouped into ten household income categories based on their annual income levels (from all sources). Generally doubts are expressed on the reliability of estimates on household income based on household surveys. The HDI survey also collected data on various economic productive and unproductive assets possessed by households and an asset index was generated. The simple coefficient of correlation between household income and the weighted economic productive asset index is high, 0.832, suggesting that household incomes closely correspond to the economic levels of the households.

[20] It is defined as follows: Wealth Effect = ($HHEX_t$ / $HHEX_b$) – 1, where HHEX refers to household expenditure on education, subscripts t and b refer to the top and bottom household income groups respectively. This is similar to the one developed by Filmer and Pritchett (1999).

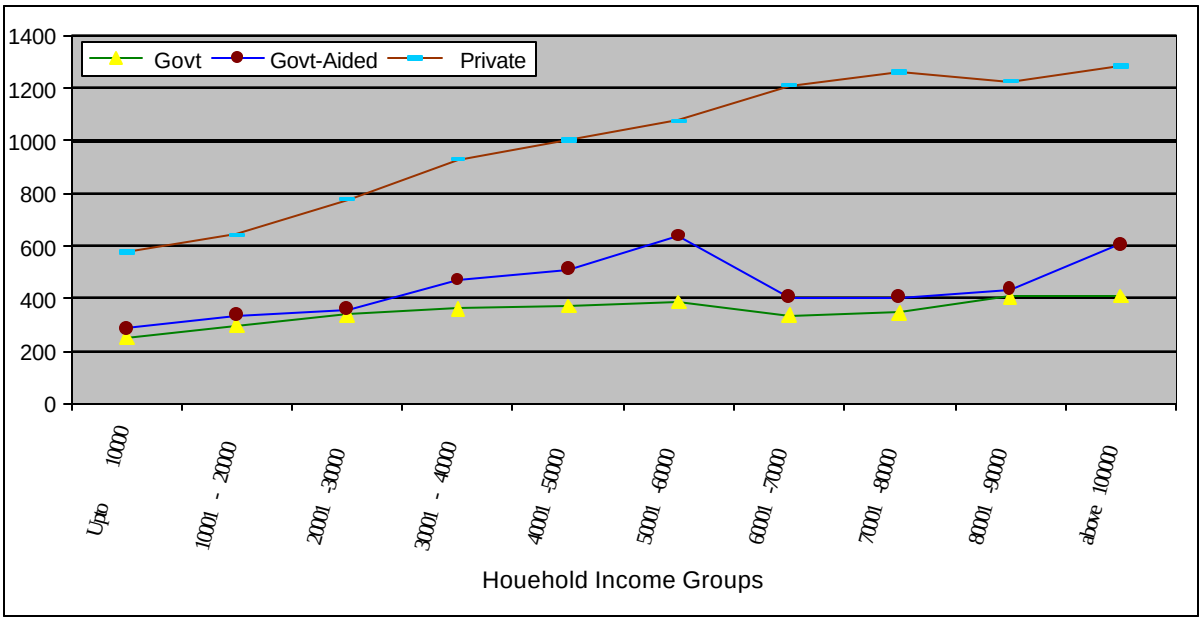

Fig. 2.3: Household Expenditure on Elementary Education per Student in Various Types of Schools, by Household Income Groups

Differentiating households by the major source of income—agricultural income or non-agricultural income—does not reveal any highly systematic patterns in household expenditures. There is not much systematic difference in the levels of spending between the two categories of households among different income groups.[21]

Households belonging to any occupational group spend agricultural labour *considerable amounts on education*. Even families depending on agricultural labour are found to be spending high amounts on elementary education of their children. Differences by occupational groups in household expenditures on education in government and government-aided private schools are not high; but they are high in private schools (Table 2.6). Households belonging to the qualified professional occupational groups spend the highest, followed by those involved in organised trade and business (Fig. 2.4). Any substantial systematic differences could not be noted in the levels of household expenditures on education between several landholding classes, though medium size land owning families tend to spend the highest amounts in private schools.

[21] See Table A.2.5 in the Appendix.

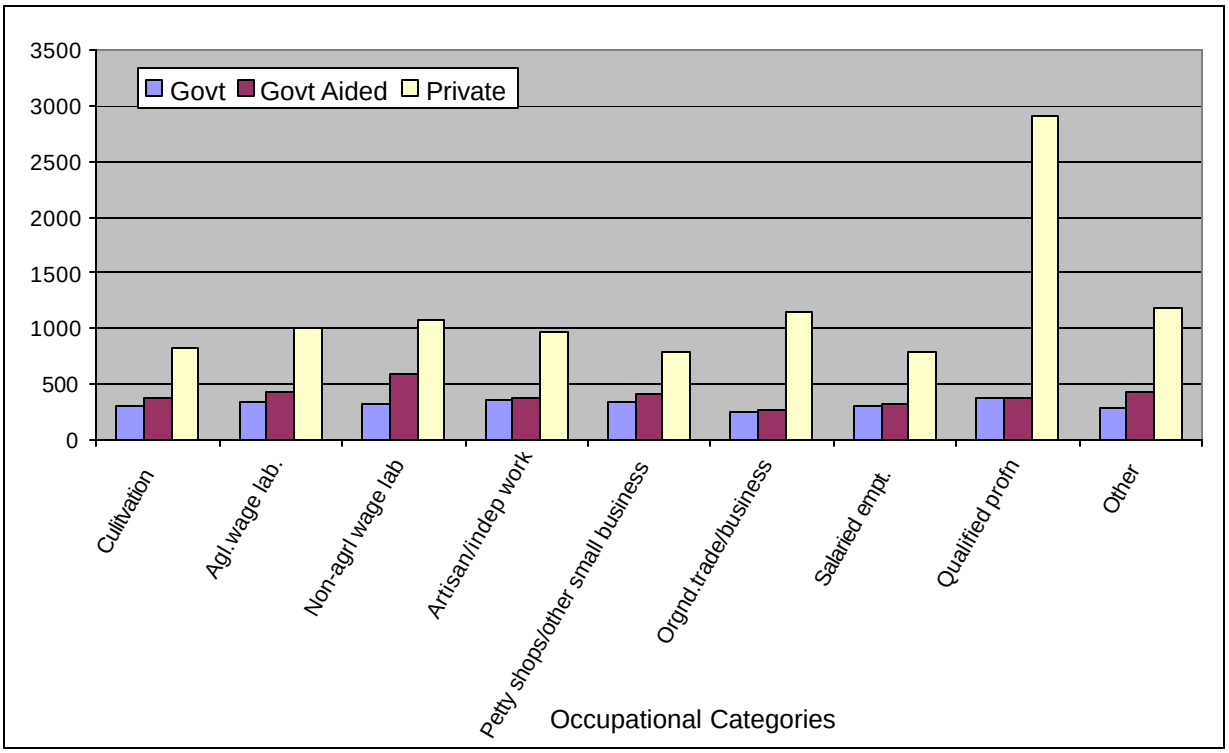

Fig. 2.4: Household Expenditure on Elementary Education per Student in Different Types of Schools, by Occupational Categories

The differences between several landholding classes in their spending on the education of their children enrolled in government and government-aided schools are rather negligible (Fig. 2.5).

Do education levels of the members of the household have any effect on household expenditures on education of the children of the household? One can expect better educated families to value education more and accordingly to spend more on education of their children. There is no simple measure of educational level of the family. Instead, one can consider the educational levels of the individual members of the family. Does the presence of a highly educated member in the family matter? The highest education level of any member of the household, who is not necessarily the head of the household, does not seem to matter, as no systematic pattern could be noted in the levels of household expenditure per student (Table 2.7). But the highest education level of the females in a household matters a little more. As the highest education level among any female member of the household increases, household expenditure on education seems to increase, particularly if the increase is to the post-graduate level or so.[22] But this is not the case with the male members of the household.

[22] This is not so, if the increase in education is below post-graduate level.

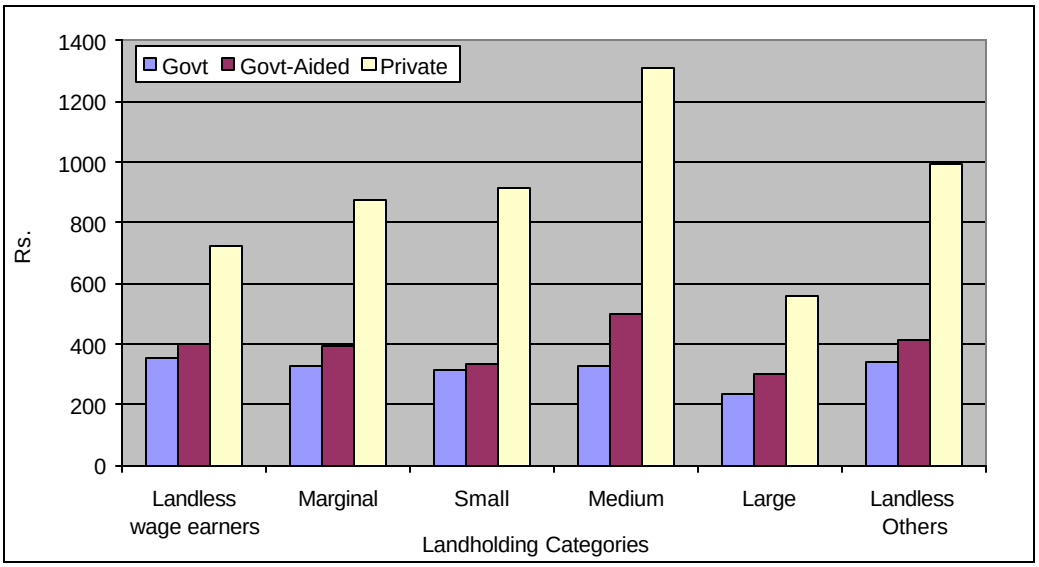

Fig. 2.5: Household Expenditure on Elementary Education per Student in Different Types of Schools, by the Ownership of Land

But *the education level of the head of household does matter* more significantly. Per student household expenditure on education is not sensitive to the highest educated member in the household; but the expenditure more or less systematically increases by the educational level of the head of the household. The higher the level of education of the head of the household, the higher will be the expenditure on education (Fig. 2.6). That the presence of a highly educated person in the household does not mean as much as the level of education of the head of the household may broadly conform with the hierarchical decision-making process in the households in rural India.

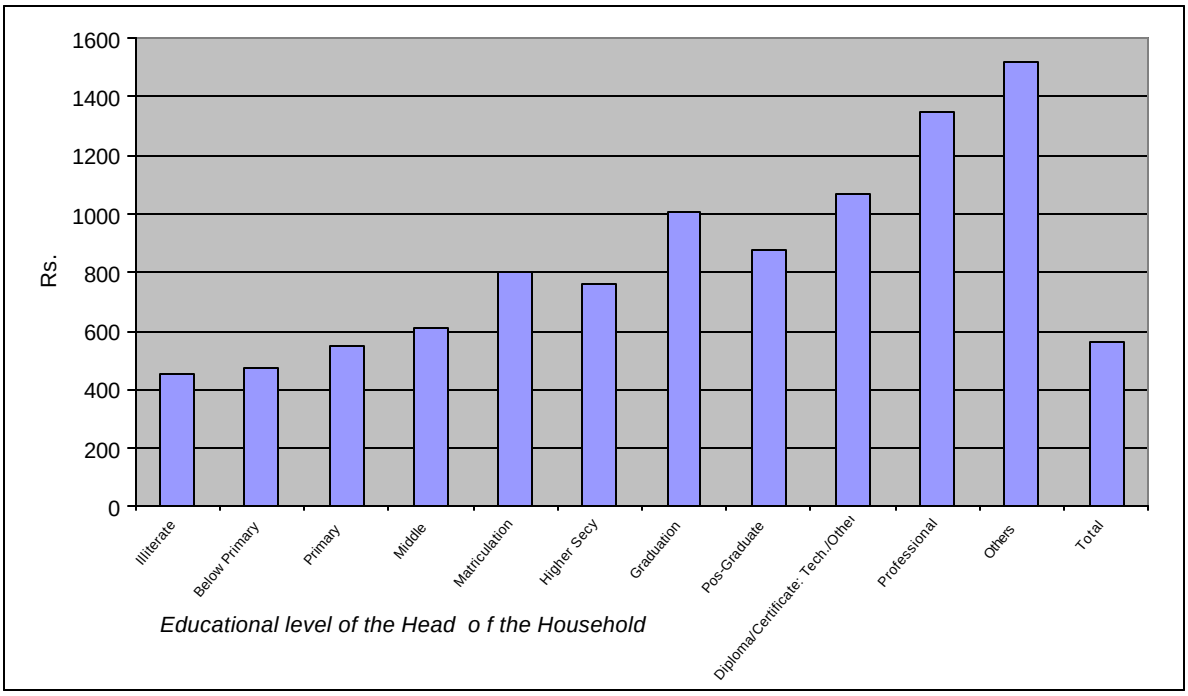

Fig. 2.6: Household Expenditure on Elementary Education per Student, by Educational Level of the Head of the Household

It is the head of a household, not the most educated person in the household, who might decide on several issues, including the level of household expenditure on education of the children.

As a proportion of total household income, poor households spend more on education than the rich. Bottom income households have to spend 6.9 per cent of their total income on education and this proportion declines consistently by increasing levels of household income. It is only 0.63 per cent of household income that top income households have to spend on the education of their children (Table 2.8). Such a systematic pattern holds among all groups of population—caste groups including Scheduled Castes, Scheduled Tribes and others; religious groups including Hindus, Muslims and Christians; on boys' or girls' education; and among different land owning groups. This pattern also holds in all states with almost no exception (Table 2.9). The poor households have to spend a larger proportion of their meagre household incomes on education than richer households.

2.2 Inter-State Variations in Household Expenditures on Education

Inter-state variations in household expenditure on elementary education are sizeable. It ranges between Rs. 229 in Orissa to Rs. 826 in Himachal Pradesh (Table 2.10). What is interesting is that the household expenditures on education and the educational performance of the state are not related, as shown in Fig. 2.7. In Fig. 2.7, the states are arranged in a

descending order of educational performance.[23] Households in educationally and economically backward states such as Bihar, Uttar Pradesh and Rajasthan spend higher amounts than households in advanced states like Maharashtra and Gujarat.

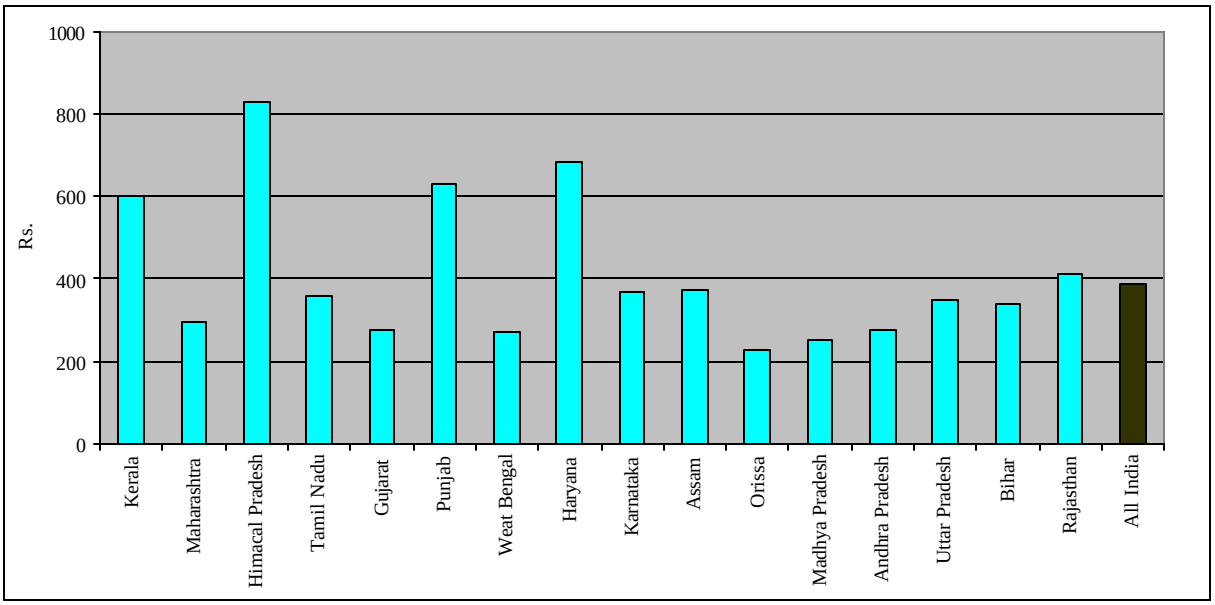

Fig. 2.7: Household Expenditure on Elementary Education per Student, by State

While there is not much difference between the expenditure incurred on the children in government schools in general, *the household expenditure in government-aided schools is particularly high in quite a few states*, such as Punjab, Haryana and Karnataka where the expenditure is higher in government-aided schools than in government or even in private schools (Fig. 2.8)! The data reveals that much of the differences between government and government-aided schools could be due to differences in fees. For example, expenditure on fees in government-aided primary schools in Haryana is nearly 7 times the fees in government schools (Table 2.11). The respective figures are Rs. 425 and Rs. 64 in Haryana; in Himachal Pradesh the former is 9 times higher than the latter; in Karnataka it is 10 times higher and in Punjab 29 times higher. While the expenditure on fees in government schools are the least, and in general the fees in private schools are the highest, there are several states as can be seen in Fig. 2.8, where the expenditure on account of fees in government-aided schools is higher than the fees in private schools. It is important to note that government-aided schools are generally expected to charge more or less the same levels of fees as the government schools. But this requirement, if any, is confined to some types of fees only. Government-aided schools charge various other types of fees that government schools may not charge at all.

[23] Educational performance is measured in terms of the index of education that is based on literacy and mean years of schooling of the population, see Tilak (1999a).

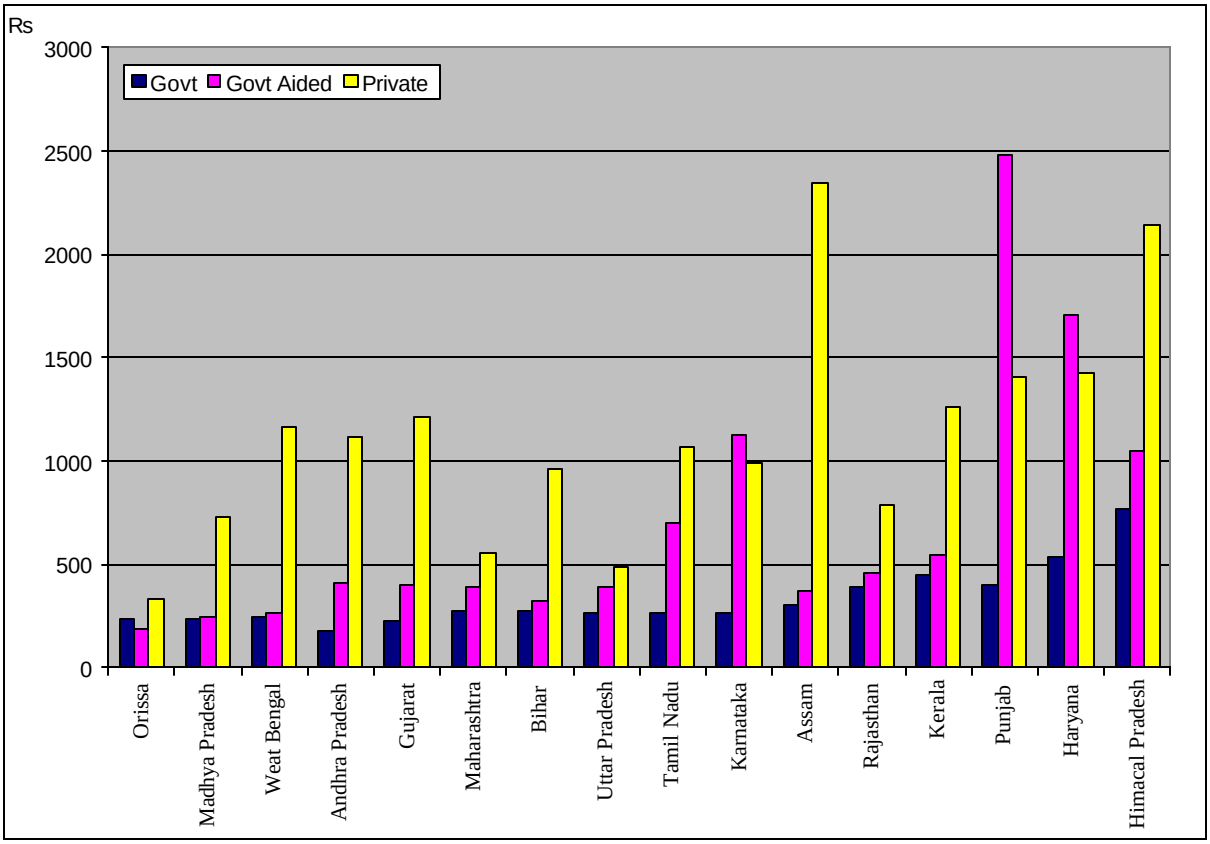

Fig. 2.8: Household Expenditure on Elementary Education per Student in Different Types of Schools, by State

Gender differences in household expenditures on education are not systematically related to either educational or economic factors relating to the states (Table 2.12). It may be surprising to note that the gender differences in household expenditures on education in Bihar and Uttar Pradesh are less than the gender differences in states such as Kerala and Himachal Pradesh. The differences are marginal in Tamil Nadu and Madhya Pradesh. In Orissa and West Bengal the absolute levels of expenditures on boys' or on girls' education are low; but the gender differences are also the least; in fact, the gender differences are marginally in favour of the girls. Thus the gender differences seem not to be influenced by economic factors, but may essentially be due to social and cultural prejudices.

These observations are true only when the aggregate level, that is, inclusive of all types of schools is examined. When gender differences by type of school is looked at, there are marked variations from the findings at the aggregate level.

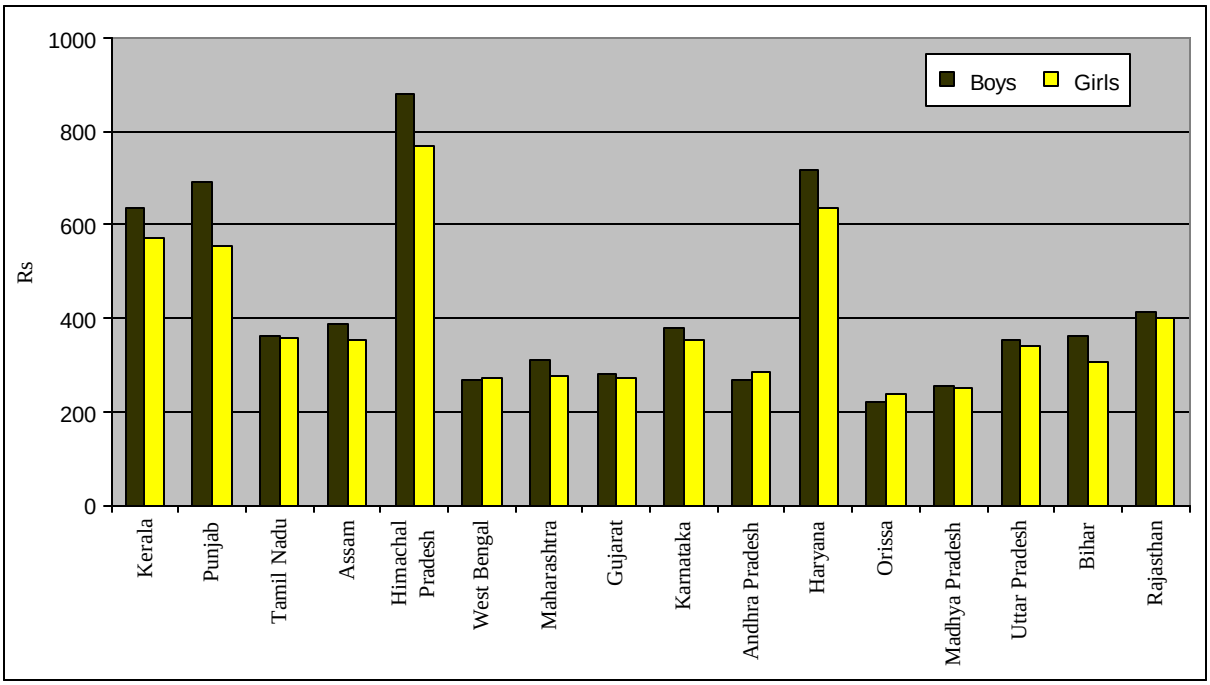

Fig. 2.9: Household Expenditure on Elementary Education per Student, by Gender and State

While in government and government-aided schools in Tamil Nadu the gender differences in household expenditures favour girls, the differences are substantial and are against girls in private schools (Table 2.12). In Andhra Pradesh, Gujarat and Haryana the differences in private schools are high, but they favour girls. On the whole, *gender differences in expenditures are marginal in government schools, high in government-aided schools and much higher in private schools in many states*.

It has already been mentioned that Scheduled Castes and Scheduled Tribes also spend a lot on education. In quite a few states, Scheduled Tribes have to spend much more than what 'others' (non-scheduled households) have to spend on acquiring elementary education even in government schools. For instance, in Himachal Pradesh, Scheduled Tribe households spend Rs. 966 per child in government schools, while Scheduled Caste households spend Rs. 752 and 'others' spend Rs. 760. Similar is the situation in Punjab, Tamil Nadu and in the North-eastern region. Similarly Scheduled Castes in Kerala and Gujarat have to spend more than 'others' on elementary education (Table 2.13). Disaggregated data are not examined to see on which items the various groups of population spend or what accounts the most for each population group. It is possible that the scheduled population may have to spend on travel, etc., as schools may not be available within the habitations or at close proximity.

