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ISAD Reference Code: WB IBRD/IDA WB_IBRD/IDA_88-10

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KPO 672-98 - Proposal copies, Jan - Mar 1983



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EDUCATION AND INFORMAL
SECTOR EMPLOYMENT

A RESEARCH PROPOSAL

(RPO 672-98)

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March 1983

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ABSTRACT

0.01 This research proposal addresses an issue of major importance for Bank operations that has not so far been analyzed in the existing literature: What is the economic performance of those graduates of the school system who are engaged in the so-called "informal sector" of the economy of developing countries?

0.02 The existing empirical evidence on the economic role of education has been based almost exclusively on samples of government and large firm employees. This treatment would be valid if wages for similar kinds of labor were equalized across sectors and activities by means of perfect mobility. In such a case it would be immaterial which sector is sampled in order to assess the economic effect of education. But several studies (the most recent being Byerlee, Eicher, Liedholm and Spencer, 1983, for Sierra Leone) and casual observation of developing country labor markets suggests that such equalization does not take place. Minimum wage and other labor legislation, unionization and other institutional factors characterize particular labor markets. Due to these restrictions to entry, wages are above those levels needed to clear such markets and there is an excess supply of labor to them.

0.03 In most developing countries, however, the majority of urban labor ends up working in labor markets where legislation and institutional factors are less binding and hence where restrictions to entry are less. This section of the labor force usually includes wage labor working in small, non-unionized and non-registered enterprises, self-employed labor and those in family businesses. In these activities earnings perform more

of a clearing role and therefore reflect better the relative scarcity or abundance of different types of labor and hence their contribution to the economy.

0.04 A previous Research Committee project on "Farmer Education and Farm Efficiency" has significantly contributed to our knowledge on the effect of education on rural productivity. A more recent Research Committee project on the "Labor Market Consequences of Educational Expansion" is generating results on the effect of education in the large firm sector of the economy. The proposed project aims at filling the knowledge gap on the economic performance of the educated who are "employed" in the non-farm, non-modern sector in developing countries.

0.05 This gray area of economic activities, often referred to as the "informal sector", accounts for more than one half of total urban employment in many poor countries. The proportion of new flows of graduates who will seek first entry into these activities is even higher. Consequently, any educational policy which disregards conditions in this sector of the economy will miss an important empirical dimension of the problem.

0.06 Much of the literature debate surrounding developing country labor markets refers to "sectors" - rural farm, rural non-farm, urban formal, urban informal. The terms "informal" and "formal" are also used in this proposal as a shorthand for delineating those activities in which earnings have and do not have a market clearing function, respectively. These should not, however, be regarded as strict compartments for two reasons. Firstly, in urban areas the labor market conditions relating to different activities can be placed on a continuum ranging from those in which earnings are solely a result of competitive forces to those in which

institutional factors are clearly dominant. Secondly, many individuals may work in more than one sector at any one time and even more important, may move between sectors (and unemployment) over time. While concentrating attention on those currently working at the competitive end of the continuum i.e., in informal sector activities, the project will inevitably also consider other parts of the continuum and the ways in which individuals move between them.

0.07 The proposal addresses one central research question, the answer to which would enhance existing knowledge on the socio-economic role of schooling in developing country settings: Do the more educated engaged in informal sector activities, other things being equal, "perform" or behave differently from the less educated? The performance test goes beyond the traditional earnings differential and extends to small enterprise efficiency and job search behaviour.

0.08 The research design is primarily based on household data so that in addition to informal sector workers a number of participants engaged in less competitive activities can also be included. This is important in view of addressing labor supply questions, especially during the job search process. To complement the household data, small enterprise surveys in activities which have been shown to contain many of the self-employed will also be made.

0.09 Preparatory work has identified five potential research sites for this project: Upper Volta, Ivory Coast, Peru, Indonesia and China. The criteria used were a combination of the existence of a large informal sector in the particular country and previous work on it as to allow cost effective sampling; the importance of the country for Bank operations regarding human resource development; the willingness of the Government to

support the research project; and the existence of local institutions for research collaboration. For timing and budgetary reasons, the present phase of the research refers only to Peru. Preparatory work on the Ivory Coast, Upper Volta, China and Indonesia continues so as to possibly include them at a later stage as a follow up to the proposal in hand.

I. MAIN ISSUES AND ANALYTICAL FRAMEWORK

A. Introduction

1.01 There are always potential dangers in establishing exclusive categories for purposes of classification. In labor market studies of developing countries, the terms "formal" and "informal" sector have emerged. The definition of these terms and their usefulness have been debated for a decade. Quite clearly, on any of the conventional definitions the activity of a small family business is very different to that of large scale manufacturing. At the same time, many activities fall between these two extremes and are spread out along a continuum. As a first stage in conceptualizing the issues in this research proposal, however, some form of categorization is useful since the focus is on particular types of activity and their associated labor market. The distinction used in this proposal to categorize workers into formal and informal sectors is the extent to which there is a tendency in the activity in which they work for the wage (or earnings) to perform a clearing role in the labor market. (See Harberger, 1971).

1.02 Much of the information used to assess proposed education investment projects in developing countries has been drawn from statistical data on formal sector wage employment. Although it is true that the highly qualified will most likely eventually find modern, formal or public sector jobs, it has become clear in recent years that a significant proportion of all individuals who have received some schooling can expect to spend at least part of their working lives outside such "organized" sectors. In rural areas this means working in either farm employment or off-farm employment (Leiserson and Anderson, 1980). Much valuable research has been

undertaken by the Bank and other institutions and individual researchers on the complex relationship in rural settings between education and agricultural productivity (e.g., Lockheed, Jamison and Lau 1980, Jamison and Lau 1982). And, of course, work is continuing on the effect of education among those employed by formal sector establishments (e.g., Knight and Sabot 1981). However, there is a notable dearth of research on education and employment in both the informal off-farm sector and the urban informal sector.