In a majority of states a systematic pattern could be noted with respect to household expenditures on elementary education by household income groups (Fig. 2.10). *In many states, high income households spend consistently more than middle income households, and*

who in turn spend, more than low income households (Table 2.14). The difference between the expenditure of the low-income households and the high-income households, or the 'wealth effect' estimated in Table 2.15 is highest in Andhra Pradesh and least in Karnataka and Assam. The wealth effect is more pronounced in private schools than in government schools (Figs 2.11(a) and (b)). For example, in government schools in Andhra Pradesh, the top income households spend just 70 per cent higher than the bottom income group; but in private schools they spend five times higher. It may be mentioned that the scales are different in Figs 2.11 (a), (b) and (c). The maximum wealth effect is estimated to be below 1.0 in government schools, while the maximum is nearly 3 in government-aided schools and more than 4 in private schools, indicating the inequities that get perpetuated by the three types of schools.

Fig. 2.10: Household Expenditure on Elementary Education per Student, by Income Group

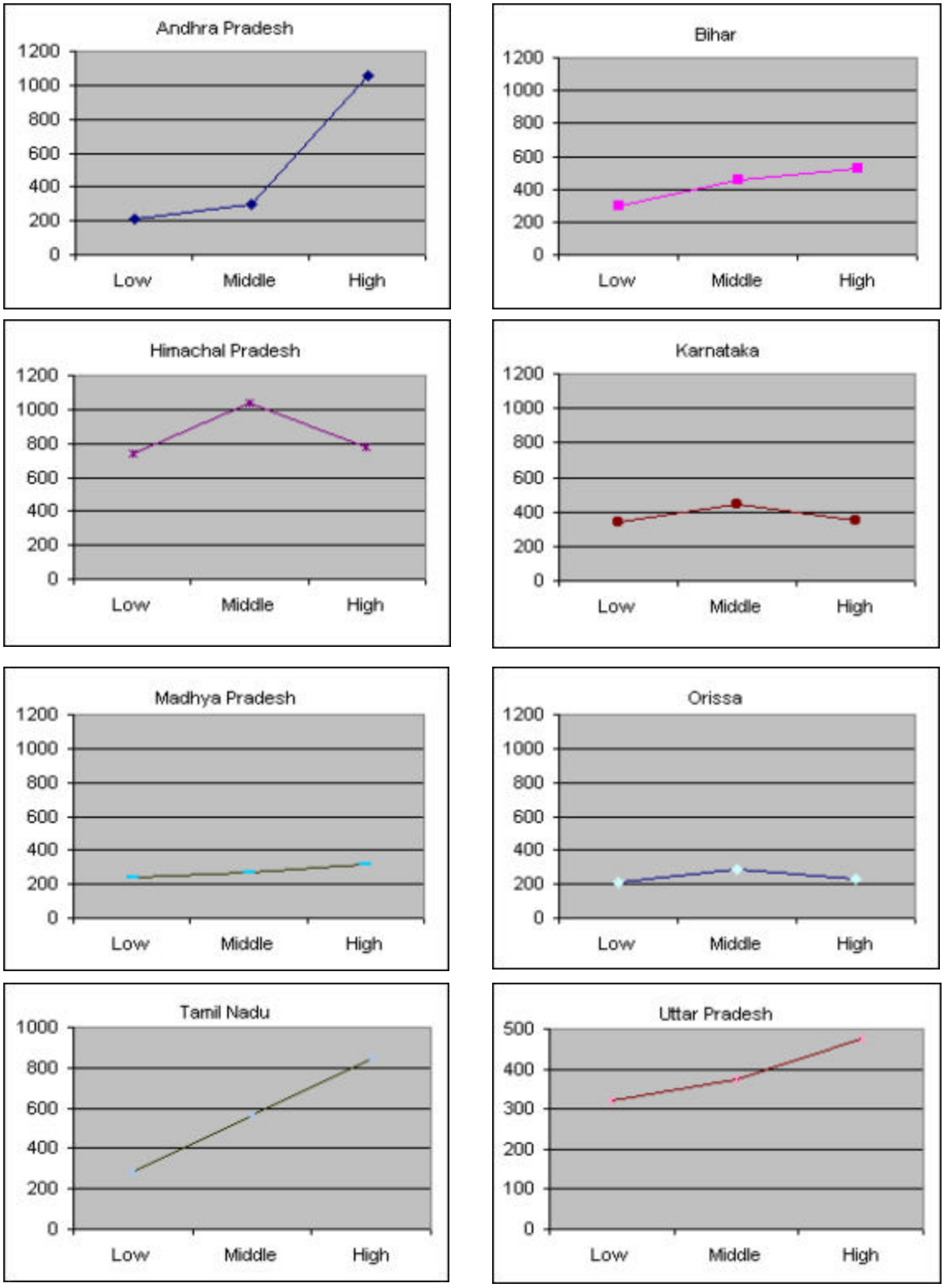

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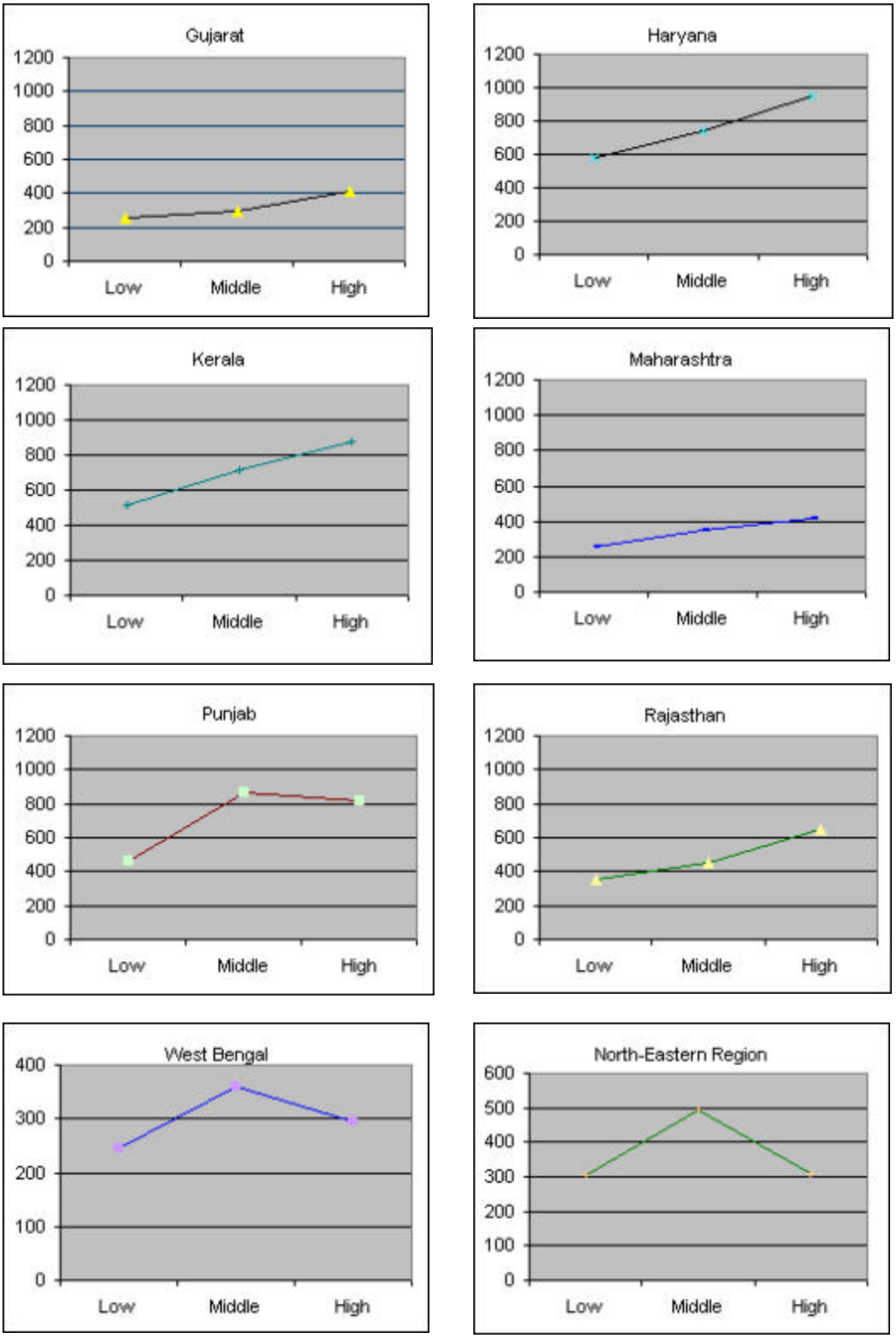
Fig. 2.10 (contd)



Note: Income Groups: **Low**: up to Rs. 30,000; **Middle**: Rs. 30,001–80,000 and **High**: above Rs.80,000

Fig. 2.11(a)

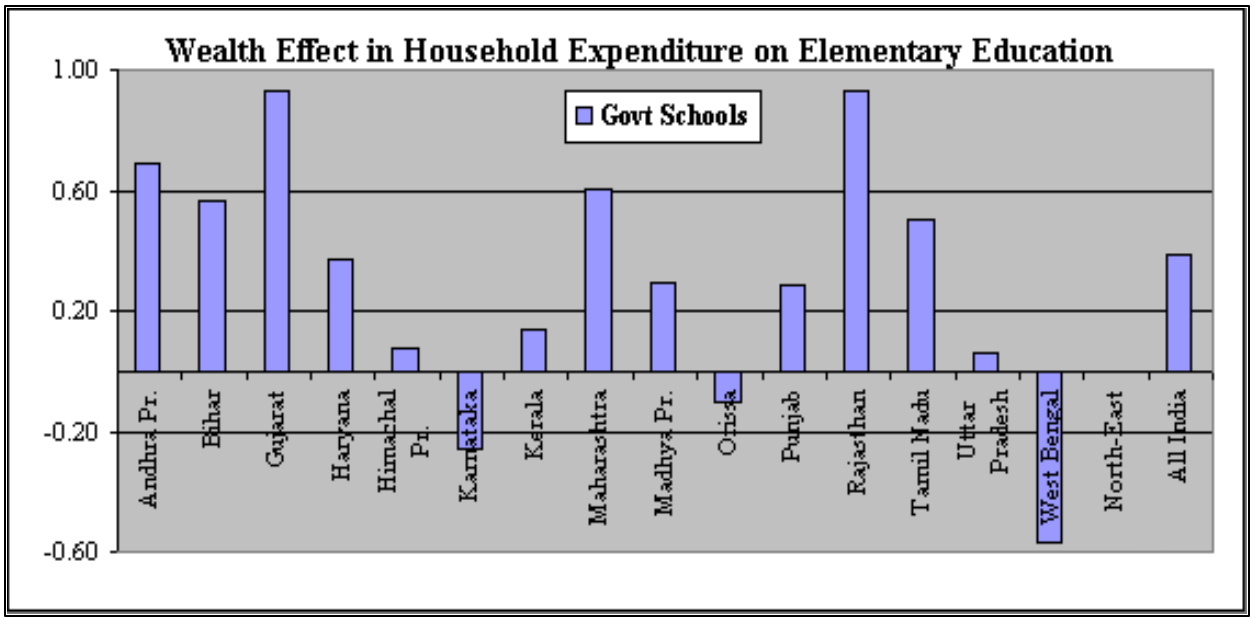
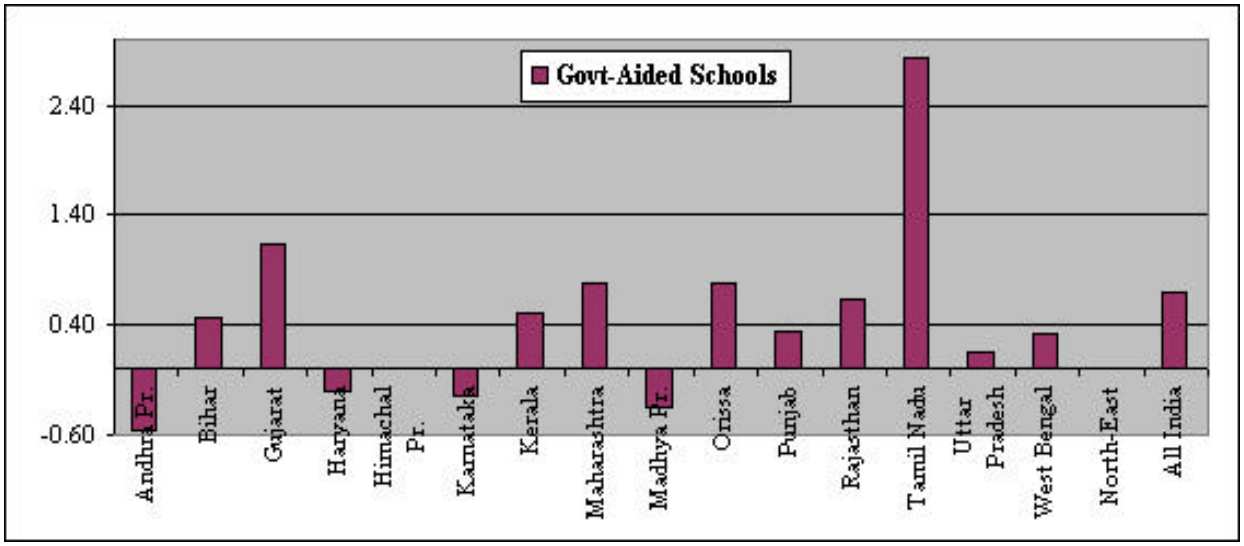
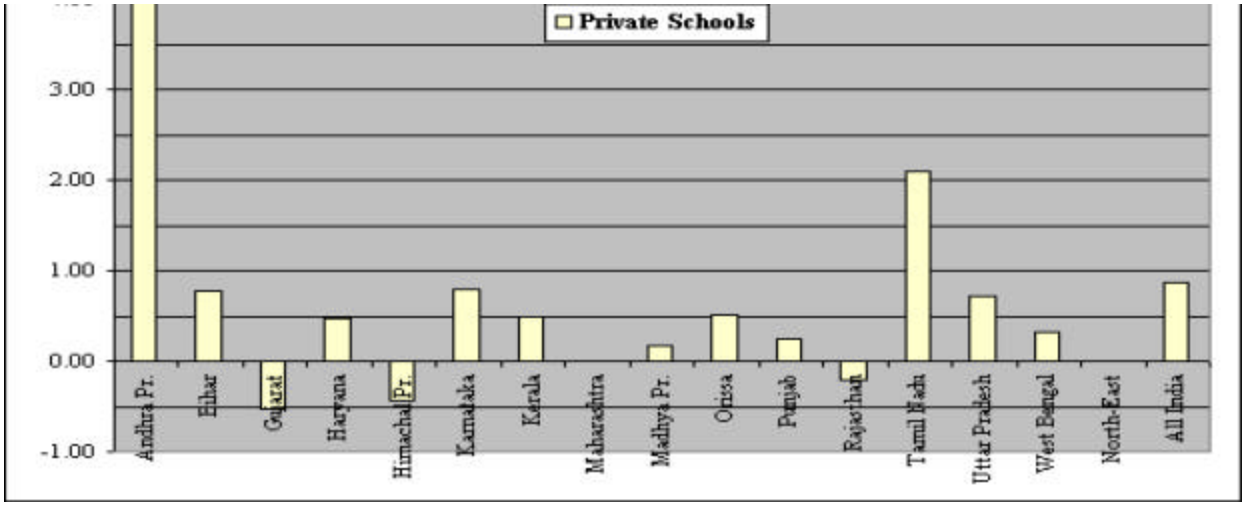


Fig. 2.11 (b)





The bottom income group in Karnataka and West Bengal spend on an average more than the top income group (in the government schools). A similar picture could be noted in the case of spending in private schools in Gujarat and Rajasthan.

The extensive tabulation of data attempted in this section has unraveled several interesting aspects of the types of households that spend more and those which spend less. In general, rich households tend to spend more than the bottom income groups. However, paradoxically, owners of marginal, small and medium size of land and also even landless wage earners spend more than owners of large tracts of land. Further, in some cases the Scheduled Tribe and Scheduled Caste households also spend more than the 'others'. It is not just economic conditions that help or constrain households spending on education, there can be several social, cultural and contextual factors. An attempt is made to examine the interplay of some of these factors in Section 3 with the help of regression analysis.

Table 2.1

Household Expenditure on Education per Student per Year, by Level of Education and Type of School (Rs.)

	Type of School			
Education Level	Govt	Govt-aided	Private	All
Elementary	322.22	390.24	881.62	386.66
Primary	271.93	338.82	844.78	340.93
Upper Primary	419.71	469.96	971.04	473.51
Secondary	741.65	731.15	1280.67	787.81
Higher	1440.97	1323.14	2031.28	1488.57
All Levels	480.62	593.95	1100.44	563.69

Table 2.2
Per Student Household Expenditure on Elementary Education by Components

Items of Expenditure	By Gender		By Type of School			
Rs.	Boys	Girls	Govt	Govt-aided	Private	Total
Total	395.37	375.05	322.25	390.24	881.62	386.68
School exam & other fees	71.59	62.20	37.19	64.91	309.17	67.57
Books, stationery & uniforms	275.32	270.63	258.03	249.40	437.49	273.32
Private Coaching	27.38	23.80	16.24	46.76	61.26	25.85
Transport	12.10	9.69	4.29	17.28	52.12	11.07
Boarding & lodging	8.96	8.69	6.47	11.89	21.57	8.84
Per cent						
School exam & other fees	18.1	16.6	11.5	16.6	35.1	17.5
Books, stationery & uniforms	69.6	72.2	80.1	63.9	49.6	70.7
Private Coaching	6.9	6.3	5.0	12.0	6.9	6.7
Transport	3.1	2.6	1.3	4.4	5.9	2.9
Boarding & lodging	9.0	8.7	6.5	11.9	21.6	8.8
Total	100.0	100.0	100.0	100.0	100.0	100.0

Table 2.3
Per Student Household Expenditure by Level, Type and Gender (Rs.)

	Government			Government-aided			Private			All	
·l	Boys	Girls	Discr.	Boys	Girls	Discr.	Boys	Girls	Discr.	Boys	Girls
	323.21	320.94	0.707	401.12	375.57	6.803	882.95	879.27	0.419	395.35	375.03
	272.11	271.70	0.151	350.67	323.00	8.567	831.77	867.86	-4.159	349.42	329.90
ry	416.52	424.23	-1.817	478.55	458.21	4.439	1009.17	906.23	11.359	479.06	465.50
	741.08	742.85	-0.238	733.66	726.82	0.941	1294.66	1257.19	2.980	786.65	790.00
	1485.65	1242.86	19.535	1345.30	1250.39	7.590	2088.99	1910.98	9.315	1517.90	1383.00
	523.39	415.42	25.991	636.59	526.42	20.928	1118.13	1069.03	4.593	607.04	496.10

icient of discrimination. See text.

Table 2.4
Household Expenditure on Education, per Student by Level, Type, Gender and Caste (ST/SC/Others)

	Government				Government-aided				Private				All			
	ST	SC	Others	Total	ST	SC	Others	Total	ST	SC	Others	Total	ST	SC	Others	
ary																
	225.96	306.10	344.47	323.21	396.99	319.89	423.65	401.12	922.22	768.03	900.76	882.95	299.03	339.71	427.98	3
	226.71	299.39	341.14	320.94	289.23	333.44	397.96	375.57	677.05	734.70	905.32	879.27	249.29	324.73	405.97	3
	226.27	303.29	342.99	322.22	359.95	325.40	412.17	390.24	860.22	757.20	902.46	881.62	279.35	333.54	418.36	3
	195.37	255.75	290.55	272.11	352.61	226.87	384.52	350.67	752.74	678.64	861.24	831.77	261.97	282.00	385.68	3
	204.33	251.96	288.71	271.70	320.23	309.86	326.76	323.00	671.54	726.65	891.59	867.86	235.43	282.06	357.87	3
	199.35	254.12	289.71	271.93	341.51	261.93	358.57	338.82	735.15	694.21	872.53	844.78	251.04	282.02	373.35	3
rimary																
	285.64	404.76	439.56	416.52	494.97	466.14	478.81	478.55	1364.72	962.59	1000.09	1009.17	374.51	449.87	502.71	4
	287.10	405.95	445.23	424.23	221.61	377.81	500.67	458.21	685.00	752.03	938.71	906.23	284.52	417.93	497.56	4
	286.17	405.23	441.97	419.71	400.51	432.64	488.50	469.96	1138.15	893.79	976.78	971.04	342.15	437.40	500.52	4
ıry																
	542.83	667.64	790.20	741.08	603.24	561.79	786.05	733.66	948.44	1165.10	1351.57	1294.66	581.79	682.86	840.84	7
	521.17	729.85	769.02	742.85	490.14	578.61	780.09	726.82	1383.75	1234.64	1255.38	1257.19	552.63	724.42	827.53	7
	536.67	685.73	783.16	741.65	564.49	567.80	783.83	731.15	1053.97	1184.57	1313.17	1280.67	573.15	695.51	836.19	7
	1187.08	1320.76	1567.23	1485.65	954.69	1156.59	1448.35	1345.30	1160.00	1817.94	2170.44	2088.99	1098.28	1309.90	1618.19	15
	1739.33	972.90	1272.86	1242.86	1109.81	1170.66	1286.51	1250.39	2141.86	2862.73	1778.54	1910.98	1513.20	1290.64	1391.45	13
	1271.32	1266.49	1509.69	1440.97	991.70	1159.47	1409.48	1323.14	1521.74	2137.78	2043.34	2031.28	1183.11	1306.41	1566.30	14
els of Education																
	352.43	474.81	564.74	523.39	497.97	522.66	690.55	636.59	956.62	967.68	1153.85	1118.13	419.36	517.13	660.99	6
	292.79	377.80	443.28	415.42	385.94	454.97	561.05	526.42	1106.97	1047.07	1070.72	1069.03	338.23	426.39	534.43	4
	329.56	438.11	515.69	480.62	460.72	497.82	638.66	593.95	996.64	992.56	1122.90	1100.44	389.66	483.35	610.42	5

Table 2.5

Household Expenditure on Education per Student, by Level, Type, Gender and Religion

	Government			Government-aided			Private			All	
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls
	321.49	322.30	321.84	403.53	378.00	393.08	885.48	872.55	880.91	387.51	368.91
	306.47	271.51	292.07	334.27	296.45	316.03	628.41	524.11	590.37	368.95	313.39
	335.90	315.55	326.35	439.36	513.70	473.27	1060.00	1174.58	1125.51	456.80	517.76
	389.28	371.89	380.90	1101.30	722.81	946.03	1539.34	1647.43	1583.85	608.04	549.52
	323.21	320.89	322.22	401.12	375.57	390.24	882.95	879.27	881.62	395.35	375.03
	273.26	273.50	273.37	355.59	327.53	343.99	829.68	856.25	839.01	342.03	322.92
	246.46	240.08	243.72	290.64	263.94	277.66	633.79	503.66	587.13	332.50	284.81
	281.68	261.47	272.37	366.49	412.12	385.50	1153.26	1124.06	1141.28	420.91	426.84
	296.93	289.51	293.12	1232.50	736.50	1012.06	1330.27	1635.02	1466.00	527.37	509.12
	272.11	271.70	271.93	350.67	323.00	338.82	831.77	867.86	844.78	405.70	385.92
	410.65	424.55	416.42	471.99	453.37	464.49	1015.86	909.36	977.65	469.80	460.73
	412.56	339.52	384.81	417.61	361.48	390.97	612.99	577.19	599.32	440.02	374.94
	422.91	395.30	409.60	603.64	659.91	633.35	631.00	1249.33	1094.75	532.29	645.50
	533.23	556.44	543.06	1000.38	709.13	889.43	2114.29	1713.20	1996.32	745.88	645.87
	416.52	424.23	419.71	478.55	458.21	469.96	1009.17	906.23	971.04	547.00	531.76
	738.53	735.64	737.63	731.18	731.99	731.47	1276.66	1136.48	1227.29	781.81	772.13
	613.79	596.63	608.31	646.05	564.46	615.17	1215.95	902.92	1102.12	685.24	618.49
	659.89	827.13	749.08	950.92	938.87	945.82	1257.00	1837.74	1581.53	920.77	1066.25
	1024.40	981.71	1007.16	637.04	622.00	632.03	2133.25	2510.00	2348.54	1047.12	1144.10
	741.08	742.85	741.65	733.66	726.82	731.15	1294.66	1257.19	1280.67	786.65	790.09
	1490.30	1253.70	1448.29	1350.41	1199.93	1315.94	1914.35	1815.16	1885.02	1499.00	1338.57
	1067.50	700.36	998.50	1355.11	906.75	1283.37	2375.17	1113.73	2036.73	1372.57	856.44
	1555.60	1492.89	1533.04	1595.12	1852.62	1710.17	3721.67	1871.56	2766.77	2143.65	1788.83
	2161.70	1632.71	2023.37	780.00	1365.00	886.36	3259.38	3385.92	3337.71	1944.30	2271.56
	1485.60	1242.86	1440.97	1345.30	1250.39	1323.14	2088.99	1910.98	2031.28	1517.90	1383.31
	525.08	414.21	481.46	652.90	539.25	610.65	1106.76	1031.05	1080.59	603.75	485.25
	428.74	333.89	392.57	505.43	356.19	439.73	858.50	607.86	769.02	517.96	377.81
	519.15	508.16	513.96	672.87	731.00	698.86	1799.31	1539.20	1660.86	754.43	780.99
	669.15	526.29	604.35	840.91	765.28	815.96	1118.13	2043.10	1872.18	829.07	755.56
	523.39	415.42	480.62	636.59	526.42	593.95	607.04	1069.03	1100.44	607.04	496.12

Table 2.6

Per Student Household Expenditure on Elementary Education, by Annual Household Income and Other Characteristics