1.03 Interest in this topic within the Bank, therefore, derives from a lack of assurance on the economic performance of graduates of the school system across the whole labor market. Manpower surveys and the resulting forecasts of skill needs in developing countries have been based largely on data representative of the urban formal sector. ^{1/} Similarly, cost-benefit studies have typically used data referring only to those workers employed for wages and salaries in the formal private sector and in the public sector. ^{2/} However, in the case of most developing countries this population is a small fraction of the country's labor-force. In the cities alone, over one half of workers are commonly employed in the informal sector, yet little is known about the effect which schooling has on their performance. While much has been written about the effects of schooling on occupational attainment, earnings potential, job productivity and other issues, the focus has been on the formal sector. Bowman (1980, p.13) has described this situation very clearly:

^{1/} For example, see Government of Malaysia, (1973).

^{2/} See Psacharopoulos (1973), Appendix B for the earnings sources of 28 cost benefit studies in developing countries.

"In reading the results of ... rate-of-return investigations of education ... it is important that we ... remind ourselves of the systematic bias ... against the inclusion of returns to education in nonwage activities. Most of the rate of return studies are based on data of wage and salaried persons only. No one knows how much of a contribution to growth may derive from a better educated population of independent entrepreneurs."

1.04 Clearly, as the informal sector grows and becomes the sector in which very many school leavers will seek their first employment, it becomes increasingly important to analyze the economic effects of schooling in this sector if investment decisions in education are to be linked to an accurate assessment of economic returns.

B. Goals and Objectives

1.05 The central objective of this research proposal is to assess the effects of education on those individuals working in the informal sector. Analysis of this sector, however, is made in the context of the total urban labor market. At any one time, an individual may be unemployed, combining household domestic and economically productive work, employed part time in the informal sector while looking for a formal sector job, working full time in the informal sector and regarding this as either a temporary or permanent situation, or working full time in the formal sector. Within the informal sector itself, members may be apprentices, wage employees, self employed or non-wage workers in a household enterprise. Over time, an individual can be expected to move between several of these states, especially during the early years of his labor force participation.

1.06 As a result of this complexity, the proposal is divided into two parts. First, it concentrates on analysing the effects of education on the economic performance of those individuals who at one point in time are engaged in the informal sector as wage earners, household workers or self employed. The underlying approach of this part of the proposal is human

capital theory. Second, while still concentrating on those working in the informal sector, the proposal aims to analyse the factors involved in an individual's (or household's) choice of labor market strategy in the context of the options described above. This part of the research will be based on models of job search and household decision making.

C. Research Focus

1.07 Prior to a presentation of the methods to be used to approach the research goals, some discussion of the data types and the units of analysis is required.

1.08 The person not engaged in the formal sector but seeking economically productive employment can be assumed to allocate his (her) time across different activities i.e., self-employment, wage employment or job search (including open unemployment) such that the expected returns from the last hour in each are equated. If, alternatively, instead of focussing on decisions made by the individual, attention is placed on the household, the issue is again one of optimal time allocation but in this case it is the expected returns to the household which are equated.

1.09 If, for simplicity, it is assumed that the individual (household) has no innate preferences or tastes in favor of or against any of these activities then the expected marginal value of an additional hour of self-employment, the net hourly wage of employees and the expected marginal value arising from an additional hour of search will all be equal.

1.10 In practice, there may be systematic differences in these values for a given individual or between apparently identical individuals for several reasons including different non-monetary or psychic costs and benefits associated with each activity (e.g., working conditions), restrictions set by household domestic work, barriers to entry, lack of information and errors in decision making. Across individuals with different characteristics the list must be lengthened. Not only will less productive workers have lower earnings but so also will those who suffer the effects of discrimination. Careful standardization is thus required before one can seriously attempt to isolate the effects of education on earnings. Similarly, the impact of education on expected returns to job search and hence on search behaviour must be carefully separated from the influence of other variables.

1.11 Some of the difficulties mentioned above could be avoided if it were possible to directly observe the effect of the educational or training levels of workers on the performance of the enterprises (including one-person businesses) in which they are employed. One, at first sight, appealing approach is to directly estimate a production function of the form:

$$Q = f(K, N, H) \quad (1)$$

where Q is output, K is physical capital input, N is input of uneducated labor and H is a suitable measure of the service flow from educated labor. In agricultural studies, the Cobb-Douglas function has usually been favored

(Lockheed, Jamison and Lau, 1980), although alternatives have also been proposed. ^{4/} The central aim of such an approach is to isolate the effect of H on Q. In some studies this has been interpreted as the difference in productivity between educated and less educated labor while others have seen it as the effect of education in pushing the enterprise closer to its technological frontier. Important extensions of this latter approach have examined the impact of education on the proximity that farmers achieve to their profit maximization positions (allocative efficiency) by the use of a profit function derived from a Cobb-Douglas production function (Jamison and Lau 1982).

1.12 There are, however, a number of good reasons why it would be very unwise to use production function studies as the primary approach to analyze education-productivity relationships in the urban informal sector. Firstly, the bulk of informal activities are concentrated in services and trading within which it is notoriously difficult to define a real output measure and to specify a production function in the normal sense. Secondly, the wide spread of secondary i.e. industrial activities in the informal sector means that any general survey will pick up only a very limited number of observations in most activities. If sufficient observations were obtained in a small number of activities then the results, although interesting in themselves, could well be atypical of the informal sector as a whole. These comments do not rule out the use of production functions altogether and, where there appear to be

^{4/} In aggregate production function studies, alternatives such as the single and two level CES functions have also been used.

concentrations of particular activities, such studies may be a useful adjunct to other data sources.