	Government			Government-aided			Private			All		
	Boys	Girls	All	Boys	Girls	All	Boys	Girls	All	Boys	Girls	All
old Income Group (Rs.)												
10000	259.82	242.29	252.43	298.38	269.24	286.19	526.16	691.49	575.63	283.17	264.20	2
20000	305.53	288.38	298.26	336.13	333.98	335.25	635.38	658.71	643.08	337.80	317.41	3
30000	334.90	347.24	340.02	365.49	348.99	358.25	757.84	812.23	777.42	384.73	386.32	3
40000	371.82	352.55	362.72	492.00	446.44	471.19	997.00	826.50	930.07	479.43	419.00	4
50000	360.23	386.33	371.77	552.18	454.53	510.47	1012.98	982.56	1001.95	479.13	454.44	4
60000	362.87	417.48	387.55	694.05	540.96	637.14	1055.03	1113.41	1076.46	526.72	516.53	5
70000	323.74	349.09	335.49	405.13	402.72	404.08	1386.96	759.39	1208.48	535.50	398.90	4
80000	347.19	347.65	347.40	455.22	341.91	405.55	1337.32	1191.03	1261.66	474.28	464.47	4
90000	428.65	383.68	406.92	465.81	392.86	435.53	1354.68	904.38	1226.02	624.51	439.09	5
00000	423.43	398.11	410.79	552.42	663.90	604.13	1316.35	1245.88	1282.93	597.54	567.60	5
	323.21	320.94	322.22	401.12	375.57	390.24	882.95	879.27	881.62	395.35	375.03	3
Effect	0.6297	0.6431	0.6273	0.8514	1.4658	1.1109	1.5018	0.8017	1.2287	1.1102	1.1484	1.
ional Group												
ion	310.84	308.63	309.89	374.45	368.53	371.91	827.20	832.72	829.20	382.21	366.79	3
ural wage labourer	351.55	347.62	349.82	427.76	420.11	424.62	986.68	1017.98	998.06	413.94	397.86	4
icultural wage labourer	323.01	330.11	326.16	753.77	425.38	598.47	1142.56	972.19	1078.93	458.78	390.70	4
independent work	367.36	363.12	365.53	385.29	357.02	374.03	918.78	1034.51	962.60	415.79	408.35	4
ops/other small	334.14	336.45	335.21	404.18	441.90	421.83	769.63	827.05	791.71	378.72	383.02	3
ed Trade/business	266.37	243.19	256.47	268.62	264.88	266.95	983.69	1609.20	1157.44	337.37	318.97	3
employment	310.83	309.15	310.11	349.55	297.80	329.09	820.32	749.29	795.02	382.77	348.28	3
d professional	514.06	223.56	368.81	360.45	433.20	383.19	2915.00	.	2915.00	635.82	242.62	4
	263.45	321.22	292.23	427.44	455.00	438.84	1274.50	1083.50	1187.68	354.73	381.07	3
	323.21	320.94	322.22	401.12	375.57	390.24	882.95	879.27	881.62	395.35	375.03	3
wnership												
s wage earners	353.97	349.74	352.12	421.88	371.43	398.97	701.78	766.38	724.69	407.91	389.37	3
l	315.64	339.19	325.51	383.56	404.10	391.99	922.28	789.01	875.08	382.46	382.50	3
	325.69	303.15	315.62	322.24	350.47	333.74	944.40	873.28	917.10	388.25	356.20	3
	331.28	328.46	330.04	533.57	456.96	502.12	1331.37	1287.96	1313.82	468.18	439.12	4
	241.35	232.22	237.62	304.19	296.87	301.27	598.20	460.25	561.95	268.88	247.47	2
s Others	350.00	328.70	339.90	437.07	380.71	413.60	999.59	993.79	997.38	460.39	408.82	4
	323.21	320.94	322.22	401.12	375.57	390.24	882.95	879.27	881.62	395.35	375.03	3

Table 2.7

Household Expenditure on Education per Student, by the Educational Level of the Household

Education Level	Education of the Head of the Household	Highest Education in the Household of a		
		Male Member	Female Member	Male or Female
Illiterate	453.89	582.62	573.22	599.30
Below Primary	471.45	613.48	594.01	571.17
Primary	551.20	533.70	564.55	550.53
Middle	609.66	575.77	542.85	571.02
Matriculation	800.82	548.86	508.36	551.64
Higher Secondary	758.01	522.06	481.12	515.06
Graduation	1005.93	531.58	508.90	525.49
Post-Graduation	876.83	538.62	635.22	538.56
Diploma/Certificate/ Tech./Other	1066.09	448.63	413.75	448.48
Professional	1347.47	382.22	639.67	429.53
Others	1519.17	521.79	699.79	514.02
Total	563.69	563.69	563.69	563.69

Table 2.8

Household Expenditure on Education as a Proportion of Household Income (%)

	All	Gender		Caste				Religion				Type of school		
Household Income		Boys	Girls	ST	SC	SC& ST	Others	Hindu	Muslim	Chris-tian	Others	Govt	Govt-aided	Private
Up to 10000	6.85	7.41	5.98	3.85	6.45	5.65	7.79	6.85	6.7	8.46	6.11	6.33	6.7	13.93
10001–20000	3.16	3.32	2.91	2.27	3.01	2.78	3.38	3.17	2.58	4.35	3.92	2.87	3.33	5.59
20001–30000	2.29	2.43	2.06	1.94	2.21	2.13	2.35	2.29	1.86	2.65	3.18	2.04	2.26	4.08
30001–40000	1.87	2.09	1.55	1.38	1.75	1.65	1.94	1.86	1.42	2.51	2.76	1.6	2.01	3.09
40001–50000	1.55	1.66	1.38	1.07	1.57	1.38	1.59	1.51	1.67	1.77	2.07	1.33	1.62	2.71
50001–60000	1.42	1.54	1.24	1.41	1.37	1.38	1.44	1.4	1.04	1.35	2.99	1.17	1.66	2.38
60001–70000	1.10	1.25	0.86	0.62	1.06	0.89	1.15	1.09	0.83	1.44	1.54	0.91	0.98	2.3
70001–80000	1.02	1.13	0.87	0.96	0.98	0.98	1.03	0.98	0.88	1.56	1.9	0.83	1.15	2.01
80001–90000	0.96	1.12	0.71	0.87	0.57	0.74	1	0.95	0.72	0.73	1.59	0.85	0.95	1.49
above 90000	0.63	0.69	0.54	0.49	0.5	0.5	0.64	0.61	0.45	1.32	0.75	0.48	0.65	1.16
Total	2.93	3.16	2.57	2.28	3.31	2.98	2.9	2.94	2.52	3.69	3.27	2.72	2.9	4.51

	Land Ownership						Occupational Group									
	A	B	C	D	E	F	1	2	3	4	5	6	7	8	9	10.
Up to 10000	7.7	7.67	7.34	6.52	5.7	6.56	6.99	6.9	7.25	7.03	5.68	6.47	5.73	5.74	6.17	2.04
10001–20000	3.53	2.96	3.05	3.52	2.58	3.14	3.05	3.4	3.28	3.51	2.72	2.89	3.23	4.06	3.22	1.22
20001–30000	2.46	2.08	1.95	2.28	1.53	2.68	2.22	2.36	2.31	2.81	1.36	2.06	2.32	1.75	2.16	2.52
30001–40000	2.06	1.73	1.55	1.42	1.71	2.15	1.84	2.14	1.82	1.83	1.16	1.84	1.56	1.47	1.62	0.29
40001–50000	1.97	1.45	1.15	1.17	1.63	1.93	1.5	1.82	1.54	1.77	1.37	1.41	1.09	1.35	1.47	2.57
50001–60000	2.03	1.24	1.26	0.94	2.47	1.68	1.39	1.34	1.6	1.5	1.11	1.54	1.11	0.88	1.43.	
60001–70000	1.44	1.23	0.92	0.84	0.59	1.37	1.22	0.88	1.26	0.92	0.57	0.78	1.33	1.17	1.02	1.65
70001–80000	1.5	1.2	0.91	0.82	0.73	0.94	0.97	1.06	1.14	0.93	1.64	1.11	1.33	0.8	0.65.	
80001–90000	1.19	1.02	1.04	0.76	0.36	1.53	0.93	1.07	0.99	1.08	1.28	0.95	0.43.		0.78.	
above 90000	0.83	0.91	0.66	0.53	0.05	0.92	0.62	0.63	0.71	0.57	0.16	0.64	0.67	0.71	0.63.	
Total	3.79	2.49	1.7	1.12	3.98	3.08	2.93	3.01	3.1	3.05	2.42	2.75	2.67	2.67	2.84	1.86

Notation: Land Ownership Groups: A: Landless wage earners; B: Marginal land owners; C: Small land owners; D: Medium land owners; E: Large land owners; F: Landless others.

Occupational Groups: 1: Cultivators; 2: Agricultural wage earners; 3: Non-agricultural wage earners, 4: Artisans and independent workers; 5: Involved in organised trade; 6: Salaried; 7: Household workers; 8: Rentiers; 9: Unemployed; 10: Domestic servants

Table 2.9

Household Expenditure on Education as a Percentage of Household Income by Income Groups and by Sates

	Household Income (Rs.)										
States	Up to 10000	10001 – 20000	20001 –30000	30001 – 40000	40001 –50000	50001 –60000	60001 –70000	70001 –80000	80001 –90000	above 90000	Total
Andhra Pradesh	4.22	2.22	1.77	0.94	1.30	0.61	0.90	1.26	0.44	1.09	2.13
Bihar	4.87	2.37	1.84	1.77	1.31	1.07	0.99	0.47	0.78	0.68	2.31
Gujarat	3.91	2.92	2.45	1.59	1.79	0.71	0.36	0.91	1.02	0.45	2.33
Haryana	12.30	4.88	3.03	2.78	2.03	2.01	1.53	1.17	1.82	0.82	3.44
Himachal Pradesh	18.75	7.58	5.56	3.71	3.91	3.52	2.64	2.23	1.39	1.03	7.64
Karnataka	8.39	2.98	2.42	2.28	1.01	1.27	0.78	1.03	0.46	0.37	3.52
Kerala	12.42	4.90	3.26	2.57	2.00	1.67	1.48	1.52	1.00	1.13	4.21
Maharashtra	4.55	2.42	1.81	1.37	0.95	0.98	0.81	0.84	0.75	0.43	2.04
Madhya Pradesh	3.90	2.05	1.60	1.09	0.94	0.63	0.67	0.41	0.56	0.39	1.76
Orissa	5.87	2.77	1.43	1.74	1.05	1.08	1.25	0.50	0.52	0.60	3.10
Punjab	8.45	4.52	3.25	2.98	2.40	2.62	1.44	1.52	1.48	0.68	3.49
Rajasthan	6.93	3.18	2.83	1.65	1.44	1.75	1.32	1.17	0.93	0.82	2.92
Tamil Nadu	5.62	2.56	1.61	1.89	2.29	1.87	1.52	1.76	0.65	1.06	2.98
Uttar Pradesh	7.07	2.65	1.73	1.28	1.23	1.16	0.91	0.84	0.96	0.54	2.39
West Bengal	5.05	2.43	1.88	1.58	1.88	2.14	1.30	0.70	0.55	0.59	2.64
Assam	4.31	2.94	1.88	1.84	1.45	1.64	0.98	2.17	0.76	2.18	2.29
All India	6.85	3.16	2.29	1.87	1.55	1.42	1.10	1.02	0.96	0.63	2.93

Table 2.10

Household Expenditure on Elementary Education per Student, by Level of Education and by type of Education Institution (Rs.)

	Primary				Upper Primary				Elementary			
States	Govt	Govt-aided	Private	All	Govt	Govt-aided	Private	All	Govt	Govt-aided	Private	All
Kerala	386.39	450.85	1228.22	552.86	524.64	683.26	1376.34	684.37	444.13	542.39	1263.86	603.08
Maharashtra	241.50	346.55	528.20	251.29	357.02	415.91	572.95	381.11	272.67	394.26	557.52	295.55
Himachal Pradesh	631.91	800.00	2166.24	695.50	963.77	1540.00	2118.61	1021.02	764.77	1046.67	2145.17	826.37
Tamil Nadu	207.87	685.11	1103.17	319.66	388.49	745.63	949.71	443.13	270.01	702.53	1064.80	360.77
Gujarat	226.73	352.98	1206.92	262.93	234.45	487.45	1213.82	303.26	229.42	403.82	1210.08	277.29
Punjab	306.08	2797.00	1304.50	565.92	558.26	2106.00	1727.29	745.63	404.34	2478.08	1411.74	631.24
West Bengal	177.05	209.14	1075.00	213.53	390.89	372.09	1472.33	384.62	241.29	266.28	1166.69	271.38
Haryana	454.09	1542.50	1417.40	621.03	682.10	1971.55	1435.87	786.10	541.55	1705.24	1422.76	682.25
Karnataka	234.57	1105.47	844.82	313.96	336.69	1152.32	1209.46	469.31	268.03	1124.21	994.85	366.47
Assam	318.51	333.33	2643.33	351.77	262.58	450.56	534.00	434.05	299.62	367.05	2342.00	375.66
Orissa	208.29	152.65	275.98	200.70	296.27	249.03	490.93	290.39	234.83	190.95	334.60	229.47
Madhya Pradesh	200.83	228.06	692.97	226.50	287.45	271.00	828.31	301.27	231.93	245.65	729.06	253.51
Andhra Pradesh	145.92	422.86	1058.97	262.97	249.42	375.60	1481.94	308.68	177.04	410.42	1113.74	275.89
Uttar Pradesh	229.24	325.89	476.90	318.48	334.95	472.98	527.73	409.59	265.85	389.95	491.98	350.03
Bihar	249.25	285.53	878.70	312.00	328.95	370.79	1175.46	393.05	277.07	320.25	963.16	340.37
Rajasthan	338.71	386.73	747.64	361.17	495.02	579.86	897.22	512.44	390.18	463.98	784.52	410.77
All India	271.93	338.82	844.78	340.93	419.71	469.96	971.04	473.51	322.22	390.24	881.62	386.66
Coef. of Variation	0.43	1.04	0.55	0.43	0.46	0.78	0.42	0.43	0.45	0.90	0.48	0.43

Table 2.11

Per student Household Expenditure on School Examination and Other Fees (Rs.), by State, Level of Education and by Type of School

	Primary				Middle				Elementary			
States	Govt	Govt-aided	Private	All	Govt	Govt-aided	Private	All	Govt	Govt-aided	Private	All
1.Andhra Pradesh	15.51	39.29	506.74	76.69	22.53	29.60	736.11	55.98	17.62	36.74	536.44	100.90
2. Bihar	40.60	55.47	305.41	66.97	43.94	69.10	326.68	66.78	41.77	61.02	311.46	100.51
3. Gujarat	7.89	21.78	440.77	17.24	14.94	54.67	390.18	31.33	10.36	34.21	417.58	56.43
4.Haryana	63.74	424.67	533.77	142.15	96.60	792.18	590.95	162.02	76.34	564.07	550.37	209.06
5. Himachal Pradesh	45.16	400.00	714.31	73.69	105.31	840.00	532.04	127.56	69.24	546.67	633.69	175.62
6. Karnataka	28.08	279.63	246.29	54.33	38.73	334.21	342.08	85.38	31.56	301.46	285.70	102.84
7. Kerala	17.28	40.22	398.42	89.21	25.26	45.09	250.56	54.71	20.61	42.14	362.84	139.06
8. Maharashtra	18.90	48.10	138.10	21.88	20.17	33.61	83.21	26.01	19.24	38.14	102.14	50.17
9. Madhya Pradesh	18.89	26.68	283.08	31.92	28.31	40.79	290.81	37.76	22.27	32.46	285.14	54.53
10.Orissa	31.24	25.28	46.60	30.77	47.86	44.42	81.60	48.08	36.26	32.89	56.15	85.27
11. Punjab	45.92	1305.57	531.76	172.87	90.23	629.33	686.71	181.81	63.18	993.46	571.06	239.16
12. Rajasthan	21.47	119.76	310.38	39.32	39.68	196.91	402.78	58.79	27.47	150.62	333.16	74.59
13.Tamil Nadu	45.43	312.98	446.74	100.24	64.87	210.89	392.64	92.34	52.12	283.59	433.21	137.42
14. Uttar Pradesh	44.08	67.46	149.07	79.50	66.04	88.91	165.51	94.90	51.68	76.80	153.95	121.26
15. West Bengal	16.64	13.62	262.00	17.73	32.81	30.10	739.00	36.33	21.50	19.40	372.08	40.27
16. North-east Region	93.22	77.74	761.67	84.62	76.23	95.28	34.00	93.36	87.48	82.78	657.71	127.85
All India	30.62	60.82	305.02	63.37	49.92	71.25	319.27	75.56	37.19	64.91	309.17	107.02
Coef. of Variation	0.63	1.60	0.53	0.64	0.57	1.27	0.61	0.59	0.58	1.34	0.48	0.50

Table 2.12

Household Expenditure on Elementary Education by Type, Gender and State

States	Government			Government-aided			Private			All		
	Boys	Girls	Discr.	Boys	Girls	Discr.	Boys	Girls	Discr.	Boys	Girls	Discr.
Kerala	427.67	460.80	0.0775	569.12	520.07	-0.0862	1272.94	1248.78	-0.0190	637.10	570.21	-0.1050
Punjab	428.67	377.69	-0.1189	2648.60	1909.67	-0.2790	1428.58	1384.89	-0.0306	693.29	557.14	-0.1964
Tamil Nadu	268.66	271.64	0.0111	546.06	859.00	0.5731	1216.47	830.41	-0.3174	362.71	358.42	-0.0118
Assam	297.06	304.37	0.0246	383.10	339.89	-0.1128	2378.50	2293.33	-0.0358	388.93	353.11	-0.0921
Himachal Pradesh	795.40	733.27	-0.0781	.	1046.67	..	2491.87	1672.41	-0.3289	880.22	770.57	-0.1246
West Bengal	253.25	229.03	-0.0956	252.52	280.53	0.1109	1370.78	707.50	-0.4839	270.55	272.25	0.0063
Maharashtra	285.20	259.18	-0.0912	411.24	373.30	-0.0923	549.41	583.00	0.0611	310.96	278.38	-0.1048
Gujarat	227.00	232.41	0.0238	427.45	368.81	-0.1372	1080.13	1470.00	0.3609	281.88	271.42	-0.0371
Karnataka	261.31	275.35	0.0537	1177.78	1051.31	-0.1074	1025.27	947.40	-0.0760	378.49	352.84	-0.0678
Andhra Pradesh	170.19	185.44	0.0896	241.80	597.78	1.4722	1096.27	1136.75	0.0369	268.43	285.09	0.0621
Haryana	561.02	519.79	-0.0735	2025.10	994.44	-0.5089	1350.11	1547.19	0.1460	718.76	638.56	-0.1116
Orissa	229.95	240.61	0.0464	186.84	197.63	0.0577	266.03	416.88	0.5670	221.23	239.88	0.0843
Madhya Pradesh	227.89	237.48	0.0421	263.81	214.73	-0.1860	722.26	741.69	0.0269	254.41	252.23	-0.0086
Uttar Pradesh	263.39	270.05	0.0253	414.61	345.91	-0.1657	496.10	484.47	-0.0234	354.88	341.57	-0.0375
Bihar	281.19	270.86	-0.0367	330.41	305.07	-0.0767	1027.40	795.42	-0.2258	361.82	306.63	-0.1525
Rajasthan	396.75	374.95	-0.0549	414.82	573.88	0.3834	748.87	879.00	0.1738	414.09	403.05	-0.0267
All India	323.21	320.94	-0.0070	401.12	375.57	-0.0637	882.95	879.27	-0.0042	395.35	375.03	-0.0514
Coef. of Variation	0.47	0.43	-6.99	1.05	0.73	..	0.52	0.47	-24.72	0.46	0.40	-1.31

Table 2.13

Household Expenditure on Elementary Education per Student, by Level, Type, and Caste

States	Government			Government-aided			Private			All		
	ST	SC	Others	ST	SC	Others	ST	SC	Others	ST	SC	Others
Andhra Pradesh	127.00	138.75	197.11	.	424.29	402.33	600.00	398.86	1253.75	140.14	158.00	332.28
Bihar	228.35	224.80	307.23	255.58	222.44	372.00	627.60	1441.43	946.70	256.63	278.04	380.45
Gujarat	167.36	289.82	233.91	287.16	687.58	414.91	.	1145.00	1256.57	194.82	378.82	280.44
Haryana	394.50	491.37	565.37	.	2065.00	1663.73	1250.00	999.38	1498.69	565.60	537.78	740.70
Himachal Pr.	966.32	751.81	760.00	.	1400.00	870.00	8380.00	1567.00	2061.72	1161.42	765.67	831.48
Karnataka	254.05	231.18	278.64	613.00	849.00	1216.15	1827.00	571.29	979.71	352.48	287.40	385.98
Kerala	402.50	457.00	443.62	500.00	606.30	535.61	.	992.50	1272.27	422.00	580.86	606.02
Maharashtra	182.84	249.71	294.98	231.37	330.46	415.09	577.00	661.00	543.68	194.34	258.67	320.28
Madhya Pradesh	223.27	183.69	248.70	179.39	235.21	257.37	732.11	746.93	725.52	235.72	204.65	272.08
Orissa	149.76	198.57	263.00	86.90	172.94	230.81	70.56	115.00	405.19	128.36	193.56	262.83
Punjab	560.00	360.50	434.16	1502.50	.	2655.45	66.00	1369.65	1428.08	907.75	454.76	726.74
Rajasthan	242.00	345.54	426.23	2.50	277.50	528.81	460.00	903.93	766.58	241.67	363.65	448.44
Tamil Nadu	375.00	255.87	279.97	.	615.00	726.10	.	1262.50	1031.85	375.00	297.79	400.72
Uttar Pradesh	249.49	241.64	275.38	722.50	306.84	417.59	331.33	462.47	499.63	289.74	290.70	369.26
West Bengal	89.29	223.93	257.02	282.63	262.32	267.11	2620.00	880.40	1163.57	305.51	262.38	273.69
North-east	373.00	387.67	278.93	463.01	227.05	326.90	534.00	.	2643.33	460.72	235.50	347.72
All India	226.27	303.29	342.99	359.95	325.40	412.17	860.22	757.20	902.46	279.35	333.54	418.36
Coef. of Variation	0.69	0.49	0.42	0.93	0.91	0.92	1.60	0.46	0.50	0.72	0.47	0.42

Table 2.14

Household Expenditure on Elementary Education per Student, by Level of Education ,Type of School, Household Income Group and by State (Rs.)

	Government			Government-aided			Private			All		
States	Up to 30000	30001 – 80000	above 80000	Up to 30000	30001 – 80000	above 80000	Up to 30000	30001 – 80000	above 80000	Up to 30000	30001 – 80000	above 80000
Andhra Pradesh	172.89	169.44	292.55	443.46	410.00	196.50	624.00	1204.72	3244.44	214.67	300.82	1059.83
Bihar	264.00	299.43	412.82	281.65	388.36	413.33	759.54	1115.56	1353.75	293.06	454.25	528.68
Gujarat	197.99	251.58	381.44	370.78	459.05	790.00	1210.11	1338.00	570.00	254.37	292.94	414.22
Haryana	492.71	573.06	677.34	2352.38	1386.83	1890.00	1172.57	1472.20	1723.13	575.07	739.34	946.52
Himachal Pradesh	717.74	887.54	774.47	1540.00	800.00	.	1601.70	2700.00	905.00	743.72	1035.75	781.72
Karnataka	268.90	289.57	199.82	794.70	2002.71	598.00	936.39	924.50	1684.06	340.74	445.84	348.60
Kerala	441.13	443.95	503.18	469.98	646.28	708.88	1038.02	1418.72	1559.06	514.32	710.41	873.23
Maharashtra	238.11	314.46	381.26	313.84	459.43	559.38	565.62	536.25	.	253.22	346.17	415.05
Madhya Pradesh	223.20	239.95	288.24	255.00	232.09	167.43	620.84	874.68	721.78	239.07	271.89	321.28
Orissa	224.16	286.79	200.45	168.07	239.64	298.33	231.83	453.20	350.00	213.61	287.46	225.86
Punjab	365.93	470.38	470.68	2233.00	2442.00	2990.00	1104.66	1693.63	1385.46	466.99	866.79	817.83
Rajasthan	333.82	437.43	643.01	407.50	439.38	666.73	873.00	716.32	691.43	354.95	452.99	649.14
Tamil Nadu	245.06	364.28	368.80	490.04	1147.00	1880.00	632.11	1311.00	1963.75	281.69	566.09	849.17
Uttar Pradesh	266.47	260.66	282.94	348.09	460.44	405.06	423.84	526.33	731.22	320.94	372.06	474.69
West Bengal	189.31	393.52	82.33	254.05	314.02	334.20	1030.83	1270.33	1360.00	246.47	360.04	293.75
North-east	262.47	392.50	.	311.44	459.84	311.33	155.00	3216.80	.	306.56	493.00	311.33
All-India	296.51	365.32	410.07	330.43	495.36	563.32	678.85	1029.93	1272.61	330.55	471.34	575.14
Coef of Variation	0.46	0.45	0.48	1.02	0.85	0.99	0.47	0.58	0.57	0.43	0.45	0.46

Table 2.15
Wealth Effect on Household Expenditures on Elementary Education

	Govt Schools	Govt-aided Schools	Private Schools	All Schools
Andhra Pradesh	0.6921	-0.5569	4.1994	3.9370
Bihar	0.5637	0.4675	0.7823	0.8040
Gujarat	0.9266	1.1306	-0.5290	0.6284
Haryana	0.3747	-0.1966	0.4695	0.6459
Himachal Pradesh	0.0790	..	-0.4350	0.0511
Karnataka	-0.2569	-0.2475	0.7985	0.0231
Kerala	0.1407	0.5083	0.5020	0.6978
Maharashtra	0.6012	0.7824	..	0.6391
Madhya Pradesh	0.2914	-0.3434	0.1626	0.3439
Orissa	-0.1058	0.7750	0.5097	0.0573
Punjab	0.2863	0.3390	0.2542	0.7513
Rajasthan	0.9262	0.6361	-0.2080	0.8288
Tamil Nadu	0.5049	2.8364	2.1067	2.0146
Uttar Pradesh	0.0618	0.1637	0.7252	0.4791
West Bengal	-0.5651	0.3155	0.3193	0.1918
North-east	..	-0.0004	..	0.0156
All India	0.3830	0.7048	0.8747	0.7399

Note: See the text for the ‘wealth effect.’

3. ECONOMETRIC ANALYSIS OF HOUSEHOLD EXPENDITURE ON EDUCATION

The objective of the econometric analysis in the present study is essentially,

- to estimate the extent of elasticity of household expenditures on education to government expenditures, and
- to estimate a model of determinants of household expenditures on education.

This is attempted here at two levels: first with the help of aggregate data at state level, and then with the help of household level data. The state level analysis could be seen as a preliminary investigation, providing necessary insights for the analysis of household level data.

3.1 Analysis of State Level Data

The analysis of state level data is confined to briefly examining the following two hypotheses:

- Households in those states where government expenditure on education is meager, spend higher amounts on the education of their children.
- Households in economically better-off states spend higher amounts on the education of their children.

The first hypothesis means that households fill the resource gap in education, and the second one implies that higher levels of economic development in a state reflect higher levels of economic ability of the households, which would ensure higher investments in education. These two hypotheses are examined with the help of coefficients of elasticity. Then an attempt is also made to analyse determinants of household expenditures.

To begin with, one may note that the simple coefficients of correlation given in Table A.3.1 are high and statistically significant between household expenditure on education per capita and government expenditure on education per capita.[24] The coefficient of correlation is higher between household expenditure on elementary education per student and public expenditure on education per student at elementary level.

[24] It may be noted that the variables based on the HDI survey refer to rural areas and the variables drawn from secondary sources such as government expenditure on education, SDP per capita and pupil-teacher ratio that are used here in the state level analysis refer to rural plus urban areas as a whole. This is expected not to cause any serious error in our findings.

Elasticity of Household Expenditures on Education to Government Expenditures on Education

How does household expenditure on education react to government expenditure on education? As postulated earlier, household expenditures may complement government expenditures by positively responding to increase in government expenditures; or they may play a substituting role, with an inverse relationship between the two; or alternatively, they may not be related at all, that is, household expenditures could be independent of any change —increase or decrease—in government expenditures.

The state level data helps in estimating the coefficients of elasticity of household expenditures to government expenditure on education. Average household expenditure on education (all levels of education) is derived from the HDI survey of the NCAER and the data on government expenditure on education are based on the MHRD (*Analysis of Budgeted Expenditure on Education*).[25] A coefficient of elasticity (î) of 1 (elasticity being equal to unity) means that household expenditures increase by 1 per cent for every 1 per cent increase in government expenditures on education. If î is negative, it means that there is an inverse relationship between the two—if government expenditures increase, household expenditures would decrease. If the value of the coefficient is more than 1, it is considered more elastic, and if it is less than 1, it is less elastic. More (or less) elasticity means that household expenditure change (increase or decrease) more (or less) than proportionately to a given change in government expenditures. With the help of î, the nature of the good, namely education, can also be interpreted. If î is less than zero, that is, if it is negative, education is considered an inferior good; if î is greater than zero, it means that education is a superior good or a non-inferior good, and if î is greater than zero and less than 1, education is regarded as a basic need (see Intriligator 1980). The sign of î helps in understanding the nature of the relationship between the two—whether they are complements or substitutes of each other.

Among the alternative forms of equations used to estimate coefficients of elasticity,[26] double logarithmic form is preferred to the other ones in the literature. So using the double log form, two coefficients of elasticity of household expenditures are estimated, considering the per capita expenditures on education first, and then concentrating on expenditure on elementary education per student. The results are given in Table 3.1. The coefficients in both cases are high and statistically significant, but in value they are not more than unity: they are just close to unity. The positive coefficients suggest that a given increase in government expenditures on education per capita would be followed by a nearly proportionate increase in

[25] While using the state level data from official sources for analysis, Assam is considered to be representative of the Northeastern region, to correspond with the North-east Region, defined in the HDI survey. For the survey, the North-East Region was considered as one state (category).

[26] See Hassan and Johnson (1977) for a detailed discussion of several forms of Engle curves.

household expenditures on education per capita. Nearly the same degree of elasticity holds in case of expenditures on elementary education per student. In other words, the coefficients suggest that household expenditures and government expenditures complement each other.

Determinants of Household Expenditures

What are the determinants of household expenditure on education? This question is examined here concentrating on a few select aspects. The aspects considered include levels of economic development, government expenditures on education and educational situation in the state. The variables considered are as follows:

State domestic product per capita (SDP/pc) is the most widely used variable to represent the level of economic development of a state. One may expect that higher the level of economic development of a state, higher would be the level of expenditure of the families on education and vice versa.

Secondly, the coefficients of elasticity have revealed that government expenditure on education may have a very significant positive effect on household expenditures. Government expenditure on education is measured here in terms of three alternative variables:government expenditure on education per capita (GEX/pc), government expenditure as a proportion of SDP (GEX%SDP), and government expenditure on elementary education per student (GEXELY/ps). The first two measures refer to the total education sector, that is, all levels of education.

Thirdly, though there are several variables on educational situation, three variables are considered. Literacy (LIT), though crude, is the most standard and the most extensively used indicator of the level of educational development in a society. Higher the educational development in a state, higher could be the household expenditures on education, as people become aware of the importance of education and hence would be willing to invest in the education of their children. Along with literacy two others variables are considered that reflect the current levels of development of education in the state. Pupil-teacher ratio in primary school (PTR) may reflect the quality of instruction process in the school. The assumption is, higher the number of teachers in a school, better is the instruction and less is the need for the families to send their children to private tuition, etc. and hence less could be the household expenditure on education. Further, it was argued in earlier research that distance to school matters a lot; if a school is available within the habitation, not only is the level of participation in school higher, but expenditures (on transport) would be less. So the percentage of rural habitations having an upper primary school within the habitation (HABITAT) is considered as a variable to represent the degree of access to education.

Some of the limitations of these variables are well known. Literacy is a crude index, allowing no distinction between population with different levels of education. Pupil-teacher ratio (PTR) may not reflect quality of education. Government expenditures do not necessarily reflect the quality of government efforts, including the nature of distribution of government expenditures on education between teaching, administration and other functions. Despite these limitations, these variables are still extensively used, since no better alternatives are easily available. So, it is assumed that the three major dimensions of education, viz., the level of educational development, the quality of education and access to education, are taken into consideration through these three variables.

Variables, their Notation and Definition *(used in the state-level analysis)*

LIT	Literacy (per cent) (1991)
SDP/pc	State Domestic product per capita (Rs.) (1994–95)
GEX/pc	Government expenditure on education per capita (1994–95)
GEX/SDP	Government expenditure on education as % of SDP (1994–95)
GEXELY/ps	Government expenditure on elementary education per student (Rs.) (1994–95)
PTR	Pupil-teacher ratio in primary schools (1994)
HABITAT	% of habitations with a school (1993)

Some of these variables are alternatively used. It may be noted that while estimates on household expenditure refer to rural India, variables such as SDP/pc, GEX and PTR refer to all-India. Literacy (LIT) and HABITAT could be considered as specifically referring to rural areas.[27]

Sources of Data

While the estimates on household expenditure on education are derived from the NCAER survey, data on other variables on education are based on publications of the Ministry of Human Resource Development, Government of India, and the National Council of Educational Research and Training (NCERT). Data on government expenditure on education are based on the *Analysis of Budget Expenditures on Education. Selected Educational Statistics* of the MHRD provides data on pupil-teacher ratio and the *Sixth All India Educational Survey* of the NCERT provided data on the number of habitations with a school.[28]

[27] This caveat holds for the subsequent analysis as well.
[28] See Footnote 23.

Results

Two sets of regression equations are estimated, one considering total household expenditure on education (all levels of education), and second considering household expenditure only on elementary education per student as the dependent variable. The estimated results are presented in Tables 3.2 and 3.3. In both cases, the values of the regression coefficients of several variables are small; only a few among them are statistically significant.

First, the results of regression equations on total expenditure of the households on education are looked into. Government expenditure on education per capita alone explains above 50 per cent of the variations in household expenditures (Eq.1). Level of economic development measured in terms of SDP per capita does not have any influence on the household expenditures. This is found to be true when it is included in a simple regression equation (Eq.2) or along with other variables (Eqs 5,6 and 7 in Tables 3.2 and 3.3). Presence or absence of schools within the habitations is also not an important factor in terms of statistical significance or in terms of the value of the coefficient. This is surprising, as the presence of a school within the habitation is generally believed to be very important for participation in schooling and correspondingly as a determinant of household expenditures. At the same time, it is not so surprising, because schools are available to a large majority of the population in the country within a walking distance of 1.5 km, though not necessarily within every habitation (see Tilak 1999b, NCERT 1998). Third, the coefficient of pupil-teacher ratio is positive in value and is also statistically significant (Eq. 5). Higher pupil-teacher ratios, that is, larger number of students per teacher on an average in schools (primary) necessitate higher levels of household expenditure, may be on private coaching, etc.

Now, the results of regression equations on household expenditure on elementary education per student are reviewed. In the second set of regression equations (Table 3.3), when the total household expenditure on education was substituted by the household expenditure on elementary education per student as the dependent variable, only government expenditure on elementary education per student turned out to be statistically significant. No other variable is found to be statistically significant. Besides all the coefficients are small in value.

In all, the results based on the analysis of state level data indicate the following:

As seen in the case of coefficients of elasticity, there is a strong and positive impact of government expenditures on education (per capita or per student) on the levels of household expenditures. The regression coefficients also suggest that there is a positive and statistically

significant relationship between government expenditure and household expenditure on education. Considering this it is possible to assume that they complement each other, that is, if government spending on education increases, households would also be willing to spend more.

It may not be valid to hold that levels of household expenditure on education are related to the levels of economic development of the state. Household expenditure on education is not statistically significantly related to the level of economic development of the state, as measured in terms of SDP per capita. A better measure of economic development of the state that includes poverty, income distribution and other dimensions may produce a different set of results.

Literacy may be important in inducing families to spend more on education. As expected, literate families may become more aware of the importance of investing in education and the returns to education that may flow in the long-term.

Lack of good quality teachers in sufficient numbers resulting in high pupil-teacher ratios may be an important factor in explaining the variations in household expenditure on education. Given the inaccuracies in enrolments and the attendance/absence of teachers, probably the pupil-teacher ratio may not be a sufficiently meaningful variable to represent quality of education.

Does the availability of an upper primary school within the habitation influence the household expenditures on education? Again, the coefficients are small and are not statistically significant. But in Eqs 4 and 5, on per student expenditure on elementary education, the coefficient is negative, broadly suggesting that if a school is available, the expenditures could be less.[29]

3.2 Econometric Analysis of Household Level Data

The analysis based on state level data provided certain important insights, but it also highlighted the inadequacy of the model, particularly in terms of non-inclusion of household characteristics, which are important in estimating a family model. This inadequacy is corrected in the analysis of household level data; but some state level variables have to be ignored, due to unavailability of the same at household level. The analysis of household level data is also attempted in a format similar to the analysis of state level data and is aimed at

[29] Alternatively we have used percentage of habitations with a primary school, but the results are not very different. If household expenditure on education on travel is considered as the dependent variable, one might expect a significant effect of this variable. But this is not attempted here.

examining the same questions. The coefficients of elasticity of household expenditures to household income are estimated first, and then, the determinants of household expenditures are examined.

Elasticity of Household Expenditures on Education to Household Income

It is most commonly believed that the economic level of households determine to a great extent the level of household expenditure on any good or service, including education. The belief is that higher the level of household income, higher would be the level of expenditure on education. It has already been noted that household expenditures on education fall into a very systematic pattern by household income levels—rich households spending more than middle income and lower income groups on education. The question is what will be the marginal change in household expenditures, given a 1 per cent change in household incomes. This is estimated with the help of coefficients of elasticity of household expenditures to household incomes.

As one can expect, the coefficients of elasticity could differ between different kinds of households. The coefficients are estimated here for all groups of population, and by caste group, viz., Scheduled Tribe households, Scheduled Caste households and others (non-Scheduled households). Further, they are also estimated separately for household expenditures on girls' education and boys' education. Lastly, the estimates for all groups of population are made not only for rural India as a whole, but also by states (rural areas only).

Three types of elasticity coefficients are estimated:

- Elasticity of total household expenditure on education to total household income.
- Elasticity of per capita household expenditure on education to household income per capita.
- Elasticity of household expenditure on elementary education per student to household income per capita.

It is expected that both HHEX and HHY if standardised for the population, that is, if considered per capita, (or per student as in the third category) would yield better results. The estimates of coefficients of elasticity of household expenditures on education to household incomes are given in Table 3.4.

It is clear that all the coefficients are statistically significant with high t-values, but are very small in value. In all cases, the coefficients are less than unity. But they are all positive

in value. At the all-India level, the coefficients suggest that 1 per cent increase in household incomes result in 0.28 per cent increase in household expenditures on education. If per capita household income increases by 1 per cent, household expenditures increase by 0.38 per cent; and a similar increase in household income per capita would result in 0.35 per cent increase in expenditure on elementary education per student. In all, household expenditures on education are less elastic to changes in household income.

The coefficients are higher for Scheduled Tribe households and least in case of Scheduled Caste households. This means that Scheduled Tribe households respond to educational needs better than Scheduled Caste and non-scheduled households to a similar increase in income levels. One might expect the coefficients to be higher in the case of low income households than in the case of economically better off households, as the high income households might already be spending well on education and hence an increase in household income may not lead to any further increase in expenditure on education or on other basic needs, but may lead to increase in their expenditures on luxuries and semi-luxuries. But in the case of poor households a small increase in household income may lead to increase in expenditure on many items, including education, as all items could remain under-funded.

As one may expect, the coefficients are higher in the case of boys than in the case of girls. In other words, a given increase in household income levels may cause increase in expenditure on boys' education marginally higher than that on girls' education. Given the general gender prejudices, this is rather expected.

While highly systematic differences could not be noted in case of the estimates by states, we do find the estimates to be higher in the case of the North-eastern region, West Bengal, Tamil Nadu and to some extent Gujarat. But even in the case of these states, the value of the coefficient of elasticity is below 0.6. In other words, household expenditures increase maximum by 0.6 per cent for every 1 per cent increase in government expenditures on education. The coefficients are smallest in the case of Karnataka, Uttar Pradesh and Orissa.

While all the coefficients are small, the set of coefficients of elasticity when estimated taking per capita expenditures and per capita incomes are marginally higher than the others.

Determinants of Household Expenditure on Education

The analysis based on the state level data does provide some important insights. But the number of observations is small. Moreover, household expenditures on education could be influenced by household characteristics, which could not be considered in the state-level

analysis. So it is hoped that the analysis based on household data, which is large in size, and which would also enable the inclusion of several household characteristics, would provide a more in depth understanding of the determinants of household expenditures on education.

The choice of the variables is influenced by the availability of data. Given the results discussed in Section 2 and the findings of earlier research, one can expect social, economic, and demographic characteristic features of the households to have considerable influence on the levels of household expenditures on education. It is argued that expected rates of return would considerably influence the household investments in education—higher the rates of return to education, higher would be the present levels of family investments, and vice versa. But unfortunately, we do not have recent estimates of rates of return to education that too in detail—by different characteristics of households, or even by states, that can be used in a multivariate analysis. Hence rates of return do not figure in this model. It has already been noted that higher the caste hierarchy one belongs to, higher could be the level of the expenditure and vice versa; so could be the relationship between the economic level of the household and the expenditures. Size of the household can be regarded as an indicator of 'demographic burden' on the households. A larger size of the household comprising a number of male and female children and other members of the household, might result in lower levels of expenditures on education.

Secondly, among the individual characteristics, the gender of the child going to the school may be regarded as the most important factor. General prevalence of gender discrimination implies that households tend to spend less on the education of their girl children, in contrast to that of the male children.

The third set of factors considered is related to schools. As it is expected the family expenditures will complement or substitute the public efforts. One can expect significant relationship between household expenditures on the one hand and the quality and quantity of schooling facilities available on the other. More specifically, provision of school incentives such as noon meals, textbooks, etc., would be negatively related with household expenditures. Variables on these three indicators, viz., mid-day meals, supply of textbooks and stationery, and provision of uniforms, are used here. We have, in fact, very limited information on school related factors from the HDI survey that could be used.[30] Among others, a summary statistic like government expenditure on education per capita in the village would have been quite useful.

Lastly, the fourth factor considered is the level of development of the village. Individual and household decisions are considerably influenced by the social environment. While the total social environment cannot be comprehensively captured by any one indicator,

[30] School related data are drawn from the village schedule of the survey.

the level of development of the village can be expected to reflect the social environment in which the households are situated. Two alternative indices, viz., a 'development factor' and a village development index were constructed by the NCAER. The village development index is preferred to the other and is used here, as it is based on the availability of different facilities in villages,[31] while the development factor is based on the existence/non-existence of programmes of the government or non-government organisations.[32] It is presumed that the former would reflect the level of development of the village better. One can expect a positive relationship between village development index and the household expenditures on education.

All the variables considered are listed below:

- Household characteristics:
  - Social
    - Caste
    - Religion
    - Ethnic background (based on caste and religion)
  - Economic
    - Household income
    - Occupational level of the head of the household
    - Landholding
  - Demographic
    - Size of the household
  - Education
    - Educational level of the head of the household

- Individual characteristics
  - Gender of the student

- School related factors
  - Existence of school within the habitation
  - Existence of incentive schemes in schools such as provision of mid-day meals, supply of free uniforms, free textbooks and stationery, etc. in schools
  - Pupil-teacher ratio
  - Trained teachers (% of all teachers) in school
  - Type of institution (government, government-aided, or private) the child attends

- Development characteristics of the economy
  - Village development factor
  - Village development index

[31] It is based in all, on 45 variables on (a) infrastructure and amenities (roads, bus stop and railway station), communications (post office and telephones), information and entertainment (television, radio and library/reading room), economic infrastructure (bank and market/mandi), and necessities and amenities (drinking water, pharmacy and street lighting), (b) education, including availability of incentives in schools, (c) health and (d) others (irrigated area, government and NGO schemes of development in the village).

[32] The government/NGO schemes/programmes relate to education, health, housing, water supply, sanitation, electricity, women's welfare, credit, employment, skill development, etc.

Many of these variables were tested and finally only the following were included in the regression equations.

Variables, their Notation and Definition

HHY	Total annual household income of the household (Rs.)
HHY/pc	Total annual household income of the household per capita (Rs.)
HHY/NonAg	% of income from non-agricultural sources in total household income (%)
HHEX	Household expenditure on education, Total (Rs.)
HHEX/pc	Household expenditure on education, per capita (Rs.)
HHEX/ps	Household expenditure on education, per student (Rs.)
HHEXELY/ps	Household expenditure on elementary education, per student (Rs.)

HHED: Highest education level of the head of the household is measured in years of schooling. The years of schooling and the corresponding educational levels are defined as follows:

Illiterate	0
Below Primary	04
Primary	05
Middle (upper primary)	08
Matriculation	10
Higher Secondary	12
Graduation	15
Post-Graduatation	17
Technical/Other Diploma/Certificate	18
Professional	16
Other Higher degrees	18

CASTE Caste (dummy variable)
= 1, if Non-Scheduled Castes/Tribes ('Others')
0, otherwise (if Scheduled Castes/Tribes)

RELIGION Religion (dummy variables)

HINDU	=	1, if Hindu 0, otherwise
MUSLIM	=	1, if Mulsim 0, otherwise
CHRISTIAN	=	1, if Christian 0, Otherwise
SIKH	=	1, if Sikh 0, otherwise

GENDER Sex of the person (Dummy) = 1, if male
0, otherwise (female)

SIZE Size of the household (members of the household)

OCCUPATION Primary occupation of the head of the household (dummy variables)
CULTIVAT = 1, if cultivation, cattle tending and allied agricultural activities
0, otherwise
AgWLab = 1, if agricultural wage labourer

0, otherwise

NagWLab = 1, if non-agricultural wage labourer
0, otherwise

ARTIS = 1, if artisan/independent work and petty shop/small business
0, otherwise

OrgTRADE = 1, if organised business/trade
0, otherwise

SALARIED = 1, if salaried employment/pensioner and other qualified professional
0, otherwise

HHWk = 1, if own household/family work/domestic servant
0, otherwise

RENTIER = 1, if rentier (living on income from rent, interest, dividends, etc.)
0, otherwise

UNEMP = 1, if unemployed
0, otherwise

DOMESTIC = 1, if involved in domestic work
0, otherwise

VDI	Village Development Index
PRY/MID (dummy)	Existence of a primary or a middle (upper primary) school exists within the habitation = 1, if exits = 0, otherwise
MEALS (dummy)	Existence of the incentive scheme of mid-day meals in the school = 1, if exits = 0, otherwise
UNIFORMS	Existence of the incentive scheme of provision of free uniforms in the school (Dummy) = 1, if exits = 0, otherwise
SUPPLIES	Existence of the incentive scheme of provision of free supplies (textbooks, stationery etc.) in the school (Dummy) = 1, if exits = 0, otherwise
TYPE (dummy)	Type of school the child is attending = 1, if Government = 0, otherwise (private or government-aided)
PTR	Pupil-Teacher Ratio (in the primary school) (average number of pupils per teacher)
ELEY (dummy)	= 1, if child goes to elementary (primary or middle) school = 0, otherwise

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Descriptive statistics such as means and standard deviations of the variables are given in Table A.3.2 in the Appendix.

Results

Since the sample size is large, one may not expect that multi-collinearity would be severe. Further, inter-correlation matrix of all the independent variables used in the regression analysis, given in Table A.3.3 does not show high correlation between any two explanatory variables.[33]

Simple coefficients of correlation between household expenditures on education and several of these variables are given in Table A.3.4. Most of the coefficients are very small in value. The coefficient with total household income is just 0.13 and 0.16 with the educational level of the head of the household.

Two sets of regressions are fitted and are presented here—one set comprises equations on household expenditures on education per student and the other on total household expenditures on education. Both yield similar results. In each set, equations are estimated separately by gender, by caste group, by type of school and by levels of education. Here the ones based on household expenditure on education per student to the other set are preferred, as it is expected to yield better results, as the dependent variable is defined per student.[34] Estimates are also made separately for each state (for all groups of population—gender, caste, and categories—type of schools, and levels of education, taken together) (Table A.3.9).

In view of the problem of heteroscedasticity (see Appendix), double-log regression equation is used in the estimation here.[35]

First, the results of regression on household expenditure on education per student are given in Tables 3.5 through 3.8. Most of the regression coefficients are statistically significant at 99 per cent level of confidence; and more importantly, most have expected signs. The coefficients of determination (R^2) are small, which may not be surprising, given the large sample size. The results provide some important insights into the problem of determinants of household expenditure on education.

[33] The statistical package SPSS (version 10.0) also excludes variables in the equation that pose the problem of multi-collinearity.

[34] The other set of results, regressing total household expenditure on education, are given in the Tables A.3.5 through A.3.8 in the Appendix.

[35] It would be interesting to note that the results of the semi-log regression equation and those based on the double log equation are mostly similar in sign, the level of the significance of the coefficients, the relative values of the coefficients, the coefficients of determination, etc. but the value of the coefficients differs considerably. The coefficients were smaller—infinitesimally smaller—in case of the results of the semi-log equation.

Results for the Total Sample: Table 3.5 presents the OLS results of regressing household expenditure on education per student on several explanatory variables identified.

Household Characteristics

As expected, household income has a positive effect on the household expenditure on education. As household income increases, households tend to spend more on education.

The share of non-agricultural income in total income (HHY/NonAg) was introduced to see whether households predominantly depending upon agricultural income (or non-agricultural income) behave differently in comparison with others in investing in education. Most of the non-agricultural income could be from salaries or from business and trade. But having found the variable to be statistically not significant in any equation, this was dropped altogether.

The education of the head of the household (HHED) can be expected to have a positive effect on household expenditures on education. Education increases the awareness of the benefits of education and accordingly such households whose heads have higher education levels, spend more on education. Such a presumption is found to be true.[36] HHED is measured in terms of the years of schooling.[37] The coefficient is reasonably high and statistically significant at 99 per cent level of confidence.

As the demographic burden on the households, measured in terms of the size of the household (SIZE) increases, households may not be able to spend more on education, as demand for resources for alternative purposes increases. So one can expect a negative effect of household size on household expenditures. Results show that this is also found to be a tenable argument. Demographic burden is an important determinant of household expenditures on education.

Social status is measured in terms of caste hierarchy (CASTE). It is measured as a dummy variable (equals 0 if Scheduled Castes/Tribes and 1 for others). Household expenditures are found to be positively related to the caste hierarchy, that is, non-scheduled (caste/tribe) groups would have an advantage of spending more on education than scheduled Castes/Tribes. The higher the social status, or more precisely, the higher the caste one belongs to in the caste hierarchy, higher is the household expenditure on education.

[36] Alternatively when the highest level of education among all the members of the household is considered, it was found to be statistically not significant.

[37] When it is measured as a scale variable also, it yielded equally good results. But years of schooling is considered as a better way for measuring the educational levels.

Four dummy variables are introduced on religion. Except in the case of the dummy on MUSLIM (the dummy equals one if Muslim, zero otherwise), all other variables are statistically significant. The values of the coefficient might suggest that the probability of spending on education would be higher if one is a Sikh and least if one is a Muslim. The values of the coefficients of the variables on CHRISTIAN and HINDU fall between these two.

Occupation of the head of the household is considered as a dummy (in fact, ten dummy variables). The results do not show a very systematic meaningful pattern, though coefficients of quite a few of them are statistically significant. Probably the grouping and classification of occupational categories might not be appropriate.

School Related Variables

While choosing the education variables, a few aspects are borne in mind. Availability of a primary or middle school in the habitation is considered to measure the access to education (PRY/MID). Second, the quality of schooling is measured with the help of a proxy, viz., pupil-teacher ratio (PTR).[38] Third, the incentives provided in the school are considered, which include noon meals (MEALS), textbooks and stationery (SUPPLIES), and uniforms (UNIFORMS).