1.13 The central focus of the research proposal is, therefore, directed towards measuring the effect of education and training and testing a number of related hypotheses with the aid of data taken from observations on individuals within households.

1.14 While the survey of households will concentrate on picking up information on informal sector workers, it will also cover some working in the formal sector and is likely to include some unemployed persons. It will also pick up information on women who combine household domestic work with part time employment. In this case, part time employment in the informal sector may not be combined with job search but is a direct response to the restrictions set by domestic responsibilities. All this comparative information should prove extremely valuable for two reasons. Firstly, information across the urban labor market will give a view of the market as a whole and will therefore provide a base for analyzing determinants of labor supply to different sectors. Secondly, as explained below, there are certain hypotheses regarding behaviour in different parts of the labor market that are particularly interesting.

1.15 The problems of obtaining reasonably accurate income information at the household level cannot, however, be disregarded and it may also be necessary to construct some expenditure data as a check. In addition, any factors which lead to substantial seasonal variation in earnings will need to be very carefully allowed for.

D. Research Questions and Methodology

1) The Effect of Education and Training on Observed Earnings and Productivity

1.16 One way of isolating the effects of education on the productivity of those engaged in the informal sector is to follow Schultz's (1975) distinction between (a) worker or production efficiency i.e. how well a task is performed and (b) entrepreneurial or allocative efficiency i.e. decisionmaking ability.

1.17 Prior to that discussion, however, it is useful to make a somewhat crude division of informal sector activities, which are very heterogeneous, into various categories. As a start, five categories can be identified together with the respective skill levels associated with them.

- a) Craft activities: unchanging technology, manual-artistic skills unrelated to formal schooling, e.g. carving, basket work.
- b) Simple consumer goods: low skill, repetitive process, identical product, e.g. paraffin lamps from tin cans.
- c) Services: managerial skills from the very simple to the complex, e.g. hawking, food stalls, money lending.
- d) More sophisticated consumer goods: manual, trade skills, e.g. carpentry, welding.
- e) Workshop production: high level of manual skill e.g. machining intermediate and simple capital goods.

1.18 Each of these categories of activities requires different levels of skills and abilities for both the wage earner/apprentice and the self employed/employer. Each also faces different demand conditions and possibilities of market expansion. For (a), (b) and much of (c), possibilities of dynamic growth involving increases in labor productivity are slight and additional numbers of those participating often simply lead

to smaller market shares. It is those enterprises in categories (d) and (e) which are likely to be more capable of finding or creating new markets, competing directly with formal sector enterprises or increasing their involvement with the formal sector through sub-contracting the production of intermediate products.

1.19 Returning to Schultz's distinction between productive and allocative efficiency, education may affect informal sector participants' earnings by:

- i) Increasing labour productivity - productive efficiency.
 - ii)
 - ia) Positively influencing the capacity to obtain credit or generate savings leading to capital accumulation.
 - iib) Increasing entrepreneurial efficiency.
- } allocative efficiency

Each of these is discussed below.

1.20 (i) Education may raise the labor productivity of all types of informal sector workers through at least three ways:

- a) The direct teaching of a skill which can be used to more effectively perform a particular task. The opportunity to use such a skill is likely to be greater in those activities which are open ended and not highly structured i.e. activities a, b and c.
- b) The ability learned in school to problem solve, be adaptable, think in terms of alternatives and so on, in relation to the performance of a task. This ability is applicable to employees/apprentices as well as the self employed since the essence of many informal tasks is adaptation, particularly in activities a, b and c.
- c) The faster learning of skills as a result of the discipline and experience of schooling.

1.21 (iia) The ability to raise credit or accumulate savings is a key factor in increasing productivity in informal sector activities, creating new markets and competing more effectively with the formal sector. Credit may be raised from relatives and friends, informal sector money lenders, government agencies, co-operatives, savings and loans societies, commercial banks and so on. Savings may be accumulated from periods spent working in the formal sector. It may be expected that for institutional loans, there will be a greater willingness on the part of the institutions to lend to people with more education, other things being equal. Similarly, there would appear to be a greater likelihood that periods of formal sector employment are achieved by the more schooled with a consequent increased probability that they are able to accumulate savings which can then be used to finance informal sector activities. Both of these suppositions can be investigated by the surveys.

1.22 (iib) The use which is then made of capital and other inputs is an important aspect of entrepreneurial efficiency - or, in Schultz's terminology, allocative efficiency. The advantages stemming directly from literacy for entrepreneurial activity are obvious - book keeping, ordering, etc. More important, however, are the advantages it may allow in being able to keep up with changes in the economic environment. Important aspects of entrepreneurial efficiency include the ability to re-allocate factors as a result of changes in economic circumstances and an increased knowledge of relative prices, perception of the potential range of technology and potential markets.

1.23 These ways in which education may, potentially, affect the productivity of those working in the informal sector will be investigated

by a number of approaches. At this stage of project conceptualization, the approaches center around standard earnings functions, the more complex use of path analysis and a disaggregation of education effects, and production functions. These are each discussed in detail below.

a) Earnings Functions

1.24 The survey will yield information on the incomes derived from three types of activity:

- (i) employment by an enterprise outside the household
- (ii) self-employment (working alone)
- (iii) employment in household enterprises.

In many cases the incomes reported for (iii) will not be apportionable among household members as a reward to their labor since total value added will partly reflect returns to non-human assets, and the share-out among household members (if observable) may reflect kinship loyalties as much as their respective productivities. For (ii), reported income will also sometimes contain a significant capital component. Only for (i) can all income be attributed to labor services.