First, if a school is available within the habitation, it would obviously reduce household expenditures considerably. So existence of a primary or a middle school and household expenditures on elementary education are inversely related. The regression coefficient of PRY/MID is statistically significant at 1 per cent level.[39]

Pupil-teacher ratio (PTR) in primary schools in the village does not seem to have any significant influence on household expenditures. Only this variable among the school related variables that were included in the model, turns out to be statistically not significant in the equation (rather in all the equations, including in the subsequent tables).

All the three variables on school incentives considered here have the expected relationship with household expenditure on education. Provision of mid-day meals, supply of free textbooks and stationery, and provision of free uniforms reduces the need for more household expenditures; hence they push down the household expenditures. Mid-day meals is

[38] It is not clear whether the PTR refers to government school(s) in the village or an average of all schools. This is drawn from the village profile of the HDI survey.

[39] This is one major difference between the results from the analysis of state level data and that of household level data.

found to have quantitatively the most important negative relationship with household expenditures.

The village development index (VDI) reflects the level of development of the village, in terms of amenities available. The higher the level of development of the village, one can expect that higher would be the propensity of the households to spend more on education. The positive and statistically significant coefficients confirm such a hunch.

Two additional variables are included in regression Eq. 1—gender and type of school. GENDER (dummy taking the value of 1 if male and 0 otherwise, that is, female), has a significant effect. The household expenditures would be higher on the schooling of a child, if it is male. More details by gender can be seen in Eqs 2 and 3.

The type of school (TYPE) the child goes to that is, whether the child goes to a government school or a private school,[40] also matters. The expenditures would be higher if a child is enrolled in a private school and less if enrolled in government schools. So one expects the regression coefficient of the variable TYPE (dummy variable taking the value of 1 if enrolled in government school, 0 otherwise, that is, if the child goes to private school) to be negative. This is found to be one of the most important variables in terms of the size of the coefficient and also the t-value.

Lastly, a variable is introduced to measure the effect of the level of education on household expenditures. Obviously the expenditures would be higher in the case of secondary and higher levels of education than elementary education. So a dummy (ELEY) is introduced taking the value of 1, if the child is in elementary school, 0 otherwise, that is, if the child is enrolled in secondary or higher levels of education. The value of the coefficient is negative, and high in value and statistically significant meaning that lower the level of education lower would be the expenditures and vice versa.

In addition to the equation with all the students (boys and girls) enrolled in private or government schools, the same model is estimated, (by dropping GENDER) separately for boys (Eq. 2) and girls (Eq. 3) in Table 3.5, and separately for children enrolled in government schools, government-aided schools and private schools, by dropping TYPE (Table 3.6). The equation is also estimated by caste group (Table 3.6) and by levels of education separately (Table 3.8). The results do not show any significantly different pattern, though some differences are noteworthy.

[40] Here the private school includes government-aided and unaided private schools.

Gender-Differences in the Results: Table 3.5 also includes the Eqs 2 and 3 that refer to OLS estimates of household expenditure on education of boys and girls respectively. There is no difference in results by gender in the case of most variables.

The coefficient of the dummy variable on Muslim religion in Eqs 1 and 2 is not statistically significant; but the coefficient in the case of the equation on girls (Eq. 3) turns out to be negative, though statistically not significant, indicating the probability of having a negative effect of being a Muslim girl on household expenditure on education.

In terms of the size of the coefficient, existence of a primary or a middle school within the habitation (PRY/MID) has a stronger negative influence on the household expenditures on the education of girls as compared to boys. Provision of a school within the habitation reduces the household expenditures (probably on travel) considerably and the reduction is higher in the case of expenditure on girls.

Results by Caste-Group: One expects significant differences in the determinants of household expenditures on education between 'scheduled' (Scheduled Caste/Tribe) population and non-Scheduled population (others). Quite interestingly, we find very few variables that influence household expenditures differently.

Size of the households is an important determinant in the case of non-Scheduled households, but not a significant variable in the case of Scheduled population, though the sign of the coefficient is negative in both cases, as one expects.

Gender is also an important and statistically significant variable only in the case of non-Scheduled households. Scheduled households do not seem to make any difference between the expenditure on the education of their boys and girls.

In the case of non-Scheduled households, all the three school incentives are important: they have statistically significant and negative effect; but only MEALS and SUPPLIES are found significant in the case of scheduled households.

Pupil-teacher ratio (PTR) has a positive effect on the household expenditure in the case of both groups of population, but the effect is significant only in the case of scheduled population!

Results by Type of School: Now we turn to the estimates by type of schools. The model is also estimated separately by type of school—government, government-aided, and private. The results are given in Table 3.7.

There is a very close similarity in the results between those relating to the government schools and government-aided schools. Other than some variables on occupation, the only variable that is significant at 99 per cent level of confidence in Eq. 1 (government schools) and not significant in Eq. 2 (government-aided schools) is SUPPLIES. Provision of textbooks and stationery does not seem to be significantly influencing household expenditures on education in government-aided schools. Perhaps, many schools may not have provision of supply of free textbooks and stationery.

However, there are quite a few differences in the results between private schools on the one hand and the government and government-aided schools on the other.

CASTE and RELIGION do not seem to influence the levels of expenditures on education by the households, in private schools. All, irrespective of social status, have to spend on education in private schools, probably heavily. Sikhs, however, seem to be spending more on education in private schools than other religious groups. The variable SIKH has a positive significant effect on household expenditures on education (Eq. 3).

Also the availability of schools within the habitation does not affect expenditure on private schools. Either private schools are available in all the villages or at least all those who are found sending their children to private school have access to a private school within the village. This variable, viz., PRY/MID is a statistically significant variable in the case of the other two equations, with a significant negative value.

All the three incentives are significant in the case of the equation on government schools. But these incentives are not necessarily available in most private schools.[41] Since most private schools do not provide mid-day meals, this also turns out to be not significant in private schools, while this along with the other two incentives are statistically significant at 99 per cent level of confidence in the case of government schools (Eq. 1). Since uniforms are costly, even a small provision of uniforms would make a significant difference on household expenditures. This variable is found to be significant in all the three kinds of schools. The sign of the coefficient of SUPPLIES (provision of free textbooks and stationery) is unexpectedly positive and is statistically significant at 10 per cent level in the case of the equation on private schools.

[41] See Tilak (1994) for more details.

Lastly, while gender is not an important variable in the case of household expenditures in government and government-aided schools, this seems to be important and statistically significant in the case of private schools. Since the expenditure on private schools is normally higher, households' gender prejudices may become strong.

Results by Level of Education: When the model is estimated separately by levels of education in Table 3.8, quite a few variables on occupation categories turn out to be statistically not significant at the middle level of education. While occupation is an important variable in determining the levels of expenditure on primary education, it is not so in the case of expenditure on upper primary education.

Further, incentives (all the three) are found to matter not only at the primary level of education, but also at the upper primary level of education and accordingly in the whole of elementary education. Some of these results are presented in a summary form in Table 3.9.

State-wise Estimation of Determinants of Household Expenditure on Education

The several states in India differ in their policies relating to not only general development, but also to specific educational issues. Though all the states value education, various states adopt various policies. Some state have, for example, compulsory education acts and some do not. Households may react to the policies of the state in different ways. Hence an analysis of the state-wise sample survey data might capture these differences and provide important insights into the determinants of household expenditures on education.

Table 3.10 gives the estimates of determinants of household expenditure on education per student in various states. While most results are common and are similar to the national aggregate sample (for all), some important differences in the results of the various states are worth noting:

Caste is not a significant variable in explaining household expenditures on education in states such as Gujarat, Kerala, Maharashtra and Tamil Nadu. Religion is also not a significant variable in several states.

As summarised in Table 3.11, the incentives are found to be significant only in some states. It is only in Orissa that all the three are found to be significant. Mid-day meals is important in reducing the household expenditures only in 8 of the 16 states; provision of textbooks and stationery significantly influences household expenditure only in 8 states; and provision of uniforms in 7 states. The significance or non-significance of these variables may

reflect the 'effectiveness' of the various incentives and may have implications for action on their improvement.

The availability of a primary or an upper primary school is also significant in some but not in many states. One might expect that if access to a school in a state is high, that is, if schools are already easily available within villages across the state, this may turn out to be not statistically significant. But this variable is found to be not significant not only in a reasonably educationally advanced state like Gujarat, but also in educationally backward states such as Orissa, Rajasthan and Uttar Pradesh, in addition to the North-eastern Region.

The non-significance on GENDER in equations relating to many states such as Andhra Pradesh, Bihar, Gujarat, Himachal Pradesh, Karnataka, Kerala, Madhya Pradesh, Orissa, Tamil Nadu, Uttar Pradesh, West Bengal and the North-eastern region might mean that households do not discriminate much against girls in spending on education. The exceptions are only a few states such as Haryana, Maharashtra, Punjab and Rajasthan.

To sum up, household expenditure on education is a function of many socio-economic, household, and educational variables. The major ones are included in the functional form estimated here. The robust estimates of OLS regression equations lead us to the following conclusions:

- Household expenditures are highly elastic to household income levels.
- Household characteristics, particularly household income and the educational level of the head of the household are important determinants of household expenditures on education.
- Demographic burden of the household (size of the household) and caste are also important, but there are quite a few exceptions among groups of population, and also states. So is the case of religion.
- Generally, gender is believed to be a very significant determinant of household expenditures on education. This is not necessarily true in all cases.
- Occupational variables (occupation of the head of the household) do not show any clear and meaningful pattern in their influence on household expenditure on education. Probably, the variables may have to be more appropriately defined.
- School related variables—the incentives and the availability of school—are quite important in many cases. But the pupil-teacher ratio is not statistically significant and meaningfully related to household expenditures.
- The level of development of the village is an important determinant of household expenditures on education and it positively influences the household expenditures.

- Obviously, the higher the level of education of the pupil, the higher is the amount the household has to spend on their education.
- As both household income and also school supply side factors are found to be very important and statistically significant, one can state that both phenomena—willingness to pay and compulsion to pay—are important in India.

Some of these results along with their implications are discussed in Section 4.

Appendix: Note on Methodology—Heteroscedasticity

In the present cross sectional analysis, heteroscedasticity could be expected, as varied types of households living in various parts of the country are sampled together.[42] To find out whether there is heteroscedasticity, first regression analysis was carried on the assumption that there is no heteroscedasticity, using the semi-log regression equation of the expenditure function; and then carried a post-mortem examination of the estimated residual squares to see if they exhibit any systematic pattern. Then, the standardized residuals were plotted against the estimated explained variable to find out whether the estimated mean value of Y is systematically related to the squared residuals (Fig. 3.A.1), which showed some kind of a systematic pattern, meaning the presence of heteroscedasticity. Among the various alternative methods available to correct for heteroscedasticity, logarithmic transformation of all the variables is suggested for using in the OLS regression analysis (see Gujarati 1985, p. 210). Very often such a method is found to reduce heteroscedasticity. This is because "log transformation compresses the scales in which the variables are measured, thereby reducing tenfold difference between two values to a twofold difference" (Gujarati 1985, p. 210).

So instead of running semi-log regression equation, we have used double regression equation in our estimation. To cross check the presence of heteroscedasticity, again the standardized residuals are plotted against the standardized predicted values of Y (Fig. 3.A.2). We do not find in Fig. 3.A.2 any systematic pattern between the two variables, suggesting that perhaps heteroscedasticity is reduced to a substantial extent.

[42] Gratitude is expressed to Professor K L Krishna who, looking at the earlier results based on semi-log regression equation, kindly suggested to check for heteroscedasticity.

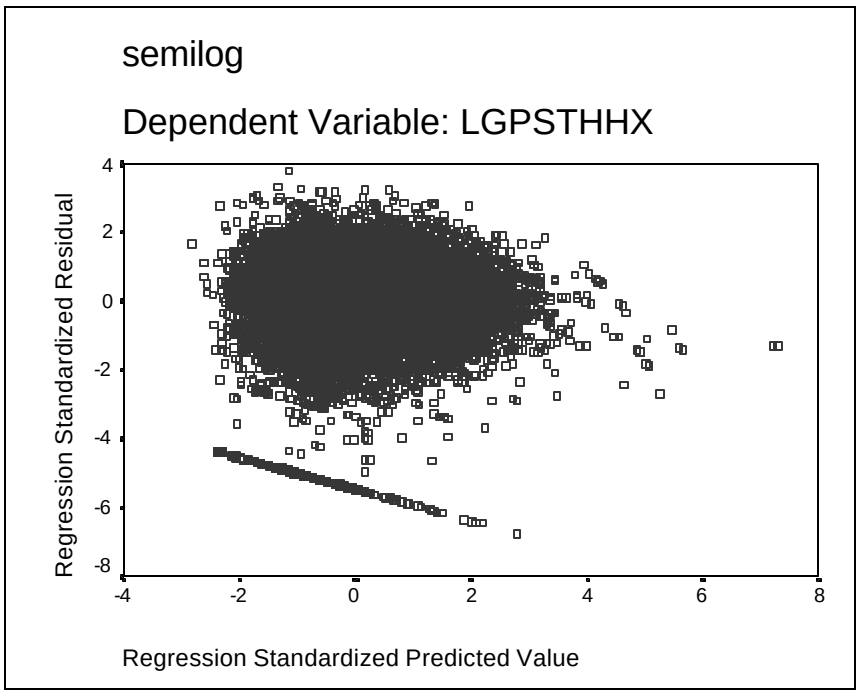

Fig. 3.A.1

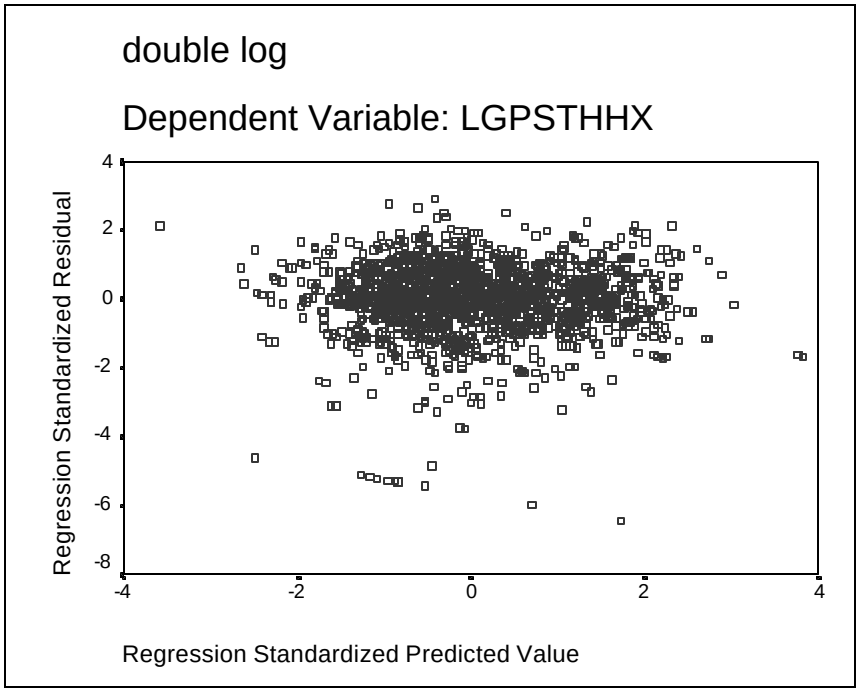

Fig. 3.A.2

Table 3.1 **Elasticity Coefficients of Household Expenditure on Education with respect to Government Expenditure on Education**		
	Coefficient	n
ln HHEX/pc on ln GEX/pc		
Elasticity Coefficient:	0.9815***	16
t-value	(4.204)	
ln HHEXELY/ps on ln GEXELY/ps		
Elasticity Coefficient:	0.90896***	16
t-value	(4.670)	
Note: Notation for significant level (two-tailed test) in all tables: *** significant at 1 per cent level; ** significant at 5 per cent level; * significant at 10 per cent level		

Table 3.2
Regression Results from State-Level Data: Dependent Variable: ln Household Expenditure on Education (Total) (Semi-Logarithmic Equation)

	Eqn.1	Eqn.2	Eqn.3	Eqn.4	Eqn.5	Eqn.6	Eqn.7
Constant	2.353	2.615	2.419	2.569	2.097	1.957	2.167
	(22.326)	(24.327)	(15.505)	(21.689)	(9.199)	(8.810)	(9.098)
GEX/pc	0.00112***						0.00224
	(3.866)						(0.560)
SDP/pc		0.000014			0.0000037	0.000023	0.0000012
		(1.297)			(0.279)	(1.434)	(0.091)
LIT			0.00594**		0.00521*	0.0627*	0.000602
			(2.146)		(1.931)	(1.793)	(1.008)
GEX%SDP				0.042349		0.0009	
				(1.569)		(0.271)	
PTR					0.00453**	0.00333**	0.003155
					(2.442)	(1.850)	(1.386)
HABITAT					0.0017559	0.0016327	0.0012680
					(0.620)	(0.632)	(0.442)
R-Square	0.516	0.107	0.248	0.149	0.565	0.671	0.605
F-value	14.94	1.68	4.61	2.46	3.57	4.07	3.06
n	16	16	16	16	16	16	16
Note: See Table 3.1							

Table 3.3
Regression Results from State-Level Data: Dependent Variable: ln Household Expenditure on Elementary Education per Student (Semi-Logarithmic Equation)

	Eqn.1	Eqn.2	Eqn.3	Eqn.4	Eqn.5	Eqn.6
Constant	2.229	2.443	2.275	2.095	2.136	2.287
	(28.592)	(20.781)	(12.846)	(13.087)	(13.623)	(11.081)
GEXELY/ps	0.00032***			0.00028***	0.00028***	0.00034***
	(4.793)			(4.043)	(4.147)	(3.806)
SDP/pc		0.000015			1.37370	0.000021*
		(1.237)			(1.398)	(1.790)
LIT			0.00554*			-0.003396
			(1.762)			(1.113)
PTR				0.00257	0.00180	0.00103
				(1.608)	(1.106)	(0.586)
HABITAT				0.00076	-0.00139	-0.00254
				(0.405)	(0.584)	(0.987)
R-Square	0.621	0.099	0.182	0.702	0.864	0.775
F-value	23.00	1.53	3.11	9.44	8.13	6.89
n	16	16	16	16	16	16
Note: See Table 3.1						

Table 3.4
Coefficients of Elasticity of Household Expenditure on Education with respect to Household Income

Regressions of	HHEXTOT on HHYTOT			HHEX/pc on HHYp/c			HHEX/ps on HHYp/c		
	Coef.	t-value	n	Coef.	t-value	n	Coef.	t-value	n
All Observations	0.276	(35.22)	36103	0.378	(42.27)	36104	0.349	(41.62)	36104
By Caste Group									
STs	0.381	(11.45)	3379	0.413	(15.49)	3216	0.344	(13.70)	3216
SCs	0.269	(13.82)	7405	0.319	(18.19)	7253	0.269	(15.92)	7253
Others	0.229	(25.86)	25318	0.353	(39.98)	24976	0.304	(37.55)	24976
By Gender									
Boys	0.285	(25.53)	21993	0.376	(39.00)	21629	0.330	(36.70)	21629
Girls	0.266	(21.42)	14110	0.339	(29.00)	13817	0.303	(27.95)	13817
By States									
Andhra Pradesh	0.379	(8.22)	1804	0.391	(10.49)	1749	0.316	(8.71)	1749
Bihar	0.281	(9.30)	2164	0.419	(14.25)	2142	0.331	(12.23)	2142
Gujarat	0.399	(7.88)	1697	0.434	(10.95)	1551	0.390	(10.38)	1551
Haryana	0.282	(11.74)	2237	0.381	(14.39)	2231	0.347	(14.32)	2231
Himachal Pradesh	0.212	(8.37)	1932	0.390	(14.47)	1926	0.291	(12.34)	1926
Karnataka	0.121	(5.12)	3053	0.162	(6.72)	3018	0.125	(5.59)	3018
Kerala	0.214	(8.82)	1627	0.408	(15.20)	1624	0.312	(13.82)	1624
Maharashtra	0.329	(12.93)	3177	0.295	(13.85)	3053	0.338	(17.68)	3053
Madhya Pradesh	0.198	(8.43)	4115	0.268	(11.38)	4034	0.235	(10.94)	4034
Orissa	0.184	(6.46)	1928	0.230	(7.73)	1911	0.202	(7.18)	1911
Punjab	0.271	(6.14)	1455	0.350	(9.31)	1405	0.350	(9.87)	1405
Rajasthan	0.318	(10.34)	2123	0.319	(12.16)	2070	0.301	(12.50)	2070
Tamil Nadu	0.365	(9.13)	1070	0.513	(12.85)	1062	0.473	(12.54)	1062
Uttar Pradesh	0.157	(9.56)	4739	0.246	(14.28)	4698	0.222	(14.33)	4698
West Bengal	0.345	(8.15)	1555	0.578	(11.85)	1549	0.547	(12.14)	1549
North-eastern Region	0.471	(9.83)	1413	0.638	(13.69)	1409	0.516	(11.54)	1409

Note: Double logarithmic equation is estimated.
All coefficients are statistically at 0.01 level.

Table 3.5
Regression Results of Household Expenditure on Education per Student, by Gender (Double Log Regression Equation)

	Eqn. 1: All		Eqn. 2: Boys		Eqn. 3: Girls	
	Reg. Coef.	t-value	Reg. Coef.	t-value	Reg. Coef.	t-value
Household Characteristics						
HHY	0.209***	28.070	0.208***	21.817	0.209***	17.596
HHED	0.105***	17.122	0.09751***	12.546	0.119***	11.805
SIZE	-0.151***	-9.520	-0.164***	-8.233	-0.128***	-4.925
CASTE	0.0681***	10.898	0.06853***	8.642	0.06944***	6.664
Religion						
HINDU	0.114***	3.368	0.134***	2.995	8.760*	1.691
MUSLIM	0.01734	0.499	0.05248	1.146	-0.3.502	-0.655
CHRISTIAN	0.228***	6.034	0.238***	4.719	0.207***	3.606
SIKH	0.294***	8.080	0.328***	6.798	0.254***	4.566
Occupation						
CULTIVAT	Excluded		Excluded		Excluded	
AgWLab	0.05214***	7.003	0.0498***	5.242	0.0571***	4.649
NAgWLab	0.02055**	2.202	0.01648	1.375	0.0218*	1.889
ARTISAN	0.03732***	4.388	0.04723***	4.298	0.0234	1.616
OrgTRADE	-0.07401***	-2.646	-0.06781*	-1.946	-0.0838*	-1.731
SALARIED	-0.007261	-0.847	-0.00385	-0.355	-0.01183	-0.846
HHWk	0.003573	0.225	0.00596	0.768	-0.001069	-0.042
RENTIER	-0.02838	-0.884	0.00782	0.189	-0.08102	-1.589
UNEMP	0.02029*	1.650	0.01189	0.768	0.00348*	1.720
DOMESTIC	0.101	1.021	0.246*	2.118	-0.253	-1.343
School Related Variables						
TYPE	-0.128***	-22.380	-0.127***	-17.543	-0.133***	-14.036
PRY/MID	-0.132***	-12.337	-0.107***	-7.903	-0.173***	-9.947
MEALS	-0.112***	-15.413	-0.104***	-10.971	-0.124***	-10.834
SUPPLIES	-0.0508***	-7.383	-0.05617***	-6.337	-0.0413***	-3.776
UNIFORMS	-4.136***	-6.332	-0.04620***	-5.496	-0.03473***	-3.343
PTR	0.005477	1.339	0.001966	0.376	0.01069	1.628
ELEY	-0.261***	-46.250	-0.270***	-39.500	-0.242***	-24.295
VDI	0.209***	14.023	0.206***	10.985	0.217***	8.860
GENDER	0.01093**	2.095				
Constant	1.604	32.485	1.603	25.245	1.610	20.619
R-Square	0.178		0.184		0.170	
Adj. R-Square	0.178		0.183		0.168	
St Error of the Est	0.454		0.449		0.461	
F-Value	272.245		178.78		104.826	
df	32598		19768		12830	

Note: See Table 3.1

Table 3.6
Regression Results of ln Household Expenditure on Education per Student, by Caste Category
(Double Log Regression Equation)

	Eqn. : SC & ST		Eqn. : Others	
	Reg. Coef.	t-value	Reg. Coef.	t-value
Household Characteristics				
HHY	0.226***	13.672	0.211***	26.091
HHED	0.124***	9.764	0.116***	17.051
SIZE	-0.04955	-1.391	-0.182***	-10.644
Religion				
HINDU	0.137***	4.098	0.101*	1.755
MUSLIM	0.181***	3.301	0.0004	0.008
CHRISTIAN	0.175***	3.966	0.227***	3.604
SIKH	0.298***	6.824	0.308***	5.171
Occupation				
CULTIVAT	Excluded		Excluded	
AgWLab	0.03108**	2.034	0.05195***	6.296
NAgWLab	0.01968	1.054	0.00.7267	0.705
ARTISAN	0.03141*	1.829	0.04950***	5.177
OrgTRADE	0.00823	0.154	-0.106***	-3.322
SALARIED	0.02957*	1.719	-0.1656*	-1.726
HHWk	0.0146	0.418	-0.00230	-0.132
RENTIER	0.07943*	1.189	-0.0501	1.413
UNEMP	0.0589**	2.387	0.00461	0.336
DOMESTIC	-0.152	-0.991	0.09790	0.426
School Related Variables				
TYPE	-0.121***	9.598	-0.130***	-20.901
PRY/MID	-0.09228***	-3.943	-0.139***	-11.837
MEALS	-0.09858***	-6.507	-0.118***	14.912
SUPPLIES	-0.09825***	-7.334	-0.03646***	-4.782
UNIFORMS	-0.00499	-0.377	-0.04599***	-6.387
PTR	0.02715***	3.260	0.005377	1.189
ELEY	-0.317***	-26.719	-0.249***	-40.009
VDI	0.172***	6.073	0.217***	13.130
GENDER	0.005774	0.537	0.01258**	2.185
Constant	1.411	17.028	2.281	38.651
R-Square	0.141		0.184	
Adj. R-Square	0.139		0.183	
St Error of the Est	0.530		0.443	
F-Value	70.60		226.985	
df	10728		25212	

Note: See Table 3.1

Table 3.7
Regression Results of Household Expenditure on Education per Student, by Type of School (Double Log Regression Equation)

	Eqn. 1: Government		Eqn. 2: Govt-aided		Eqn. 3: Private	
	Reg. Coef.	t-value	Reg. Coef.	t-value	Reg. Coef.	t-value
Household Characteristics						
HHY	0.174***	18.755	0.236***	15.823	0.281***	16.190
HHED	0.0855***	11.269	0.144***	11.461	0.147***	9.9635
SIZE	-0.0753***	-3.773	-0.261***	-8.414	-0.376***	-10.742
CASTE	0.07037***	9.227	0.05018***	3.886	0.02239	1.242
Religion						
HINDU	0.0853*	1.981	0.103*	1.899	0.0367	0.296
MUSLIM	-0.0052	-0.118	0.03839	0.689	-0.106	-0.847
CHRISTIAN	0.164***	3.113	0.198***	3.394	0.204	1.583
SIKH	0.185***	4.041	0.486***	5.287	0.333***	2.628
Occupation						
CULTIVAT	Excluded		Excluded		Excluded	
AgWLab	0.0343***	3.849	0.08278***	4.875	0.07417***	3.843
NAgWLab	0.0026	0.228	0.01569	0.829	0.1.3***	4.761
ARTISAN	0.03216***	3.048	0.05593***	3.254	0.07124***	3.254
OrgTRADE	-0.00378	-1.062	-0.111*	-2.165	-0.111*	-1.702
SALARIED	0.0148	1.294	-0.00263	-0.189	-0.01062	-0.525
HHWk	0.005978	0.294	0.01499	0.520	0.0247	0.684
RENTIER	-0.05478	-1.340	0.03059	0.500	0.0557	0.803
UNEMP	0.03191**	2.034	0.02015	0.928	0.03041	0.995
DOMESTIC	0.0753	0.691	Excluded		0.173	0.700
School Related Variables						
PRY/MID	-0.139***	-10.080	-0.176***	-8.617	0.0121	0.527
MEALS	-0.174***	-18.941	0.0568***	4.349	0.00777	0.354
SUPPLIES	-0.03779***	-4.056	-0.00663	-0.601	0.03615*	1.807
UNIFORMS	-0.0464***	-5.513	-0.03479***	-2.992	-0.05971***	-3.633
PTR	0.0116**	2.284	-0.1340*	-1.663	-0.02665**	2.667
ELEY	-0.294***	-40.442	-0.237***	-22.308	-0.122***	-9.130
VDI	0.213***	11.384	0.257***	7.965	0.164***	5.398
GENDER	0.006224	0.953	0.0047	0.474	0.0235*	1.860
Constant	1.636	26.530	1.414	15.130	1.565	10.603
R-Square	0.147		0.237		0.276	
Adj. R-Square	0.146		0.234		0.271	
St Error of the Est	0.475		0.384		0.348	
F-Value	156.935		83.177		50.877	
df	22785		6428		3335	

Note: See Table 3.1

Table 3.8
Regression Results of Household Expenditure on Education per Student, by Level of Education (Double Log Regression Equation)

	Eqn.1: Primary		Eqn.2: Middle		Eqn.3: Elementary	
	Reg. Coef.	t-value	Reg. Coef.	t-value	Reg. Coef.	t-value
Household Characteristics						
HHY	0.206***	17.896	0.186***	12.822	0.206***	22.533
HHED	0.107***	11.380	0.115***	9.610	0.111***	14.845
SIZE	0.04545*	1.847	-0.184**	-5.834	-0.04767**	-2.440
CASTE	0.07653***	8.0461	0.06554***	5.329	0.07588***	10.000
Religion						
HINDU	0.08658*	1.690	0.06495	0.930	0.08512**	2.046
MUSLIM	-0.01894	-0.360	-0.03921	-0.548	-0.02145	-0.503
CHRISTIAN	0.155***	2.659	0.176**	2.270	0.171***	3.644
SIKH	0.247***	4.464	0.253***	3.401	0.257***	5.756
Occupation						
CULTIVAT	Excluded		Excluded		Excluded	
AgWLab	0.05527***	4.844	0.03706**	2.582	0.04952***	5.491
NAgWLab	0.0220	1.544	0.0135	0.733	0.01812	1.594
ARTISAN	0.01964	1.480	0.03077*	1.840	0.02449**	2.334
OrgTRADE	-0.04737	-1.120	-0.07158	-1.434	-0.05363	-1.642
SALARIED	-0.004375	-0.339	-0.01406	-0.833	-0.9571	-0.925
HHWk	-0.006409	-0.262	0.00984	0.334	0.00372	0.195
RENTIER	-0.06277	-1.230	0.01354	0.208	-0.03655	-0.902
UNEMP	0.009169	0.499	0.02730	1.130	0.1409	0.956
DOMESTIC	0.197	1.257	-0.07955	-0.479	0.09610	0.830
School Related Variables						
TYPE	-0.179***	-19.601	-0.113***	-9.940	-0.157***	-21.908
PRY/MID	-0.132***	-8.136	-0.130***	-6.219	-0.132***	-10.225
MEALS	-0.105***	-9.372	-0.129***	-9.158	-0.112***	-12.679
SUPPLIES	-0.05766***	-5.496	-0.04553***	-3.358	-0.0544***	-6.505
UNIFORMS	-0.05192***	-5.221	-0.03599***	-2.780	-0.04813***	-6.054
PTR	0.00440	0.709	0.006804	0.858	0.00058	1.170
VDI	0.178***	7.828	0.222***	7.813	0.195***	10.908
GENDER	0.01044	1.344	-0.01264	1.263	0.004864	0.786
Constant	1.266	17.050	1.570	15.978	1.344	22.531
R-Square	0.120		0.105		0.113	
Adj. R-Square	0.119		0.102		0.112	
St Error of the Est	0.470		0.438		0.462	
F-Value	81.741		37.439		117.586	
df	14964		8014		23004	

Note: See Table 3.1

Table 3.9
Statistical Significance of Variables in Various Regression Equations

	All	*by Gender*		*By Caste*		*by Type of School*			*By Level of Education*		
		Boys	Girls	SC&ST	Non-Sc/ST	Gov	Govt-aided	Private	Primary	Middle	Eley
Household Characteristics											
HHY	***	***	***	***	***	***	***	***	***	***	***
HHED	***	***	***	***	***	***	***	***	***	***	***
SIZE	***	***	***		***	***	***	***	*	**	**
CASTE	***	***	***			***	***		***	***	***
Religion											
HINDU	***	***	*	***	*	*	*		*		**
MUSLIM				***							
CHRISTIAN	***	***	***	***	***	***	***		***	**	***
SIKH	***	***	***	***	***	***	***	***	***	***	***
Occupation											
CULTIVAT											
AgWLab	***	***	***	**	***	***	***	***	***	**	***
NAgWLab	**		*					***			
ARTISAN	***	***		*	***	***	***	***		*	**
OrgTRADE	***	*	*		***		*	*			
SALARIED				*	*						
HHWk											
RENTIER				*							
UNEMP	*		*	**		**					
DOMESTIC		*									
School Related Variables											
TYPE	***	***	***	***	***				***	***	***
PRY/MID	***	***	***	***	***	***	***		***	***	***
MEALS	***	***	***	***	***	***	***		***	***	***
SUPPLIES	***	***	***	***	***	***		*	***	***	***
UNIFORMS	***	***	***		***	***	***	***	***	***	***
PTR				***		**	*	**			
ELEY	***	***	***	***	***	***	***	***			
VDI	***	***	***	***	***	***	***	***	***	***	***
GENDER	***				**			*			

Note: See Table 3.1.

Table 3.10
Regression Results of Household Expenditure on Education per Student, by States
(Double Log Regression Equation)

	Andhra Pradesh		Bihar		Gujarat	
	Reg. Coef.	t-value	Reg. Coef.	t-value	Reg. Coef.	t-value
Household Characteristics						
HHY	0.186 ***	4.925	0.256***	8.623	0.356***	5.959
HHED	0.108***	3.540	0.0975***	5.000	0.352***	6.199
SIZE	0.221**	2.522	-0.262***	-4.688	-0.550***	-3.765
CASTE	0.166***	5.923	0.0835***	4.083	-0.06110	-1.077
Religion						
HINDU	-0.125	-0.426	0.0202	0.122	Excluded	
MUSLIM	-0.247	-0.832	-0.0358	-0215	-0.0015	-0.018
CHRISTIAN	0.0663	0.220			0.260	1.093
SIKH						
Occupation						
CULTIVAT	-0.003340	-0.107	-0.1130	-0.562	Excluded	
AgWLab	Excluded		Excluded		0.292***	5.313
NAgWLab	0.007078	0.184	0.0344	1.131	0.204***	3.607
ARTISAN	-0.153***	-3.565	0.0053	0.162	0.372***	4.350
OrgTRADE			0.183	1.021	0.163	0.300
SALARIED	0.101	1.241	0.159**	2.958	0.153	0.862
HHWk	.05885	0.740	-0.0504	-0.898	-0.02468	-0.134
RENTIER	.02435	0.170	-0.0086	-0.079	0.209	0.905
UNEMP	.03204	0.585	0.0184	0.534	0.03310	0.303
DOMESTIC	.02819	-0.147			0.857	1.119
School Related Variables						
TYPE	-0.585***	-15.226	-0.187***	-8.781	-0.466***	-8.642
PRY/MID	0.345***	4.818	-0.217*	-1.687	-0.006444	-0.034
MEALS	-0.297***	-5.840	-0243***	-3.395	-0.05053	-0.509
SUPPLIES	-0.0070	-0.194	0.0940***	2.713	-0.126	-1.620
UNIFORMS	-0.0039	-0.094	0.03702	1.250	-0.168***	-2.794
PTR	-0.7915	-0.453	-0.032***	-2.375	-0.0714**	2.053
ELEY	-0.431***	-15.009	-0.192***	-10.452	-0.222***	-4.391
VDI	0.578***	5.734	0.552***	9.686	-0.01897	-0.126
GENDER	-.001365	-0.055	0.007220	0.409	.05611	1.295
Constant	0.885	2.360	1.154	4.907	1.325	4.789
R-Square	0.326		0.237		0.230	
Adj. R-Square	0.317		0.227		0.216	
St Error of the Est	0.5017		.03553		.7625	
F-Value	34.959		24.695		16.611	
df	1732		1828		1333	

(*contd*)

Table 3.10 (*contd*)

	Haryana		Himachal Pradesh		Karnataka	
	Reg. Coef.	t-value	Reg. Coef.	t-value	Reg. Coef.	t-value
Household Characteristics						
HHY	0.211***	9.257	0.209***	9.071	0.02956	1.385
HHED	0.02262	1.440	0.06270***	3.597	0.136***	6.653
SIZE	-0.111**	-2.351	-0.126***	-2.794	-0.03855	-0.722
CASTE	-0.05633***	3.422	0.04535***	2.663	0.106***	4.446
Religion						
HINDU	0.108***	2.658	0.202***	4.019	-0.007671	-0.071
MUSLIM	Excluded		Excluded		-0.04533	-0.407
CHRISTIAN					0.285	1.628
SIKH	0.230***	3.758	0.09458	1.239		
Occupation						
CULTIVAT	-0.04072**	-2.392	0.03505*	1.937	Excluded	
AgWLab					-0.00244	-0.101
NAgWLab	-0.02528	-1.032	0.006579	0.227	0.04870*	1.908
ARTISAN	0.02949	1.203	-0.02488*	-1.188	-0.0974***	-.3.284
OrgTRADE	0.08282	1.132	0.01880	0.152	-0.239	-1.464
SALARIED	0.08785***	2.582	0.02116	0.605	-0.00012	-0.003
HHWk	0.003654	0.080	-0.01925	-0.305	0.158***	3.834
RENTIER	-0.009501	-0.092	-0.238	-1.119	-0.01735	-0.174
UNEMP	0.06605	1.629	0.130***	2.983	-0.004170	-0.117
DOMESTIC	0.163	0.876	-0.02963	-0.170	0.01303	0.043
School Related Variables						
TYPE	-0.301***	-15.138	-0.07137***	-2.594	-0.350***	-15.820
PRY/MID			-0.102***	-3.063	-0.124*	-1.895
MEALS					-0.0381**	-2.109
SUPPLIES	-0.175***	-2.964	-0.193***	-3.107	-0.0084	-0.434
UNIFORMS	0.09481**	2.289	0.05414	1.629	-0.0288	-1.356
PTR	0.009996	1.001	0.07554***	4.071	-0.0121	-0.867
ELEY	-0.213***	-13.753	-0.207***	-14.069	-0.258***	-13.670
VDI	0.06683	1.107	-.0004360	-0.075	-0.169*	-1.666
GENDER	0.03568**	2.471	0.02237	1.573	0.02293	1.356
Constant	2.053	14.314	2.087	15.128	3.155	14.083
R-Square	0.262		0.221		0.229	
Adj. R-Square	0.255		0.212		0.222	
St Error of the Est	0.3214		0.2990		0.4296	
F-Value	35.311		22.816		31.833	
df	2186		1847		2673	

(*contd*)

Table 3.10 (*contd*)

	Kerala		Maharashtra		Madhya Pradesh	
	Reg. Coef.	t-value	Reg. Coef.	t-value	Reg. Coef.	t-value
Household Characteristics						
HHY	0.188***	9.585	0.267***	12.188	0.162***	6.784
HHED	0.199***	8.619	0.03634*	1.846	0.107***	5.790
SIZE	-0.184***	-3.968	-0.265***	-5.330	-0.195***	-4.259
CASTE	0.01326	0.514	-0.005613	-0.239	0.0897***	4.732
Religion						
HINDU	Excluded		0.131***	3.581	-0.595**	-2.460
MUSLIM	-0.08072***	-4.640	0.07262	1.342	-0.500**	-2.041
CHRISTIAN	0.05965***	3.541	0.248**	1.989	-0.238	-0.902
SIKH			0.177	0.640	-0.111	-0.373
Occupation						
CULTIVAT	Excluded		Excluded		Excluded	
AgWLab	0.01775	0.995	0.05452**	2.457	0.050**	2.104
NAgWLab	-0.002414	-0.100	-0.02799	-1.257	0.0952***	3.243
ARTISAN	0.01614	0.647	0.05830**	2.371	-0.0458**	-2.052
OrgTRADE					-0.04377	-0.614
SALARIED	-0.05587**	-2.102	-0.003718	-0.129	-0.0494*	-1.919
HHWk	0.03226	0.683	0.04447	0.719	0.0713*	1.745
RENTIER	0.02986	0.499	0.354***	-3.005	-0.0966	-0.799
UNEMP	0.02072	0.614	0.07592**	1.962	0.00707	0.183
DOMESTIC			0.163	0.726		
School Related Variables						
TYPE	-0.08432***	-5.821	-0.0860***	-4.666	-0.159***	-7.818
PRY/MID	-0.04750*	-1.745	0.166***	3.609	-0.157***	-3.873
MEALS	0.06816***	2.927	0.04252***	2.718	0.0507*	1.682
SUPPLIES	-0.05233**	-2.344	-0.004383	-0.248	0.0485***	2.571
UNIFORMS	0.01060	0.561	-0.002894	-0.169	0.0120	0.611
PTR	-0.1380	-1.051	0.02060	1.442	0.00974	0.784
ELEY	-0.201***	-14.758	-0.180***	-9.472	-0.252***	-15.184
VDI	-0.005918	-0.101	-0.280***	-5.963	0.06787	1.316
GENDER	0.005277	0.411	0.03807**	2.507	-0.02115	-1.368
Constant	2.180***	17.085	1.800	15.783	2.618	9.622
R-Square	0.374		0.185		0.160	
Adj. R-Square	0.365		0.177		0.153	
St Error of the Est	.2553		0.3875		0.4154	
F-Value	43.239		25.168		24.748	
df	1595		2781		3257	

(*contd*)

Table 3.10 (*contd*)

	Orissa		Punjab		Rajasthan	
	Reg. Coef.	t-value	Reg. Coef.	t-value	Reg. Coef.	t-value
Household Characteristics						
HHY	0.109***	4.039	0.104***	2.682	0.249***	9.169
HHED	0.243***	8.827	0.149***	4.833	0.0363*	1.730
SIZE	0.01879	0.327	0.05548	0.663	-0.0009226	-0.018
CASTE	0.164***	6.150	0.0854***	2.842	0.06626***	3.279
Religion						
HINDU	0.08646	0.985	-0.0783**	-2.519	Excluded	
MUSLIM	Excluded		-0.05627	-0.429	-0.212***	-4.820
CHRISTIAN	0.171	1.211	-0.105	-1.104		
SIKH			Excluded		-0.02276	-0.155
Occupation						
CULTIVAT	Excluded		Excluded		Excluded	
AgWLab	-0.09898**	-2.081	-0.02459	-0.368	-0.01925	-0.477
NAgWLab	-0.04975	-1.259	0.08364	1.443	-0.104**	-2.354
ARTISAN	-0.04359	-1.514	0.05495	1.433	0.04905*	1.769
OrgTRADE	-0.03985	-0.301	-0.199**	-2.218	0.02358	0.244
SALARIED	0.01214	0.396	-0.06353*	-1.761	-0.0473**	-2.009
HHWk	-0.123**	-1.988	-0.07997	-0.824	-0.206***	-3.901
RENTIER	0.09024	0.639	0.278	1.233	-0.003110	-0.041
UNEMP	-0.05450	-1.097	-0.02287	-0.311	0.03432	0.717
DOMESTIC	0.271	1.029				
School Related Variables						
TYPE	0.07078	0.033	-0.452***	-13.299	-0.0795***	-2.578
PRY/MID	-0.04687	-0.984	-0.343**	-2.432	-0.05773	-0.950
MEALS	-0.180**	-2.011			0.167**	2.117
SUPPLIES	0.0800***	2.824	0.120**	2.261	-0.04312	-0.755
UNIFORMS	0.120***	5.544	0.01418	0.331	0.116**	2.503
PTR	0.06013***	3.043	0.0009548	0.045	-0.01195	-0.655
ELEY	-0.299***	-13.975	-0.315***	-10.819	-0.222***	-11.159
VDI	-0.02808	-0.662	0.136	1.432	0.281***	5.914
GENDER	-0.01938	-1.025	0.0753***	2.860	0.0434**	2.173
Constant	1.765	11.528	2.751	15.144	1.359	9.569
R-Square	0.271		0.258		0.207	
Adj. R-Square	0.260		0.246		0.197	
St Error of the Est	0.3705		0.4903		0.3689	
F-Value	24.616		21.475		21.845	
df	1593		1423		1930	

(*contd)*

Table 3.10 (*contd*)

	Tamil Nadu		Uttar Pradesh		West Bengal	
	Reg. Coef.	t-value	Reg. Coef.	t-value	Reg. Coef.	t-value
Household Characteristics						
HHY	0.316***	8.315	0.182***	12.153	0.430***	10.966
HHED	0.06604*	1.885	0.07139***	6.002	0.205***	7.772
SIZE	-0.280***	-3.029	-0.170***	-5.220	-0.390***	-5.368
CASTE	-0.04034	-1.393	0.05227***	3.963	0.0570**	2.313
Religion						
HINDU	Excluded		0.09148***	6.147	-0.242**	-2.041
MUSLIM	-0.193*	-1.731	Excluded		-0.428***	-3.565
CHRISTIAN	-0.07815	-1.488	0.493*	1.951	-0.609***	-3.220
SIKH			-0.003646	-0.038	-0.266	-1.057
Occupation						
CULTIVAT	Excluded		Excluded		Excluded	
AgWLab	-0.202**	-2.253	-0.190***	-6.628	0.164**	2.410
NAgWLab	-0.07395	-0.952	0.04368*	1.670	0.188***	3.156
ARTISAN	0.001426	0.028	0.06480***	3.125	0.05920	1.538
OrgTRADE	-0.04744	-0.396	0.006302	0.153	-0.07801	-1.096
SALARIED	0.008523	0.240	0.01029	0.706	0.007170	0.294
HHWk	0.120	1.305	0.07108**	2.451	-0.09282	-1.574
RENTIER	0.300	1.417	-0.06931	-1.063	0.02862	0.244
UNEMP	-0.02758	-0.446	0.04682**	1.970	0.07315*	1.681
DOMESTIC						
School Related Variables						
TYPE	-0.265***	-7.122	-0.116***	-10.880	-0.03384	-1.323
PRY/MID	-0.539***	-3.691	-0.0008	-0.047		
MEALS	-0.123**	-2.575			0.09545	1.358
SUPPLIES	-0.03773	-1.055	-.03611	-0.803	0.05090*	1.756
UNIFORMS	-0.01740	-0.358	-0.113***	-6.881	-0.119***	-5.053
PTR	-0.06637***	-2.616	-.007121	-0.840	0.02414	1.117
ELEY	-0.281***	-9.139	-0.174***	-14.888	-0.293***	-12.930
VDI	0.485**	2.441	.08882***	2.834	0.353***	3.284
GENDER	0.03098	1.180	-.007261	-0.643	0.01138	0.565
Constant	1.630	4.159	1.791	23.014	0.660	2.655
R-Square	0.316		0.163		0.335	
Adj. R-Square	0.301		0.159		0.324	
St Error of the Est	0.4174		.3542		0.3827	
F-Value	20.967		39.398		30.559	
df	1042		4638		1459	

(*contd)*

Table 3.10 (*contd*)

	North-eastern Region	
	Reg. Coef.	t-value
Household Characteristics		
HHY	0.504***	9.145
HHED	0.212***	5.610
SIZE	-0.434***	-4.063
CASTE	0.253***	7.517
Religion		
HINDU	Excluded	
MUSLIM	0.03713	0.982
CHRISTIAN	-0.134***	-2.905
SIKH		
Occupation		
CULTIVAT	Excluded	
AgWLab	-0.131	-1.369
NAgWLab	-0.151*	-1.910
ARTISAN	0.006381	0.132
OrgTRADE	-0.318***	-3.706
SALARIED	0.08807***	3.014
HHWk	0.009908	0.131
RENTIER	0.008878	0.081
UNEMP	0.02675	0.504
DOMESTIC		
School Related Variables		
TYPE	-0.123***	-2.771
PRY/MID	0.102	0.858
MEALS	0.003649	0.056
SUPPLIES	0.215***	4.936
UNIFORMS	0.202***	2.968
PTR	-0.02150	-1.018
ELEY	-0.303***	-11.143
VDI	0.873***	6.246
GENDER	0.01007	0.403
Constant	-1.221	
R-Square	0.419	
Adj. R-Square	0.404	
St Error of the Est	0.3709	
F-Value	28.677	
df	916	
Note: See Table 3.1		

Table 3.11
Statistical Significance of Variables on School Incentives in State-wise Equations

	MEALS (Noon Meals)	SUPPLIES (Textbooks, Stationery, etc.)	UNIFORMS (Free Uniforms)
Andhra Pradesh	xxx	--	--
Bihar	xxx	xxx	--
Gujarat	--	--	xxx
Haryana	..	xxx	xx
Himachal Pradesh	..	xxx	--
Karnataka	xx	--	--
Kerala	xxx	xx	--
Maharashtra	xxx	--	--
Madhya Pradesh	x	xxx	--
Orissa	xx	xxx	xxx
Punjab	..	xx	--
Rajasthan	xx	--	xx
Tamil Nadu	xx	--	--
Uttar Pradesh	..	--	xxx
West Bengal	--	x	xxx
North-eastern Region	--	xxx	xxx

Note: See Table 3.1
-- not significant at 90 per cent of confidence.
.. not included in the equation

4. SUMMARY AND CONCLUSIONS

Research on household expenditures on education in India is very limited; and research on the determinants of household expenditure is virtually non-existent. But the importance of studies on household expenditures on education is increasingly felt, particularly in the context of dwindling public budgets for education and the formulation of alternative policies on financing education, more specifically on the scope for cost recovery in education. Public policies are being formulated based on thin research evidence. The present study is a modest attempt to fill this major gap in research in Economics of Education in India.

Using the data collected in the Human Development in India (HDI) survey conducted by the National Council of Applied Economic research (NCAER) in 1994, the present study attempts to examine:

- the extent of household expenditure on education by different groups of population;
- the elasticity of household expenditure on education to changes in
  - household income on the one hand, and
  - government expenditure on education on the other; and
- the determinants of family expenditures on education.

The household data of the NCAER are supplemented by the data collected from official sources on government expenditure on education, SDP, etc. and other sources such as the NCERT. The study deals with rural India.

First, based on extensive tabulation of the descriptive statistics drawn from the rich household level data, a few 'stylized facts' are highlighted on the quantum, distribution and nature of household expenditure on education in rural India. Then, a model of household expenditure function is estimated, concentrating, however, on education only, to examine the determinants of household expenditure on education. Using the estimates on household expenditures on education generated at the state level data and using data collected from secondary sources, first an analysis of state level is attempted which serves as a preliminary investigation providing valuable insights into the problem, and helping in formulating the model to be estimated from the large data set relating to the households. A long array of figures and tables are generated, that yield some important results on the size and nature of household expenditures on education and their determinants, some of which have confirmed general hunches, some have questioned the general presumptions, some have provided new insights, and a few of them are really startling.

- There is nothing like 'free' education in India. Household expenditures on education are sizeable; households from even lower socio-economic background—Scheduled Castes, Scheduled Tribes, low income groups, households whose primary occupation

is not high in the occupational hierarchy—all spend considerable amounts on acquiring education, including specifically elementary education, which is expected to be provided by the State free to all.