1.25 We will assume that an hour's labor earnings can be written as a function of the individual's education and training (E), other individual characteristics such as sex, experience, and race/ethnicity (I) and relevant family characteristics such as father's education and socio-economic background (F). The family background variables are included as proxies for pre-schooling ability and a vector of learning influences at home such as parental encouragement, and the presence of printed materials and communications media. Thus we can write for the i th individual,

$$W_i = W(\underline{E}_i, \underline{I}_i, \underline{F}_i)$$

1.26 The simplest analysis is to estimate this equation in a conventional log-linear form across hourly wage income earners (type i). If E_i is specified as a set of suitably defined education and training dummies then the corresponding coefficients reflect the proportionate differences in the hourly wage between the education and/or training groups in question and the base group after controlling for other independent determinants of wages. This will therefore provide estimates of the wage differences associated with different levels and types of education and training.

1.27 Many informal sector participants will earn their main source of income not through wage employment but through self employment in situations in which they are the only workers (type ii). Two approaches can be adopted here. The first, and simplest, is to restrict the analysis solely to individuals engaged in activities within which capital assets other than inventories are non-existent or insignificant.

1.28 The second, and more difficult, approach is to disentangle labor income in those activities in which physical capital is a relevant input. ^{5/} This can be done, in principle, by subtracting imputed capital costs from value added. Imputed capital costs are calculated by multiplying the replacement value of assets by an appropriate borrowing or lending rate and adding depreciation per period. The marginal product associated with an additional hour of work is then estimated by dividing labor income by hours worked. Given the number and strength of the

^{5/} While Mazumdar (1981), Souza and Tokman (1978) and Chiswick (1977) have applied earnings functions to the self employed, in no case has a detailed adjustment for capital been made.

assumptions involved, this approach is clearly susceptible to error from various sources and possible biases. However, an earnings function can be fitted to the data obtained for all self employed individuals with this method and the results compared with those for the restricted sample of self employed discussed above.

1.29 Another issue to be focussed on is whether individuals of given characteristics have similar earnings in different activities. If they do then it is appropriate to estimate the returns to education in a straightforward way on the basis of average differences in earnings by educational level. If, however, there are certain barriers to employment such that earnings are not equalized for similar individuals then the returns to education depend upon the probabilities of a new school leaver finding work in the different activities, and how those probabilities are affected by education.

1.30 The most general way to test this is to re-specify the earnings function as,

$$W_{ij} = W(\underline{E}_i, \underline{I}_i, \underline{F}_i, \underline{d}_j, \underline{E}_i, \underline{d}_j, \underline{I}_i \underline{d}_j, \underline{F}_i \underline{d}_j) \quad (2)$$

where \underline{d}_j is a set of dummy variables and $\underline{E}_i \underline{d}_j$, $\underline{I}_i \underline{d}_j$, etc. are sets of interaction terms between \underline{d}_j and other variables. In the simplest case, \underline{d}_j would be an employment status dummy i.e., wage-employment/self-employment, but it would be more interesting to extend the number of dummies to differentiate between different industries and occupations within the informal sector. The coefficients for \underline{d}_j reflect differences in the earnings of the base group across activities while those on the interaction terms pick up the differences in the differentials by activity associated with the characteristics in question. More restricted forms of the

equation will also be used, e.g., with I_{idj} and F_{idj} omitted. The overall hypothesis that different activities have identical earnings functions can be tested by fitting equation 2 to separate sub samples and then applying Chow tests.

1.31 Variations in earnings for similar individuals located in activities at different ends of the formal-informal sector continuum will also be tested for. Any divergence in earnings for individuals with similar characteristics is in itself an indication of the strength of the barriers between the sectors. Formal sector earnings may reflect institutionally set salary scales and the effects of collective bargaining while in the informal sector, wages and the labor component of self-employment incomes are determined competitively. If d_j is replaced in equation 2 by a single formal/informal sector dummy, then an earnings function analysis can pinpoint both average sectoral earnings differences and sectoral differences associated with education and other characteristics.

b) The Nature of the Observed Link Between Education and Earnings

1.32 Why does education or training raise individual earnings? If we knew the answer to this question it might be possible to reorganize educational curricula and training programmes so as to improve their performance in this respect. As part of the surveys, short tests of both cognitive ability COG, (e.g., reading comprehension, reasoning) and attitudinal modernity, MOD, will be administered to economically active household members. These can be used to decompose the effects of education on earnings.

1.33 An illustration of the general approach can be given with the aid of the following simple recursive model (subscripts and random error terms are omitted for convenience).

$$E = d_1 + d_2 \underline{I} + d_3 \underline{F} \quad (4)$$

$$\text{MOD} = c_1 + c_2 E + c_3 \underline{I} + c_4 \underline{F} \quad (5)$$

$$\text{COG} = b_1 + b_2 E + b_3 \underline{I} + b_4 \underline{F} \quad (6)$$

$$\log W = a_1 + a_2 \text{COG} + a_3 \text{MOD} + a_4 E + a_5 \underline{I} + a_6 \underline{F} \quad (7)$$

Although in practice education dummies will be mostly used, these are collapsed here for convenience into a single variable, E, defined as years of education. Working through the model, education is determined in (4) by certain personal characteristics (age and sex) and family characteristics. Along with education the latter also determines MOD and COG in (5) and (6). Finally, the earnings function is re-specified in (7) with MOD and COG added, E retained to pick up education effects not reflected in MOD or COG and the \underline{I} and \underline{F} vectors retained for the same reason.

1.34 Estimation of equations (5) and (7) will allow us to divide the overall effect of education on earnings into three components: the effect of raising COG and hence log W, the effect of raising MOD and hence log W, and finally the direct effect of education on log W after controlling for COG and MOD. In terms of the model we can represent this as:

$$\text{Total effect} = a_4 + a_2 \cdot b_2 + a_3 \cdot c_2$$

1.35 Path analysis can also be used to examine the contribution of the above three components to the bivariate correlation between log W and E. This general approach can be extended much further. If one now brings in equation (4), it is possible to further decompose the overall effects of individual and family characteristics on earnings. (See Figure 1.1) Individual characteristics include a pre-school ability measure, or this could be used as an intervening variable between family background and education.