- Important items of household expenditures consist of books, uniforms and fees. Even in the case of government primary and upper primary schools, students seem to be paying huge amounts of fees—examination and other fees.
- Households do not discriminate much against spending on girls' education.
- Substantial differences exist in household expenditures on children attending government schools, government-aided schools and private schools. Expenditure in the private schools is the highest, followed by government-aided schools and government schools in that order. The levels of household expenditures on education in private schools show more variation, than in case of other schools.
- Low-income groups spend a higher proportion of their income on education than the rich.
- That the rich spend higher amounts than the poor and middle-income groups on education is found to be true in a majority of the states. The wealth effect is somewhat consistently true in many cases—whether it is analysed by gender, or by type of schools or by any other characteristic.
- There are substantial differences in household expenditures between several states as well. But these variations are not related to economic or educational levels of the state.
- As both household income and also school supply side factors are found to be very important and statistically significant, one can state that both phenomena—willingness to pay and compulsion to pay are important in India.
- Household expenditures are found to be nearly unitary elastic (the coefficients are a little less than unity) to government expenditures on education. If government increases its expenditure on education, the households might feel enthusiastic and may willingly contribute to education, though less than proportionately.
- The OLS estimates of the regression analysis helped in identifying major determinants of household expenditures on education.
    - Household characteristics, particularly household income and the educational level of the head of the household are important determinants of household expenditures on education.
    - Demographic burden of the household (size of the household) is a very important determinant of household expenditure on education.
    - Caste and religion are also important, but there are quite a few exceptions—among groups of population and also states.

- Generally, gender is believed to be a very significant determinant of household expenditures on education. This is not necessarily true in all cases.
- Occupational variables (occupation of the head of the household) do not show any clear and meaningful pattern in their influence on household expenditure on education. Probably, the variables may have to be more appropriately defined.
- School related variables chosen—the incentives such as mid-day meals, uniforms, textbooks and stationery, etc., and the availability of school within the habitation—are quite important in many cases. But the pupil-teacher ratio is not statistically significantly and meaningfully related to household expenditures.
- Type of school that the child goes to—government, government-aided or private—is one of the most important determinants of household expenditure.
- The level of development of the village is an important determinant of household expenditures on education.
- Obviously, the higher the level of education that the child is enrolled in, the higher is the amount that the household has to spend on his/her education.

Instead of recapitulating other results, a few implications may be noted here. A couple of important policy implications emerge clearly and loudly.

- The coefficients of elasticity clearly show that government expenditures and household expenditures do not substitute each other; on the other hand, they complement each other. So if the government wishes to mobilise household finances for education, it is important that the government increases its own allocation to education considerably. Conversely, and more clearly, if government budgets on education are reduced, household expenditures may also decline resulting in severe under investment in education.
- Second, provision of schools, particularly primary and upper primary, within the rural habitations and also provision of school incentives such as mid-day meals, textbooks, uniforms, etc., would reduce the need for household expenditures considerably and thereby the demand for education could be enhanced. Mid-day meals is perhaps the most important of them all. It may be important to improve the efficiency of the mid-day meals programme. Further, all the three incentives matter not only in primary education, but also in upper primary education.

- Further, since the Constitution, and the 93rd Amendment to the Constitution that makes elementary education a fundamental right of every child in India requires the government to provide free elementary education to all, there is need for the government to abolish all kinds of fees in primary and upper primary schools.

Finally, before this study can be concluded, a couple of important caveats of the study may be noted:

The study is based on cross sectional evidence. Some may rightly feel that the dynamics of household investment decision making in education cannot be captured by the evidence provided by cross sectional surveys. But unfortunately, time series data on household expenditure on education in India are not available.

Even though neither the demand for education is analysed, nor the demand function estimated, probably 'effective demand' for education is analysed by considering household expenditures. Nevertheless, it should be admitted that the study has concentrated exclusively on household expenditures on education. Closely related dimensions, including participation and non-participation in schooling are not examined here.

Third, the specification of the expenditure functions here is constrained by the availability of data. It is not claimed that the model attempted here is a complete model. There is scope for improvement of the model with inclusion of several other household, policy related and contextual variables.

The NCAER/HDI survey has been exclusively used for a major part of the study. Since no other studies are conducted on similar lines as attempted here, using any other survey, the results could not be contrasted with any other. Further research, say based on the NSSO data, might validate our findings. A comparative analysis of the rural and urban segments in the country may be possible on the basis of NSSO data.

REFERENCES

Becker, Gary S. (1957), *Economics of Discrimination*, Chicago: University of Chicago Press [Second Edition, 1971].

——————— (1967*), Human Capital and the Personal Distribution of Income,* Woytinski Lecture, *Ann* Arbor: University of Michigan Press.

——————— (1981), *A Treatise on the Family*, Cambridge: Harvard University Press.

Behrman, Jere, R. Pollak and Paul Taubman (1982), "Parental Preferences and Provision for Progeny", *Journal of Political Economy,* 90 (1): 52–73.

Bhatty, K. (1998), "Educational Deprivation in India: A Survey of Field Investigations", *Economic and Political Weekly*, 33 (27 & 28) (4 & 11 July): 1731–40; 1858–69.

Bray, Mark (1999), *The Private Costs of Public Schooling: Household and Community Financing of Primary Education in Cambodia*, Paris: Unesco-IIEP.

Dréze, Jean and Geeta G. Kingdon (1999), *School Participation in Rural India*, Development Economics Discussion Paper No. 18, London: STRIED, London School of Economics.

Duraisamy, Malathy (1998), "Children's Schooling in Rural Tamil Nadu: Gender Disparity and Role of Access, Parental and Household Factors", *Journal of Educational Planning and Administration,* April, 12 (2): 131–54.

Education Commission (1966), *Education and Development: Report of the Education Commission 1964–66*, New Delhi: Ministry of Education [Reprint: National Council of Educational Research and Training, New Delhi, 1971].

Ermisch, John and M. Francesconi (2000), "Educational Choice, Families, and Young People's Earnings", *Journal of Human Resources,* 20 (1) (Winter): 143–76.

Gertler, Paul and Jacques van der Gaag (1988), "Measuring the Willingness to Pay for Social Services in Developing Countries", LSMS *Working Paper no.45,* Washington DC: World Bank.

Gertler, P. and P. Glewwe (1990), "The Willingness to Pay for Education in Developing Countries: Evidence from Rural Peru", *Journal of Public Economics*, 42 (3): 251–75.

——————— (1992), "The Willingness to Pay for Improvements in School Quality: Evidence from Ghana", Paper presented at World Bank Conference on Public Expenditures and the Poor: Incidence and Targeting, Washington DC, June.

Gujarati, Damodar (1985), *Basic Econometrics,* New Delhi: McGraw–Hill [International Student Edition].

Hassan, Zahir A., and S.R. Johnson (1977), *Urban Food Consumption Patterns in Canada*, Ottawa: Agriculture Canada Publication # 77(1 January).

Intriligator, M.D. (1980), *Econometric Models, Techniques and Applications,* New Delhi: Prentice–Hall of India.

Kothrai, V.N. (1966), "Factor Cost of Education in India", *Indian Economic Journal,* 13 (5) (April–June): 631–47.

Majumdar, Tapas (1983), *Investment in Education and Social Choice,* Cambridge: Cambridge University Press.

McMahon, Walter W. (1984), "Why Families Invest in Education", in S. Sudman and M.A. Spaeth (eds), *The Collection and Analysis of Economic and Consumer Behaviour Data: In Memory of Robert Ferber,* Chicago: Bureau of Economic and Business Research, University of Illinois at Urbana–Champaign, pp. 75–91.

Mehrotra, Santosh and E. Delamonica (1998), "Household Costs and Public Expenditure on Primary Education in Five Low Income Countries: A Comparative Analysis", *International journal of Educational Development,* 18 (1) (January): 41–61.

MHRD (Ministry of Human Resource Development) (various years), *Selected Educational Statistics,* New Delhi: Department of Education, Government of India.

——————— (various years), *Analysis of Budgeted Expenditure on Education in India,* New Delhi: Department of Education, Government of India.

——————— (1996), *Selected Information on School Education in India 1994–95,* New Delhi: Department of Education, Government of India.

NCERT (National Council of Educational Research and Training) (1998), *Sixth All-India Educational Survey,* New Delhi.

NSSO (National Sample Survey Organisation) (1991, 1993), "Participation in Education", NSS 42nd Round July 1986–June 1987, *Sarvekshana* 14 (3) Issue no. 46 (January–March 1991); 16 (4) Issue no. 55 (April–June 1993); and 17 (1) Issue no. 56 (July–September 1993).

———————(1998), *Attending an Educational Institution in India: Its Level, Nature and Cost,* NSS 52nd Round 1996–97, Report no. 439, New Delhi: Government of India.

Panchamukhi, P.R. (1965), "Educational Capital in India", *Indian Economic Journal,* 12 (3) (January–March): 306–14.

——————— (1989), *Economics of Educational Finances,* Bombay: Himalaya.

——————— (1990), *Private Expenditure on Education in India: An Empirical Study,* Pune: Indian Institute of Education (Mimeo).

——————— (1990), *Private Expenditure on Education in India: An Empirical Study,* Pune: Indian Institute of Education (unpublished).

Peltzman, S. (1973), "The Effects of Government Subsidies-in-Kind on Private Expenditures: The Case of Higher Education", *Journal of Political Economy*, 81: 1–27.

PROBE (1998), *Public Report on Basic Education*, New Delhi: Oxford University Press.

Pryor, Frederic L. (1968), *Public Expenditures in Communist and Capitalist Nations*, London: George Allen and Unwin.

Ram, Rati and T.W. Schultz (1979), "Life Span, Health, Savings and Productivity", *Economic Development and Cultural Change*, 27 (3) (April): 399–421.

Schultz, Theodore W. (1981), *Investing in People*, Berkeley: University of California Press.

Shah, K.R. (1969), "Private Cost of Elementary Education", in H.N. Pandit (ed.) *Measurement of Cost Productivity and Efficiency of Education*, New Delhi: National Council of Educational Research and Training, pp. 57–74.

Shariff, Abusaleh (1999), *India Human Development Report*, New Delhi: Oxford University Press.

Sipahimalani, Vandana (1998) *Education in the Rural Indian Household: A Gender-based Perspective*, Working Paper No. 68, New Delhi: National Council of Applied Economic Research.

Sri Prakash and S. Chowdhury (1994), *Expenditure on Education: Theory, Models and Growth*, New Delhi: National Institute of Educational Planning and Administration.

Tan, Jee-Peng, K.H. Lee and A. Mingat (1984), *User Charges for Education: The Ability and Willingness to Pay in Malawi*, Staff Working paper no. 661, Washington DC: World Bank.

Tilak, J.B.G. (1985), *Analysis of Costs of Education*, Occasional paper no. 10, New Delhi: National Institute of Educational Planning and Administration.

——————— (1987), *Economics of Inequality in Education*, New Delhi: Sage Publications.

——————— (1988), "Costs of Education in India", *International Journal of Educational Development*, 8 (1): 25–42.

——————— (1991), "Family and Government Investments in Education", *International Journal of Educational Development*, 11 (2): 91–106.

——————— (1994), "South Asian Perspectives (on Alternative Policies for the Finance, Control, and Delivery of Basic Education)", *International Journal of Educational Research*, 21 (8) (1994): 791–98.

——————— (1996), "How Free is 'Free' Primary Education in India?", *Economic and Political Weekly*, 31 (5 & 6) (3 & 10 February): 275–82; and 355–66.

——————— (1999a), "Investment in Human Capital in India: An Inter-State Analysis of Stock and Flow of Human Capital", *Journal of Indian School of Political Economy,* 11 (January–March): 39–75.

——————— (1999b), "Elementary Education in Rural India: Promises and Performance", in R.C. Choudhury and P. Durga Prasad (eds), *Basic Rural Infrastructure and Services for Improved Quality of Life,* Hyderabad: National Institute of Rural Development, pp. 449–78.

——————— (2000a), *Education Poverty in India*, Occasional Paper no.29, New Delhi: National Institute of Educational Planning and Administration (May).

——————— (2000b), *Household Expenditure on Education in India: A Preliminary Examination of the 52nd Round of the National Sample Survey,* New Delhi: National Institute of Educational Planning and Administration.

——————— (2001a), "Household Expenditure on Education in India: A Few Stylized Facts" in S. M. Dev, P. Antony, V. Gayathri and R.P. Mamgain (eds), *Social and Economic Security in India,* New Delhi: Institute for Human Development, pp. 191–218.

——————— (2001b), "Household Expenditure on Education in India," *Business Perspectives* 3 (2) (July–December): 61–86. Also to appear in M.J. Manohar Rao (ed.) *Festchrift* (forthcoming), in Honour of Professor P.R. Panchamukhi.

——————— (2001c), "Determinants of Household Expenditure on Education in India," *International Journal of Development Planning Literature,* Vol.16, No. 1.

Tilak, J.B.G. and Ratna Sudarshan (2001), *Private Schooling in Rural India*, Working Paper No. 79, New Delhi: National Council of Applied Economic Research.

Williams, Ross A. (1983), *Interaction between Government and Private Outlays,* Discussion paper no. 79, Canberra: Australian National University, Centre for Economic Policy Research.

APPENDIX

Table A.2.1
Estimates of Household Expenditure on Education in Rural India
(Rs. per Student)

	Primary		Middle	
	NSS (1995–96)	NCAER (1994)	NSS (1995–96)	NCAER (1994)
All	**297**	**341**	**640**	**473**
By Gender				
Boys	305	349	640	479
Girls	286	329	641	466
By Type of School				
Govt.	219	271	550	420
Local Body	223		541	
Govt-aided	622	338	883	470
Private	911	844	1249	971

Table A.2.2
Coefficients of Correlation between Several Components of Household Expenditure on Elementary Education

	TOTAL	FEES	BOOKS	PVT	TRAN	BOARD
TOTAL	1.000					
FEES	1.000	1.000				
BOOKS	0.988	0.991	1.000			
PVT	0.847	0.837	0.754	1.000		
TRAN	0.989	0.986	0.954	0.917	1.000	
BOARD	0.971	0.967	0.923	0.948	0.996	1.000

Notation:
FEES: Examination and other fees; BOOKS: Books and stationery
PVT: Private coaching; TRAN: Transport
BOARD: Boarding; TOTAL: Total

Table A.2.3
Household Expenditure on Education per Student, by Components

	By Gender		By Type of School			
	Boys	Girls	Govt	Govt-aided	Private	Total
Total HH Expenditure on education	607.06	496.14	480.64	593.96	1100.44	563.71
School exam & other fees	118.78	88.68	71.15	109.05	361.73	107.02
Books, stationary & uniforms	376.28	331.9	341.39	341.78	521.46	358.94
Private Coaching	51.81	38.08	30.85	82.29	84.26	46.44
Travel	32.19	21.01	17.32	40.35	77.48	27.82
Boarding & lodging	27.97	16.46	19.9	20.48	55.51	23.47
% Distribution						
Total HH Expenditure on education	100.0	100.0	100.0	100.0	100.0	100.0
School exam & other fees	19.6	17.9	14.8	18.4	32.9	19.0
Books, stationary & uniforms	62.0	66.9	71.0	57.5	47.4	63.7
Private Coaching	8.5	7.7	6.4	13.9	7.7	8.2
Travel	5.3	4.2	3.6	6.8	7.0	4.9
Boarding & lodging	4.6	3.3	4.1	3.4	5.0	4.2

Table A.2.4
Coefficients of Correlation between several Components of Household Expenditure on Education

		FEES	BOOKS	PVT	TRAN	BOARD	TOTAL
Exam. & other Fee	FEES	1.000	0.390	0.152	0.265	0.173	0.662
Books & Stationery	BOOKS		1.000	0.149	0.199	0.120	0.786
Pvt. Coaching	PVT			1.000	0.124	0.111	0.442
Transport	TRAN				1.000	0.106	0.434
Boarding	BOARD					1.000	0.512
Total	TOTAL						1.000

Table A.2.5

Per Student Expenditure on Education by different sources of Income and Levels of Education

	Elementary	Secondary	High	All
Agricultural Income				
Upto 10000	392.01	795.98	1502.82	571.80
10001– 20000	242.82	529.11	948.63	334.54
20001–30000	305.42	523.25	647.78	382.57
30001– 40000	347.33	747.33	.	414.00
40001–50000	279.29	370.00	.	290.63
50001–60000	316.67	1140.00	1440.00	706.00
Total	386.68	787.82	1488.58	563.71
Non-Agricultural Income				
Up to 10000	389.10	792.26	1499.46	568.45
10001– 20000	334.10	676.02	1170.30	448.92
20001–30000	364.02	751.69	1341.86	547.78
30001– 40000	252.84	526.82	886.14	371.05
40001–50000	456.21	674.30	2387.50	624.08
50001–60000	969.00	1980.00	.	1306.00
60001–70000	120.00	.	.	120.00
70001–80000	442.50	522.75	.	496.00
80001–90000	50.00	.	.	50.00
Total	386.68	787.82	1488.58	563.71

Table A.3.1

Coefficients of Correlation: State Level Aggregate Data: 16 States

	HHEX	HHEX/pc	HHEX/ps	SDP/pc	LIT	PTR	HABITAT /Mid	GEX/pc	HABITAT/Pry	GEXELY/ps
HHEX	1.000									
HHEX/pc	0.975	1.000								
HHEX/ps	0.980	0.947	1.000							
SDP/pc	0.292	0.288	0.317	1.000						
LIT	0.476	0.614	0.433	0.450	1.000					
PTR	0.605	0.565	0.530	-0.127	-0.020	1.000				
HABITAT/Pry	0.114	0.169	0.127	0.550	0.509	-0.400	1.000			
GEX/pc	0.742	0.815	0.663	0.463	0.724	0.383	0.318	1.000		
GEX/SDP	0.415	0.468	0.319	-0.526	0.297	0.366	-0.195	0.438	1.000	
HABITAT/Mid	-0.121	-0.091	-0.059	0.615	0.174	-0.591	0.810	0.054	-0.523	1.000
GEXELY/ps	0.789	0.840	0.796	0.216	0.630	0.237	0.437	0.697	0.414	0.127

Notation:
HHEX: Household expenditure on education (Total)
HHEX/pc: Household expenditure on education per capita
HHEX/ps: Household expenditure on elementary education per student
SDP/pc: SDP per capita
LIT: Literacy
PTR: Pupil-teacher ratio in primary schools
HABITAT/Pry: % of habitations having a primary school within
GEX/pc: Government expenditure on education per capita
GEX/SDP: Government expenditure on education as % of SDP
HABITAT/Mid: % of habitations having a middle school within

Table A.3.2
Descriptive Statistics of Variables used in the Regression Analysis of the Household Level Data

	No. of Obs.	Minimum	Maximum	Mean	Standard Deviation
HHEX	36105	1	18600	563.71	864.26
HHEX/pc	36105	1.1	15600	563.71	731.45
HHY	36105	677	974958	35175.04	46717.44
HHY/NonAg	36105			0.0807	0.2176
HHED	36105	0	18	1.7483	1.8272
SIZE	36105	1	32	7.4879	3.5866
CASTE	36105			2.6076	0.6524
Religion					
HINDU	36105			0.8354	0.3708
MUSLIM	36105			0.0984	0.2978
CHRISTIAN	36105			0.0263	0.1601
SIKH	36105			0.0310	0.1733
Occupation of the Head of the Household					
CULTIVAT	36007			0.4556	0.4980
AgWLab	36007			0.1546	0.3615
NagWLab	36007			0.0885	0.2840
ARTISAN	36007			0.1068	0.3088
OrgTRADE	36007			0.0082	0.0905
SALARIED	36007			0.1070	0.3091
HHWk	36007			0.0262	0.1599
REINTIER	36007			0.0062	0.0783
UNEMP	36007			0.0462	0.2099
DOMESTIC	36007			0.0007	0.0263
TYPE	36105			0.7006	0.4580
PRY/MID	36090			0.9041	0.2945
School Incentives					
MEALS	36090			0.1759	0.3808
SUPPLIES	36090			0.2349	0.4240
UNIFORMS	36090			0.2655	0.4416
PTR	36090	0	91	41.8274	31.7639
ELEY	36105			0.7112	0.4532
VDI	36090	0	73	39.3224	13.2584
GENDER	36105			0.6092	0.4879
Valid No. of Obs.	35992				

Table A.3.3

Inter-Correlation Matrix of Variables Considered for Multiple Regression Analysis (Household Level Data)

	HHEX	HHEX/ps	HHY	HHED	SIZE	CASTE	MEALS	SUPPLIES	UNIFORMS	PTR	VDI	ELEY	GENDER	TYPE	HINDU	MUSLIM	CHRISTIAN	SIKH	CULTIVAT	AgWLab	NAgWLab	ARTISAN	OrgTRADE	SALARIED	HHWk	RENTIER	UNEMP	DUMDOME	PRY/MID	
HEX	1	.846	.128	.161	-.029	.087	-.032	-.054	-.056	-.019	.067	-.321	.063	-.147	-.015	-.039	.039	.073	-.012	.017	.008	.016	-.012	-.013	-.003	-.003	-.007	-.002	-.036	-.0
HEX/ps		1	.151	.190	-.035	.103	-.038	-.064	-.066	-.022	.079	-.266	.032	-.138	-.017	-.046	.046	.087	-.014	.020	.009	.019	-.014	-.015	-.003	-.004	-.008	-.002	-.042	-.0
HY			1	.143	.354	.134	.005	-.034	-.035	-.003	.041	-.069	-.019	-.046	.005	-.034	.003	.058	-.007	.002	.005	.009	.036	-.011	.009	.009	-.016	-.004	.011	-.1
HED				1	-.056	.131	-.038	.01	-.026	-.018	.062	-.091	-.037	-.139	-.006	-.015	.068	-.017	.012	-.018	.001	-.015	.018	.014	.005	.001	-.012	-.006	-.013	-.1
ZE					1	.084	-.046	-.057	0	.016	-.053	.030	-.037	.019	-.004	.049	-.081	.012	.006	-.011	-.027	.01	.015	.009	.018	-.015	-.001	-.005	.002	-.0
ASTE						1	.002	-.074	-.028	-.039	.060	-.042	-.027	-.051	-.092	.172	-.056	.018	.016	.005	-.013	-.013	-.006	-.007	.009	.002	-.004	-.01	-.048	-.1
EALS							1	.249	.302	.074	.293	-.006	-.028	.012	.031	-.020	.037	-.083	-.005	.019	.061	-.011	-.025	-.050	-.008	-.007	.008	.002	.126	-.0
JPPLIES								1	.395	.056	.205	.011	-.026	-.127	-.099	.090	.123	-.065	-.014	-.020	-.002	-.009	-.004	.052	-.012	.002	.015	.003	.173	-.0
NIFORMS									1	.111	.237	.01	-.028	.011	.013	.022	-.008	-.075	.006	-.033	.020	.005	.004	-.001	-.007	.002	.011	.001	.182	-.0
TR										1	.129	.011	.012	.026	.015	.027	-.067	-.013	-.014	.019	.007	-.018	-.005	.001	-.003	.005	.015	.002	.359	-.0
DI											1	-.047	-.066	-.050	-.078	.019	.059	.070	-.034	.042	.026	.001	-.017	-.014	-.002	.003	-.003	.016	.353	-.0
LEY												1	-.118	.099	-.019	.033	-.020	.001	.002	.002	-.008	-.008	.011	.003	.003	-.009	.007	.001	.009	.0
ENDER													1	-.017	.026	-.004	-.025	-.023	.008	-.007	-.011	-.005	.003	.004	.002	-.001	.006	.006	.003	.0
YPE														1	.130	-.114	-.140	.040	-.029	.093	.014	.031	-.007	-.087	-.017	-.010	-.009	.008	.057	.0
NDU															1	-.744	-.370	-.403	-.026	.025	.026	.022	-.007	-.032	-.011	-.014	.013	.012	.035	-.0
USLIM																1	-.054	-.059	.017	-.004	-.01	-.020	-.006	.006	0	.015	-.001	-.009	-.040	-.0
HRISTIAN																	1	-.029	.007	-.009	-.021	-.021	-.005	.029	.034	.018	-.016	-.004	-.079	.0
KH																		1	.021	-.049	-.027	.01	.035	.037	-.002	-.008	-.007	-.005	.052	.0
JLTIVAT																			1	-.391	-.285	-.316	-.083	-.317	-.150	-.072	-.201	-.024	-.045	-.0
gWLab																				1	-.133	-.148	-.039	-.148	-.070	-.034	-.094	-.011	.037	.0
agWLab																					1	-.108	-.028	-.108	-.051	-.025	-.069	-.008	.010	.0
RTS																						1	-.032	-.120	-.057	-.027	-.076	-.009	-.001	.0
gTRADE																							1	-.032	-.015	-.007	-.020	-.002	-.005	.0
ALARIED																								1	-.057	-.027	-.076	-.009	.013	.0
HWk																									1	-.013	-.036	-.004	-.001	-.0
ENTIER																										1	-.017	-.002	-.006	-.0
NEMP																											1	-.006	.015	.0
OMESTIC																												1	.009	.0
RY/MID																													1	-.0
HY/NonAg																														

Table A.3.4 Simple coefficients of correlation between Household Expenditure on Education and	
	r
Education level of the head of the household	0.161
Highest education of a male member in the household	-0.020
Highest education of a female member in the household	-0.017
Literacy status of head of the household	-0.091
Pupil-teacher Ratio	-0.019
Agricultural Income of the Household	0.021
Non-Agricultural Income of the household	-0.003
Total Income of the household	0.128
Household Income per capita	-0.029
No. of male children in the household	-0.006
No. of female children in the household	0.001
Weighted productive economic asset index	-0.018
Weighted unproductive economic asset index	-0.024
Gender of the Head of the Household	0.002
Presence of a son in the household	0.021
Caste	0.087
Size	-0.029
Gender of the Head of the Household	-0.063
Existence of Approach Road to the village	0.026
Existence of a Bus Stop	0.045
Existence of a Railway Station	0.002
Existence of a Library/Reading Room	0.003
Availability of Electricity	-0.056
Village Infrastructure	0.065
Village Development Factor	-0.002
Composite Index of Village Infrastructure	0.067
Mid-day Meals (general category)	-0.032
Free Supplies (general category)	-0.054
Uniforms/Scholarships/Others (general category)	-0.056
Mid-day Meals (special category)	-0.011
Free Supplies (special category)	-0.017
Uniforms/Scholarships/Others (special category)	0.002