1.36 A particularly interesting extension will be to compare results when the analysis is applied separately to the samples of formal and informal sector workers. This will give some useful comparative insights if particular levels and types of education or training have different impacts on earnings in the two sectors.

c) Direct Estimates of the Effects of Education and Training

1.37 As described briefly above, one alternative approach to measuring the effect of education's productivity is via the use of production function analysis. In terms of the earlier classification, the analysis can be applied to the activities of one self-employed worker (type ii) or multiple workers engaged in a common activity (type iii). Two variants of the approach can be explored. The first treats labor in different education or skill categories as separate factors of production i.e.,

$$Q = f(K, L_1, L_2 \dots L_n)$$

where L_1 is labor input of the 1th type, while the second argues that the education of the head of household is what matters and affects the enterprise by improving the technical efficiency of the establishment i.e.,

$$Q = A(\underline{E}) f(K, L)$$

where A is a technical efficiency parameter, \underline{E} is a set of education and

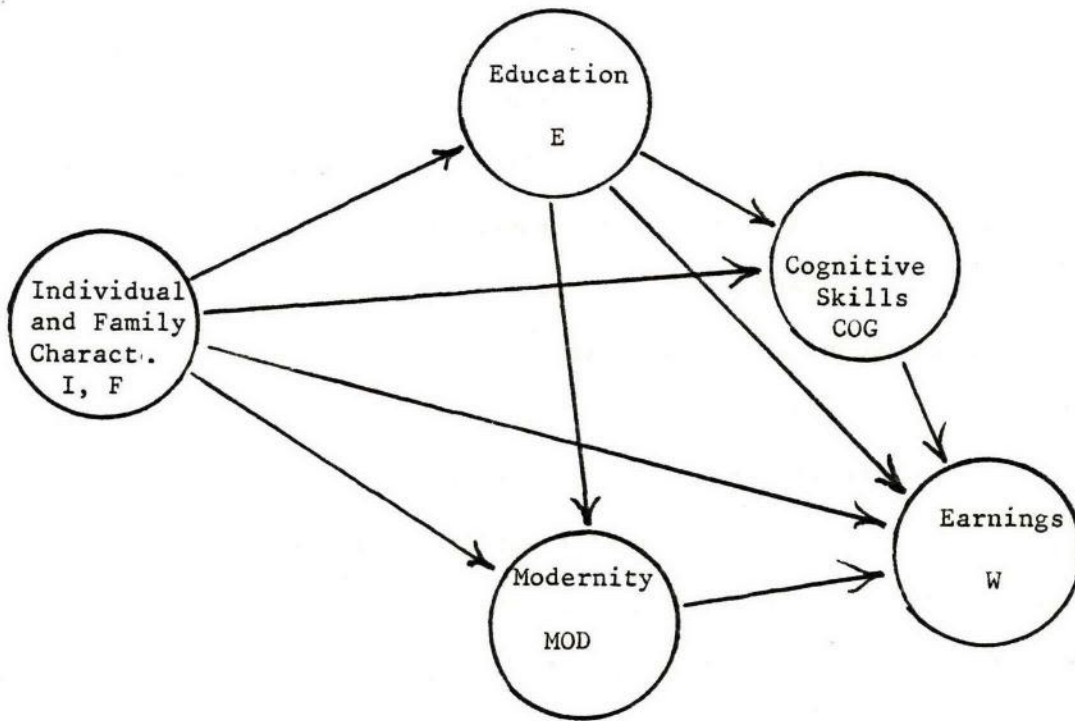


Figure 1.1. A path model of the effect of education on earnings

training dummies as before and L is total undifferentiated labor input. If a Cobb-Douglas production function is used the functions can be estimated in logarithmic form by ordinary least squares and if more complex functions such as a CES are used then non-linear techniques can be applied.

1.38 The effect of education on allocative efficiency has been investigated in recent studies of farm behavior by employing a profit function derived from a Cobb-Douglas framework. The latter expresses profit (revenue less variable costs) as a function of a parameter reflecting both technical and allocative efficiency levels, fixed factor quantities and variable input prices. This is an excellent framework in which to explore the effects of farmer education given that land can plausibly be treated as a fixed factor and other factor prices will often vary between regions. In the urban informal sector context, however, the framework does not appear very promising given that it is not obvious that household enterprises employ fixed factors except perhaps for the workshop size in manufacturing activities. Also, given that the surveys will be carried out in only one city, we are unlikely to observe much variation in input prices.

1.39 One possible alternative is to examine whether there is any relationship between the educational qualifications of the household members and the unit costs of the enterprise. The latter can be calculated by using the estimated earnings functions (for informal sector wages only) to impute the wage costs of household workers and then adding capital, inventory and intermediate input costs. Capital and inventory holding costs can be calculated using the method discussed earlier. This only permits us, however, to examine a modified version of the allocative

efficiency concept as success in attempted cost minimization is being investigated rather than success in profit maximization.

2) Labor Market Behaviour

1.40 The second major research question focusses on the effect which education and training has on decisions with respect to participation and behaviour in the labor market. This deals, then, with some of the complex issues of labor supply and allocation. There are two stages of decision-making on which to concentrate. The first relates to decisions regarding the acquisition of education and the second to the choice of economic sector in which individuals with different amounts of education hope to participate and the actions taken to achieve this.