Table A.3.5

Regression Results of Total Household Expenditure on Education, by Gender (Double Log Regression Equation)

	All India		Boys		Girls	
	Reg. Coef.	t-value	Reg. Coef.	t-value	Reg. Coef.	t-value
Household Characteristics						
HHY	0.185***	22.480	0.183***	17.410	0.187***	14.190
HHED	0.07810***	11.488	0.07368***	8.606	0.08629***	7.719
SIZE	-0.234***	-13.357	-0.221***	-10.053	-0.253***	-8.770
CASTE	0.07059***	10.127	0.06052***	6.929	0.08690***	7.531
Religion						
HINDU	0.124***	3.334	0.144***	2.928	0.09704*	1.691
MUSLIM	0.02847	0.743	0.06420	1.273	-0.02646	-0.447
CHRISTIAN	0.242***	5.793	0.238***	4.290	0.232***	3.636
SIKH	0.279***	6.940	0.334***	6.298	0.213***	3.449
Occupation						
CULTIVAT	Excluded		Excluded		Excluded	
AgWLab	0.06356***	7.732	0.06451***	6.165	0.06270***	4.725
NAgWLab	0.01970	1.192	0.01897	1.437	0.02288	1.388
ARTISAN	0.03702***	3.898	0.05164	4.267	0.01515	0.990
OrgTRADE	-0.08052***	-2.607	-0.09641****	-2.512	-0.05420	-1.046
SALARIED	-0.01374	-1.453	-0.009673	-0.810	-0.01872	-1.209
HHWk	0.002219	0.127	0.01035	0.465	-0.01174	-0.412
RENTIER	-0.02241	-0.632	-0.001719	-0.038	-0.05299	-0.938
UNEMP	0.02823**	2.079	0.01795	1.053	0.04660**	2.082
DOMESTIC	-0.123	1.123	0.264**	2.060	-0.228	-1.092
School Related Variables						
TYPE	-0.161***	-25.478	-0.159***	-20.051	-0.167***	-15.929
PRY/MID	-0.125***	-10.601	-0.09644***	-6.471	-0.172***	-8.928
MEALS	-0.113***	-14.017	-0.105***	-10.064	-0.123***	-9.747
SUPPLIES	-0.02453***	-8.494	-0.06969***	-7.139	-0.05534***	-4.569
UNIFORMS	-0.04703***	-6.523	-0.05419***	-5.853	-0.03778***	-3.285
PTR	0.004485	0.993	-0.0002775	-0.048	0.01144*	1.574
ELEY	-0.378***	-60.668	-0.393***	-52.125	-0.347***	-31.504
VDI	0.203***	12.312	0.193***	9.310	0.225***	8.276
GENDER	0.03629***	6.299				
Constant	1.830	33.559	1.8550	26.519	1.829	21.155
R-Square	0.201		0.212		0.180	
Adj. R-Square	0.201		0.211		0.179	
St Error of the Est	0.5013		0.4949		0.5104	
F-Value	315.841		212.252		112.568	
df	32598		19768		12805	

Note: See Table 3.1

Table A.3.6

Regression Results of Total Household Expenditure on Education, by Caste (Double Log Regression Equation)

	SC & ST		Other Castes	
	Reg. Coef.	t-value	Reg. Coef.	t-value
Household Characteristics				
HHY	0.214***	12.152	0.183***	20.382
HHED	0.101***	7.445	0.08841***	11.644
SIZE	-0.162***	-4.255	-0.256***	-13.480
Religion				
HINDU	0.146***	4.106	0.09763	1.530
MUSLIM	0.182**	3.104	-0.002238	-0.035
CHRISTIAN	0.178***	3.779	0.215***	3.201
SIKH	0.254***	5.450	0.293***	4.421
Occupation				
CULTIVAT	Excluded		Excluded	
AgWLab	0.03365**	2.059	0.06882***	7.500
NAgWLab	0.01553	0.777	0.008938	0.780
ARTISAN	0.03185*	1.734	0.04874***	4.584
OrgTRADE	0.03941	0.690	-0.125***	-3.515
SALARIED	0.02444	1.329	-0.02129**	-1.996
HHWk	0.01771	0.489	-0.004430	-0.229
RENTIER	0.08372	1.172	-0.04444	-1.126
UNEMP	0.03732	1.414	0.01811	1.190
DOMESTIC	-0.196	-1.196	0.176	1.286
School Related Variables				
TYPE	-0.144***	-10.694	-0.164***	-23.656
PRY/MID	-0.08631***	-3.448	-0.136***	-10.399
MEALS	-0.114***	-7.016	-0.117***	-13.327
SUPPLIES	-0.108***	-7.568	-0.04615***	-5.443
UNIFORMS	-0.007553	-0.533	-0.05213***	-6.511
PTR	0.02600***	2.918	0.004895	0.973
ELEY	-0.424***	-33.432	-0.369***	-53.325
VDI	0.151***	4.992	0.215***	11.696
GENDER	0.04821***	4.193	0.03296***	5.147
Constant	1.608	18.143	1.933	24.766
R-Square	0.166		0.206	
Adj. R-Square	0.164		0.206	
St Error of the Est	0.5665		0.4921	
F-Value	85.314		262.319	
df	10728		25212	

Note: See Table 3.1

Table A.3.7

Regression Results of Total Household Expenditure on Education, by Type of School (Double Log Regression Equation)

	Government		Government-aided		Private	
	Reg. Coef.	t-value	Reg. Coef.	t-value	Reg. Coef.	t-value
Household Characteristics						
HHY	0.147***	14.563	0.201***	11.878	0.273***	13.139
HHED	0.04968***	6.018	0.141***	9.822	0.145***	8.199
SIZE	-0.194***	-8.944	-0.268***	-7.604	-0.376***	-8.974
CASTE	0.07436***	8.962	0.03812***	2.600	0.02288	1.060
Religion						
HINDU	0.08716*	1.861	0.112*	1.828	0.08226	0.554
MUSLIM	-0.005131	-0.106	0.05443	0.860	-0.05624	-0.375
CHRISTIAN	0.182***	3.181	0.212***	3.209	0.243	1.580
SIKH	0.143***	2.870	0.525***	5.035	0.400***	2.634
Occupation						
CULTIVAT	Excluded		Excluded		Excluded	
AgWLab	0.04178***	4.314	0.08617***	4.468	0.112***	4.833
NAgWLab	0.002018	0.160	0.007334	0.341	0.107***	4.121
ARTISAN	0.03021***	2.632	0.05161***	2.644	0.09925***	3.787
OrgTRADE	-0.03780	-0.976	-0.136**	-2.339	-0.08892	-1.134
SALARIED	0.005235	0.421	0.0002164	0.014	-0.007405	-0.306
HHWk	-0.002851	-0.129	0.02482	0.758	0.04421	0.976
RENTIER	-0.03901	-0.877	0.01129	0.162	0.06577	0.794
UNEMP	0.04150**	2.443	0.01679	0.681	0.06914*	1.889
DOMESTIC	0.09205	0.776			0.201	0.679
School Related Variables						
PRY/MID	-0.133***	-8.874	-0.179***	-7.744	0.04198	1.524
MEALS	-0.181***	-18.105	0.07839***	5.282	0.4132	0.157
SUPPLIES	-0.04301***	-4.243	-0.02787**	-2.212	005366**	2.241
UNIFORMS	-0.05172***	-5.647	-0.05220***	-3.953	-0.06409***	-3.257
PTR	0.01136**	2.054	-0.01420	-1.552	-0.03499***	-2.926
ELEY	-0.421***	-53.178	-0.356***	-30.887	-0.192***	11.959
VDI	0.209***	10.268	0.236***	6.433	0.173***	4.776
GENDER	0.03057***	4.304	0.02841**	2.521	0.04996***	3.305
Constant	1.887***	28.135	1.642***	15.478	1.542***	
R-Square	0.173		0.254		0.240	8.729
Adj. R-Square	0.172		0.251		0.234	
St Error of the Est	0.5165		0.4361		0.4165	
F-Value	190.919		91.194		42.023	
Df	22785		6428		3335	

Note: See Table 3.1

Table A.3.8

Regression Results of Total Household Expenditure on Education, by Level of Education (Double Log Regression Equation)

	Primary		Middle		Elementary	
	Reg. Coef.	t-value	Reg. Coef.	t-value	Reg. Coef.	t-value
Household Characteristics						
HHY	0.185***	14.452	0.158***	10.308	0.185***	18.406
HHED	0.06611***	6.332	0.08835***	6.984	0.07556***	9.201
SIZE	-0.169***	-6.332	-0.243***	-7.307	-0.218***	-10.142
CASTE	0.07738***	7.341	0.06577***	5.058	0.07746***	9.282
Religion						
HINDU	0.07110	1.252	0.04646	0.629	0.07052	1.541
MUSLIM	-0.02659	-0.456	-0.05502	-0.727	-0.03101	-0.661
CHRISTIAN	0.142**	2.196	0.169	2.064	0.161***	3.125
SIKH	0.175**	2.851	0.213***	2.710	0.200***	4.060
Occupation						
CULTIVAT	Excluded		Excluded		Excluded	
AgWLab	0.07314***	5.784	0.04013***	2.645	0.06259***	6.310
NAgWLab	0.02430	1.540	0.01916	0.983	0.02058*	1.646
ARTISAN	0.01449	0.986	0.04119**	2.329	0.02555**	2.213
OrgTRADE	-0.09076*	-1.936	-0.05468	-1.036	-0.06970*	-1.941
SALARIED	-0.01414	-0.988	-0.02344	-1.313	-0.01992*	-1.750
HHWk	0.01576	0581	-0.01493	-0.473	0.009485	0.451
RENTIER	-0.04780	-0.845	-0.02168	-0.315	-0.03686	-0.827
UNEMP	0.02234	1.098	0.02784	1.090	0.02106	1.299
DOMESTIC	0.155	0891	-0.03683	-0.210	0.09574	0.752
School Related Variables						
TYPE	-0.228***	-22.493	-0.143***	-11.918	-0.200***	-25.370
PRY/MID	-0.142***	-7.899	-0.115***	-5.203	-0.133***	-9.370
MEALS	-0.105***	-8.491	-0.120***	-8.062	-0.109***	-11.198
SUPPLIES	-0.09320***	-8.017	-0.04734***	-3.303	-0.07882***	-8.562
UNIFORMS	-0.05863***	-5.320	-0.04988***	-3.643	-0.05817***	-6.653
PTR	0.002487	0.361	0.01131	1.349	0.006296	1.160
VDI	0.203***	8.043	0.189***	6.316	0.199***	10.098
GENDER	0.02485***	2.885	0.01128	1.066	0.02413***	3.545
Constant	1.474	17.917	1.772		1.545	23.544
R-Square	0.101		0.088		0.097	
Adj. R-Square	0.100		0.085		0.0960	
St Error of the Est	0.5204		0.4633		0.5085	
F-Value	67.372		30.853		98.485	
df	14964		8014		23004	

Note: See Table 3.1

Table A.3.9

Regression Results of ln Total Household Expenditure on Education, by States
Double Log Regression equations

	Andhra Pradesh		Bihar		Gujarat	
	Reg. Coef.	t-value	Reg. Coef.	t-value	Reg. Coef.	t-value
Household Characteristics						
HHY	0.174***	4.381	0.204***	6.055	0.322***	5.340
HHED	0.08125***	2.546	0.0878***	3.969	0.297***	5.165
SIZE	0.113	1.229	-0.259***	-4.099	-0.717***	-4.852
CASTE	0.190***	6.452	0.0956***	4.121	-0.05613	-0.978
Religion						
HINDU	-0.196	-0.639	-0.002194	-0.012	Excluded	
MUSLIM	-0.310	-0.998	-0.08819	-0.468	0.03795	0.457
CHRISTIAN	0.01225	0.039			0.292	1.212
SIKH						
Occupation						
CULTIVAT	-0.01675	-0.512	-0.007611	-0.334	Excluded	
AgWLab	Excluded		Excluded		0.282***	5.075
NAgWLab	0.03067	0.760	0.01946	0.565	0.150***	2.623
ARTISAN	-0.129***	-2.864	-0.02313	-0.624	0.366***	4.231
OrgTRADE			0.200	0.984	0.110	0.201
SALARIED	0.109	1.280	0.190***	3.109	0.167	0.929
HHWk	0.08986	1.078	-0.02733	-0.430	-0.007857	-0.042
RENTIER	-0.02533	-0.169	0.03999	0.325	0.173	0.741
UNEMP	0.03274	0.570	0.0071910	0.184	0.04770	0.432
DOMESTIC	-0.05699	-0.284			0.936	1.209
School Related Variables						
TYPE	-0.682***	-16.934	-0.241***	-9.995	-0.523***	-9.604
PRY/MID	0.321***	4.267	-0.144	-0.779	0.05252	0.272
MEALS	0.387***	-7.263	-0.206**	-2.538	-0.05305	-0.529
SUPPLIES	-0.01438	-0.380	0.0820***	2.086	-0.130*	-1.652
UNIFORMS	0.01435	0.333	0.0473	1.409	-0.164***	-2.695
PTR	0.007071	0.386	-0.0353**	-2.310	0.06896*	1.961
ELEY	-0.551***	-18.323	-0.296***	-14.242	-0.319***	-6.234
VDI	0.515***	4.874	0.513***	7.947	-0.01554	-0.102
GENDER	0.01533	0.584	0.0586***	2.931	0.05903	1.346
Constant	1.313	3.338	1.404	5.263	1.645	5.877
R-Square	0.364		0.241		0.249	
Adj. R-Square	0.355		0.232		0.236	
St Error of the Est	0.5260		0.4028		0.7714	
F-Value	41.250		25.271		18.436	
df	1732		1828		1333	

(contd)

Table A.3.9 (*contd*)

	Haryana		Himachal Pradesh		Karnataka	
	Reg. Coef.	t-value	Reg. Coef.	t-value	Reg. Coef.	t-value
Household Characteristics						
HHY	0.201***	8.154	0.162***	6.259	0.03881	1.622
HHED	0.001853	0.109	0.04594**	2.357	0.08400***	3.670
SIZE	-0.157***	-3.078	-0.133***	-2.647	-0.216***	-3.860
CASTE	0.06933***	3.888	0.04020**	2.111	0.119***	4.486
Religion						
HINDU	0.108**	2.459	0.215***	3.826	-0.004512	-0.037
MUSLIM	Excluded		Excluded		0.02859	-0.229
CHRISTIAN					0.334*	1.699
SIKH	0.246***	3.702	0.107	1.250		
Occupation						
CULTIVAT	-0.04546**	-2.466	0.02449	1.210	Excluded	
AgWLab	Excluded		Excluded		0.008467	0.313
NAgWLab	-0.03871	-1.458	-0.03095	-0.955	.05552*	1.941
ARTISAN	0.008189	0.308	-0.02684	-1.147	-0.106***	-3.189
OrgTRADE	0.07835	0.989	0.09130	0.659	-0.218	-1.188
SALARIED	0.08806**	2.389	0.02330	-0.596	0.007585	0.189
HHWk	0.008292	0.167	-0.01168	-.0.166	0.09251**	2.005
RENTIER	-0.01267	-0.114	-0.256	-1.078	-0.009449	-0.084
UNEMP	0.06681	1.521	0.123**	2.517	0.01250	0.313
DOMESTIC	0.204	1.010	-0.06821	-0.349	0.05385	0.158
School Related Variables						
TYPE	-0.370***	-17.218	-0.145***	-4.722	-0.409***	-16.507
PRY/MID			-0.06781*	-1.824	-0.106	-1.445
MEALS					-0.0572***	-2.826
SUPPLIES	-0.135**	-2.109	-0.243***	-3.494	-0.01091	-0.501
UNIFORMS	0.07155	1.595	0.08858***	2.383	-0.02023	-0.851
PTR	0.004609	0.426	0.05361***	2.584	-0.01713	1.096
ELEY	-0.324***	19.289	-0.298***	-18.103	-0.361***	-17.075
VDI	0.05565	0.851	-0.006667	-0.102	-0.185	-1.628
GENDER	0.06467***	4.135	0.05433***	3.417	0.03408*	1.798
Constant	2.247	14.461	2.372	15.378	3.349	13.340
R-Square	0.321		0.252		0.255	
Adj. R-Square	0.314		0.243		0.248	
St Error of the Est	0.3481		0.3343		0.4815	
F-Value	46.867		27.090		36.528	
Df	2186		1847		2673	

(contd)

Table A.3.9 (*contd*)

	Kerala		Maharashtra		Madhya Pradesh	
	Reg. Coef.	t-value	Reg. Coef.	t-value	Reg. Coef.	t-value
Household Characteristics						
HHY	0.168***	7.543	0.236***	8.743	0.143***	5.378
HHED	0.199***	7.587	0.01250	0.515	0.0874***	4.249
SIZE	-0.177***	-3.359	-0.274***	-4.470	-0.232***	-4.528
CASTE	-0.006253	0.214	-0.01235	-0.427	0.0893***	4.219
Religion						
HINDU	Excluded		0.136***	3.022	-0.606**	-2.246
MUSLIM	-0.07869***	-3.982	0.07781	1.167	-0.510*	-1.866
CHRISTIAN	0.05800***	3.031	0.274*	1.784	-0.242	-0.819
SIKH			0.232	0.678	-0.132	-0.398
Occupation						
CULTIVAT	Excluded		Excluded		Excluded	
AgWLab	0.02047	1.010	0.07530***	2.754	0.0743***	2.801
NAgWLab	0.01142	0.418	-0.04389	-1.600	0.106***	3.247
ARTISAN	0.01553	0.548	0.04596	1.516	-0.04163*	-1.671
OrgTRADE					-0.106	-1.330
SALARIED	-0.05170*	-1.712	-0.02052	-0.577	-0.03123	-1.086
HHWk	0.07220	1.345	0.008217	0.108	0.0935**	2.049
RENTIER	0.01373	0.202	-0.294**	-2.028	-0.08582	-0.637
UNEMP	0.005039	0.131	0.114**	2.382	0.02653	0.615
DOMESTIC			0.283	1.021		
School Related Variables						
TYPE	-0.110***	-6.663	-0.139***	-6.140	-0.175***	-7.727
PRY/MID	-0.03503	-1.142	0.137**	2.416	-0.199***	-4.414
MEALS	0.05014*	1.895	0.03998**	2.073	0.04866	1.447
SUPPLIES	-0.06115**	-2.411	-0.01696	-0.779	0.0476**	2.261
UNIFORMS	0.01289	0.600	-0.01796	-0.849	0.001040	0.047
PTR	-0.007471	-0.501	0.02154	1.224	0.02257	1.628
ELEY	-0.284***	-18.423	-0.275***	-11.731	-0.381***	-20.612
VDI	-0.01424	-0.214	-0.306***	-5.287	0.05864	1.019
GENDER	0.007197	0.493	0.05374***	2.871	0.01405	0.814
Constant	2.312	15.945	2.075	14.757	2.824***	9.300
R-Square	0.374		0.184		0.192	
Adj. R-Square	0.365		0.177		0.186	
St Error of the Est	0.2901		0.4776		0.4636	
F-Value	43.309		25.093		30..978	
df	1595		2781		3257	

(contd)

Table A.3.9 (*contd*)

	Orissa		Punjab		Rajasthan	
	Reg. Coef.	t-value	Reg. Coef.	t-value	Reg. Coef.	t-value
Household Characteristics						
HHY	0.05347*	1.826	0.102**	2.186	0.207***	6.129
HHED	0.188***	6.315	0.07886**	2.122	-0.004939	-0.189
SIZE	0.001301	0.021	-0.07021	-0.696	-0.04894	-0.756
CASTE	0.139***	4.825	0.08856**	2.444	0.05742**	2.285
Religion						
HINDU	0.02367	0.250	-0.06030	-1.609	Excluded	
MUSLIM	Excluded		-0.04099	-0.259	-0.197***	-3.600
CHRISTIAN	0.111	0.728	-0.06533	-0.569		
SIKH			Excluded		0.05934	0.324
Occupation						
CULTIVAT	Excluded		Excluded		Excluded	
AgWLab	-0.05583	-1.086	-0.119	-1.480	-0.002733	-0.054
NAgWLab	-0.006228	-0.146	0.06181	0.885	-0.105*	-1.928
ARTISAN	-0.01767	-0.568	0.04299	0.930	0.04210	1.221
OrgTRADE	0.02822	0.198	-0.145	-1.336	0.103	0.854
SALARIED	0.01187	0.358	-0.113***	-2.607	-0.04419	-1.510
HHWk	-0.07767	-1.162	-0.236**	-2.016	-0.162**	-2.464
RENTIER	0.127	0.833	0.316	1.164	0.02945	0.312
UNEMP	-0.01460	-0.272	-0.03541	-0.399	0.04338	0.730
DOMESTIC	0.345	1.214				
School Related Variables						
TYPE	-0.01570	-0.687	-0.554***	-13.534	-0.0859**	-2.238
PRY/MID	-0.03197	-0.621	-0.259	-1.522	-0.09428	-1.248
MEALS	-0.159	-1.639			0.180*	1.835
SUPPLIES	0.08942***	2.922	0.08471	1.326	-0.06346	-0.894
UNIFORMS	0.112***	4.813	0.03097	0.600	.07423	1.287
PTR	0.06817***	3.194	-0.01381	-0.534	-0.01410	-0.621
ELEY	-0.464***	-20.060	-0.490***	-13.977	-0.339***	-13.699
VDI	-0.07156	-1.563	0.114	0.998	0.286***	4.845
GENDER	0.01053	0.516	0.114***	3.587	0.06386**	2.574
Constant	2.218	13.413	2.985	13.633	1.660	9.406
R-Square	0.305		0.271		0.172	
Adj. R-Square	0.294		0.259		0.162	
St Error of the Est	0.4402		0.5911		0.4586	
F-Value	29.061		22.995		17.387	
df	1593		1423		1930	

(contd)

Table A.3.9 (*contd*)

	Tamil Nadu		Uttar Pradesh		West Bengal	
	Reg. Coef.	t-value	Reg. Coef.	t-value	Reg. Coef.	t-value
Household Characteristics						
HHY	0.252***	6.244	0.144***	8.304	0.348***	7.579
HHED	0.08247**	2.220	0.04848***	3.517	0.183***	5.944
SIZE	-0.454***	-4.620	-0.275***	-7.288	-0.509***	-5.976
CASTE	-0.02989	-0.971	0.04630***	3.030	0.0594**	2.060
Religion						
HINDU	Excluded		0.09672***	5.608	-0.182	-1.310
MUSLIM	-0.214*	-1.805	Excluded		-0.369***	-2.622
CHRISTIAN	-0.07206	-1.290	0.528*	1.804	-0.539**	-2.432
SIKH			0.005869	0.053	-0.330	-1.120
Occupation						
CULTIVAT	Excluded		Excluded		Excluded	
AgWLab	-0.184*	-1.926	-0.174***	-5.244	0.164**	2.059
NAgWLab	-0.03996	-0.484	0.04236	1.398	0.156**	2.228
ARTISAN	0.02359	0.438	0.05776**	2.403	0.03600	0.798
OrgTRADE	-0.06295	-0.494	-0.01165	-0.243	-0.07414	-0.889
SALARIED	0.01952	0.517	-0.002658	-0.157	0.02317	0.812
HHWk	0.159	1.632	0.08934***	2.659	-0.04503	-0.652
RENTIER	0.310	1.375	-0.06973	-0.923	0.07059	0.513
UNEMP	-0.01591	-0.242	0.05515**	2.003	0.07394	1.450
DOMESTIC						
School Related Variables						
TYPE	-0.296***	-7.466	-0.159***	-12.871	-0.05431*	-1.813
PRY/MID	-0.588***	-3.785	0.01073	0.530		
MEALS	-0.135***	-2.643			0.03659	0.445
SUPPLIES	-0.05240	-1.376	-0.02632	-0.505	0.05616*	1.655
UNIFORMS	0.01666	0.322	-0.141***	-7.435	-0.151***	-5.482
PTR	-0.08097***	-2.999	-0.01301	-1.324	0.02664	1.053
ELEY	-0.385***	-11.780	-0.294***	21.644	-0.493***	-18.591
VDI	0.383*	1.814	0.119***	3.286	0.320**	2.541
GENDER	0.03234	1.158	0.03511***	2.681	0.02113	0.895
Constant	2.308	5.535	2.051	22.731	1.187	4.078
R-Square	0.329		0.189		0.349	
Adj. R-Square	0.314		0.185		0.338	
St Error of the Est	0.4441		0.4105		0.4482	
F-Value	22.219		47.030		32.610	
df	1042		4638		1459	

(contd)

Table A.3.9 (*contd*)

	North-eastern Region	
	Reg. Coef.	t-value
Household Characteristics		
HHY	0.493***	7.982
HHED	0.273***	6.460
SIZE	-0.756***	-6.319
CASTE	0.218***	5.792
Religion		
HINDU	Excluded	
MUSLIM	0.09311**	2.199
CHRISTIAN	-0.150***	-2.891
SIKH		
Occupation		
CULTIVAT	Excluded	
AgWLab	-0.157	-1.464
NAgWLab	-0.153*	-1.721
ARTISAN	0.02342	0.433
OrgTRADE	-0.403***	-4.193
SALARIED	0.09648***	2.949
HHWk	-0.01096	-0.129
RENTIER	-0.005224	-0.043
UNEMP	0.01949	0.328
DOMESTIC		
School Related Variables		
TYPE	-0.07943	-1.603
PRY/MID	0.114	0.857
MEALS	0.006887	0.094
SUPPLIES	0.139***	2.860
UNIFORMS	0.151**	1.976
PTR	-0.01721	-0.728
ELEY	-0.425	-13.990
VDI	0.881***	5.632
GENDER	0.02739	0.980
Constant	-0.911	2.432
R-Square	0.416	
Adj. R-Square	0.401	
St Error of the Est	0.4154	
F-Value	28.312	
df	916	
Note: See Table 3.1		