1.41 Household decision models view the household as an economic unit maximizing a single utility function which incorporates the preferences of all its members. In these models it is considerations of the household unit, rather than the individual, which are paramount. As such, they go beyond the hypothesis that an individual's decision may be affected by household characteristics. In the context of this research proposal, decisions relating to an individual, but made by the household, enter at two stages. The first centers on the amount of schooling demanded for the family as a whole, or for an individual child; the second relates to the behaviour of the school leaver in approaching the labor market. The two are shown schematically in Figure 1.2. Lying behind each 'household decision' are sets of external economic factors and household characteristics.

1.42 Factors affecting decision point (i) i.e. the household demand for schooling, have been discussed by Birdsall and Cochrane (1982). These are,

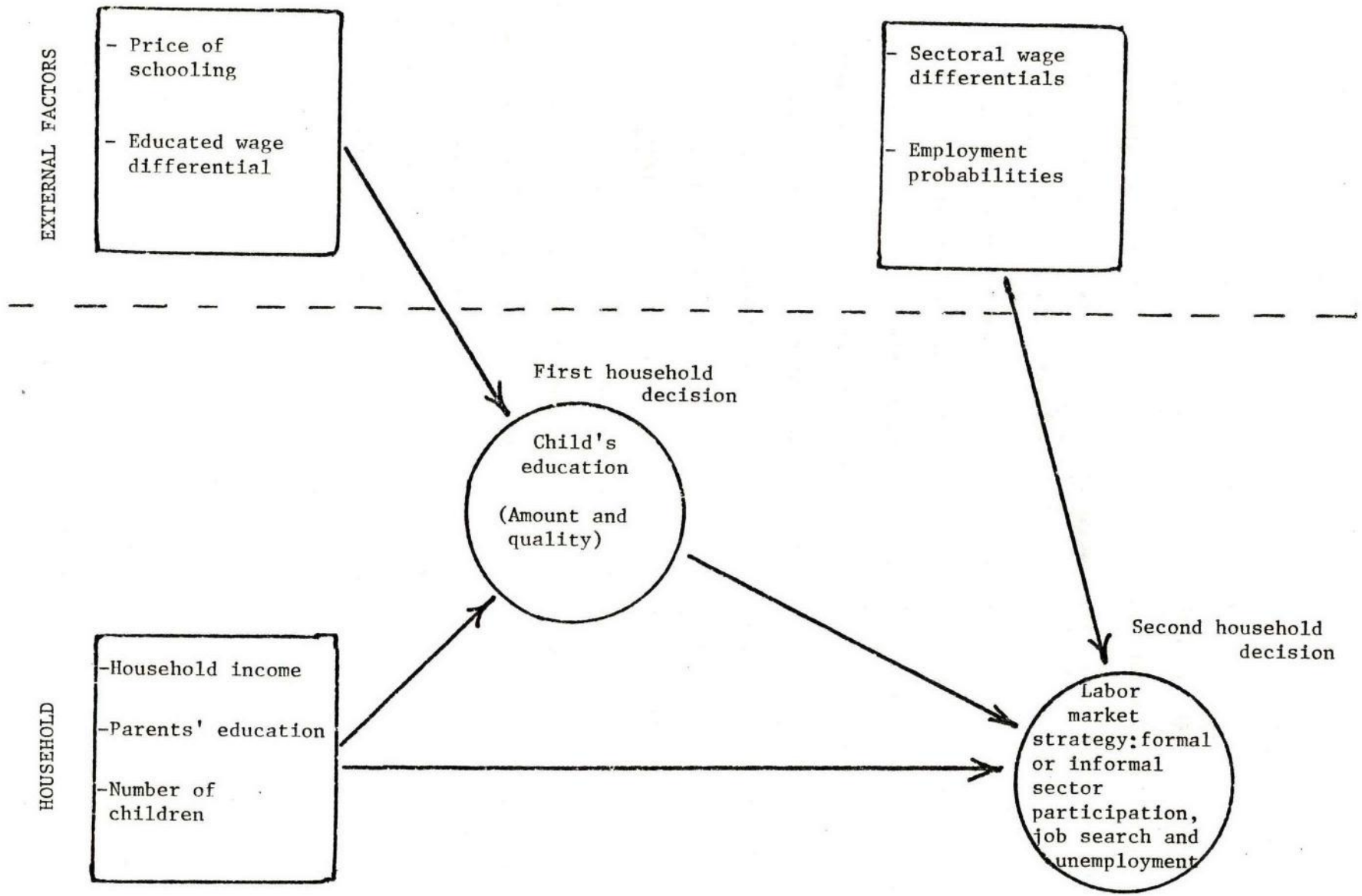


Figure 1.2 Household Decision Model: Demand for Education and Labor Market Behaviour

the price of schooling P_s , other prices P_x , the wages of the husband, wife and children in employment W_n , W_w , W_c , other household income V , and taste for education T (proxied by parental education). To these may be added the wage differential associated with the level of schooling in question and the number of non-earning children. The household demand for schooling level s , for an individual child is then:

$$D_{si} = f(P_s, P_x, W_n, W_w, W_c, V, T, C)$$

1.43 Several pieces of descriptive research (referred to in Section D below) have shown that the first few years of employment are often associated with shifts by individuals between types of employment status. In this proposal, therefore, we are also interested in the household and individual decisionmaking processes whereby school leavers approach the labor market and make choices between unemployment and job search, part time employment in the informal sector and job search, full time employment in the informal sector, and employment in the formal sector. Labor market strategy adopted by the household for the 'educated' family member again depends on external economic factors mediated via the particular economic circumstances of the household. Those hypothesized as influential are the income of the family which may be used to finance job search while the individual is only part-time employed, or unemployed, and the sector of employment of the parents and employed children which may influence attitudes and contacts. This part of the project will link up to work on school leaver tracer studies which is already being conducted within the Education Department.

1.44 A new labor market entrant who aspires to but cannot gain immediate entry to the formal sector has in principle a choice of two strategies: to

remain totally unemployed or, in the absence of barriers to entry, to participate to some degree in the informal sector thereby reducing the probability of finding a formal sector job in a given period (Fields 1975, Pinera and Selowsky 1979). If the latter strategy is adopted, a choice of the number of hours of intended search must be made (search intensity).

The primary purpose of this part of the proposed project will be to:

- a) examine whether the informal sector is used as a means of financing job search,
- b) measure search intensity and experience among informal sector participants and the unemployed,
- c) estimate the effect of education on unemployment incidence and search intensity.

1.45 Obviously much of the research will be based on descriptive information obtained from the surveys. For example, search activity among informal sector workers will be directly observed and cross-tabulated with education and other characteristics. Similarly, unemployment rates will be estimated among individuals classified by a number of characteristics including the participating sector of other household members and education. The more technical part of the analysis will, however, focus on two interrelated problems: separating out the effects of education,

training and household characteristics on the incidence and duration of open unemployment and on the search intensity among those participating in the informal sector. Clearly, in the absence of any barrier to entry in the informal sector one can provide an integrated analysis in which open unemployment is simply a special case in which the individual chooses the upper limit of search intensity. However, given that such barriers may exist it is useful to examine the determinants of the two decisions separately as well as together.

a) The General Case

1.46 A complete analysis of the individual's optimal search path over time would be rather complicated as this needs to be integrated with the choice of an optimal consumption path given an initial asset endowment. For present purposes it is, however, sufficient to assume a static present value of income maximization model in which the individual only makes decisions one period at a time. Suppose the i^{th} individual is faced with an informal sector wage T_i and an institutionally set formal wage W_i and a probability of a formal sector offer that depends upon the number of hours searched per day. ^{6/} The individual will then search more intensively: the greater the difference between W_i and T_i , the greater the probability of success for any given number of hours searched, the less the tendency for diminishing returns to hours searched to occur in terms of the job finding probability and the easier it is for the individual to finance search by means other than informal sector participation. The first two

^{6/} In practice the individual will face a distribution of formal sector wage offers but we will assume for the moment that this dispersion is small and can be ignored.

of these are determined by the arguments of the earnings function, the third is essentially technological while the last is determined by family characteristics.

1.47 For each economically active individual not working in the formal sector we will know the number of hours devoted to search in the previous week (S). The empirical model is then:

$$S_i = S(\underline{E}_i, \underline{I}_i, \underline{F}_i) \quad (8)$$

where \underline{E} , \underline{I} and \underline{F} are defined as before.

1.48 There are two issues of particular interest here, both of which go beyond the individual and can be placed in the context of household decisionmaking. The first is whether search intensity is positively related to education and training and, if so, to what extent this is because of higher returns to search for the more educated arising from a wider variation of earnings facing them or because of family background variables which affect the cost of search. The second is whether it matters if the individual's family are informal or formal sector participants. This can be investigated by introducing one or more appropriate dummy variables. These analyses will be conducted with equation (8) applied to all economically active individuals (including the unemployed) who do not work in the formal sector.

1.49 These issues can be described graphically.

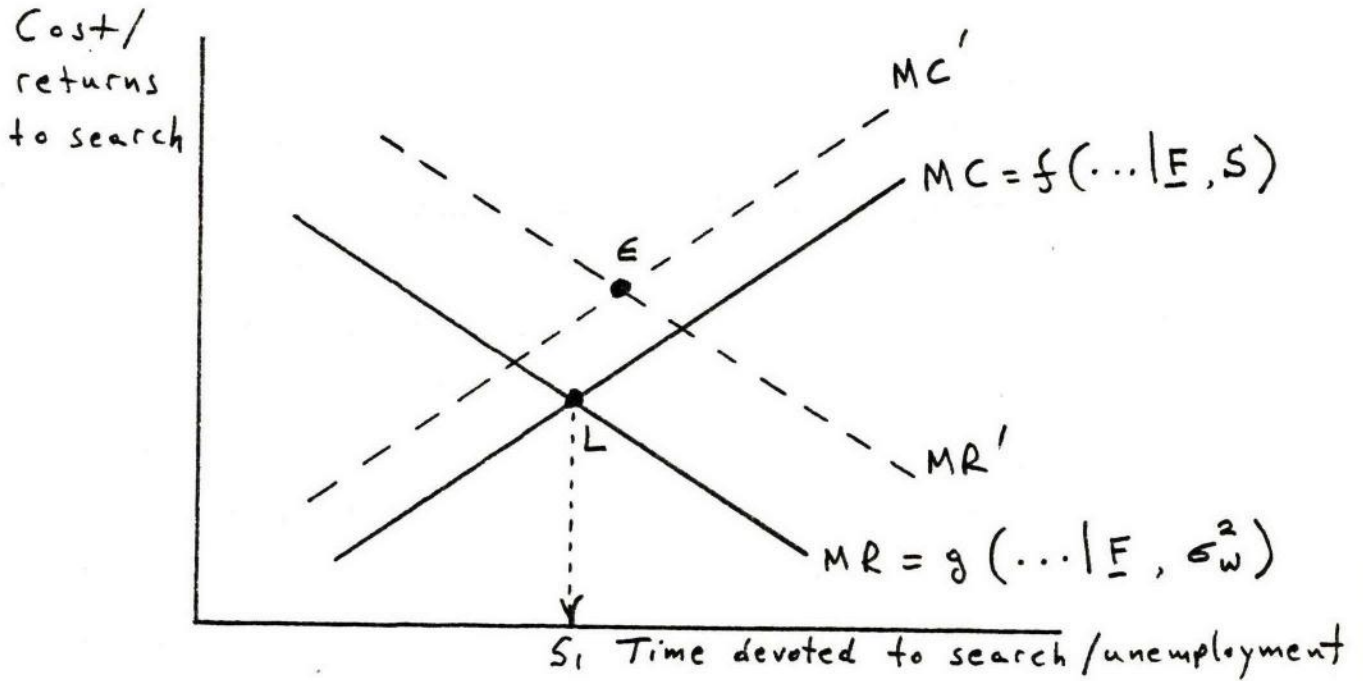


Figure 1.3 Education in a job search model

In figure 1.3 the thick and dotted lines denote the marginal cost and revenue curves of job search for individuals with primary and secondary schooling respectively. The marginal cost curve is drawn upward sloping to reflect that the financing cost of job search increases over time while the downward slope of the marginal revenue curve signifies diminishing returns to search. For the primary school leaver, the optimum search time is S_1 . For the secondary school leaver, both cost and revenue curves are higher because of the increased opportunity costs of search (foregone earnings) and the greater variation in earnings levels facing individuals with greater amounts of education. Whether the equilibrium search time for

secondary school graduates is longer than for primary school leavers or shorter, is an empirical question and depends on the slopes and shifts of the curves. Depending on the way in which search is financed, the individual or the household will be at the center of analysis.

b) The Incidence and Duration of Unemployment

1.50 This is a special version of the case above in which the individual is treated as choosing between open unemployment and informal sector participation at some fixed intensity. The analysis is then similar to that above except that an unemployment dummy UNEMP for non formal sector participants is first defined which yields a similar equation:

$$\text{UNEMP} = U(\underline{E}, \underline{I}, \underline{F}) \quad (9)$$

Also, an effort will be made to define a more continuous employment variable among those who reported variation in the time budget question.

1.51 The observed number of unemployed depends, in a steady state, upon the number of individuals entering unemployment per period and their average completed duration of unemployment. In less developed countries a disproportionate number of the unemployed are relatively young and presumably many of them are new labor market entrants. Given that the inflow among young people is essentially determined by the age distribution and the out-turn of the educational system, the incidence of unemployment among young people is largely determined by their completed duration. An equation similar to those above can therefore be estimated by TOBIT analysis with completed unemployment duration DURUNEM as the dependent variable applied to all young people under (say) 30 years of age who have either never experienced open unemployment or who have completed an unemployment spell.

c) Search Intensity

1.52 Finally one can restrict the search intensity analysis only to those who are currently observed as participants in the informal sector. This is valid if there are significant barriers to entry to the informal sector such that some individuals have the possibility of working in it and others do not.

3. Dependent and Independent Variables

1.53 A summary of the above discussed operational variables to be measured in this project is as follows:

(a) Dependent Variables

- W hourly wage or labor income as described above
- COG continuous cognitive measure, i.e. performance in tests to be developed by the local research team. (Also becoming an independent variable in the recursive model).
- MOD modernity of attitudes measure: likewise to be developed by the local research team (For examples, see Annex 2).
- Q_{ij} output of the j^{th} activity in the i^{th} household (Self-employed and household enterprises only).
- C_{ij} total production costs of j^{th} activity in the i^{th} household (Self-employed and household enterprises only).
- S time (hours) per week devoted to search activities.
- DURUNEM length of completed spell of unemployment.

(b) Independent Variables

1.54 These may be subdivided into four groups: education (formal and training), individual, background and other.

a) Education

- E a set of 0 - 1 dummy variables indicating either years of schooling completed or qualifications.
- YS years of schooling: this can be used as an alternative to E in some equations.

- STYPE school type, e.g. private or public.
- SQUAL a vector of school quality indicators.
- SCURR type of school curriculum followed, e.g. general vocational.
- TR a set of 0 - 1 dummy variables indicating different levels and types of training. In the discussion above these are subsumed under E.

b) Individual

- SEX a 0 - 1 dummy variable indicating the sex of the individual.
- EXP total working experience.
- EXPEM time spent with present employer.
- AGE age.
- RACE a set of 0 - 1 dummy variables denoting different racial, ethnic or tribal groups.
- DSEC a set of 0 - 1 dummy variables denoting sector of work e.g. self-employment or wage employment, different activities etc. In the discussion above this was abbreviated to d.
- ABIL measure of 'raw' or non-school created ability. (For example, see Annex 2).
- MIGR a 0 - 1 dummy variable indicating the person is a migrant to the present residence.
- ORIGIN geographic origin of migrant.
- RES length of residence of migrants in the present city.

c) Background

i) Earnings Functions

- FATHED Education of father in years.
- MOTHED Education of mother in years.
- FATHOCC Father's occupation: a set of 0 - 1 dummy variables.
- MOTHOCC Mother's occupation: a set of 0 - 1 dummy variables.

- FATHSEC Father's sector of employment.
- MOTHSEC Mother's sector of employment.

ii) Search and Unemployment

FATHED and FATHOCC as above plus the following:

- INC Household income per adult equivalent member.
- FATHINC Father's income (an alternative to INC)
- DEPENDS Number of dependents in household
- HINF 0 - 1 dummy denoting household members in the informal sector
- FSELF Father self-employed (an alternative to HINF).

d) Other (analysis of household enterprises only)

- K value of assets used in activity.
- L_i labor time of i^{th} type used in activity.

(c) Sampling

1.55 Since the main concern of the research focusses on the effects of education in labor markets at the competitive end of the continuum, i.e. the informal sector, this immediately delineates the concentration of the sample. In addition, concern is more with the recent output of the school system, say those aged 30 or under. Putting these restrictions together, the target area of the investigation can be identified as the intersection of the three circles in Figure 1.4. Of course, a control group of non-educated engaged in the same sector, will also be included.

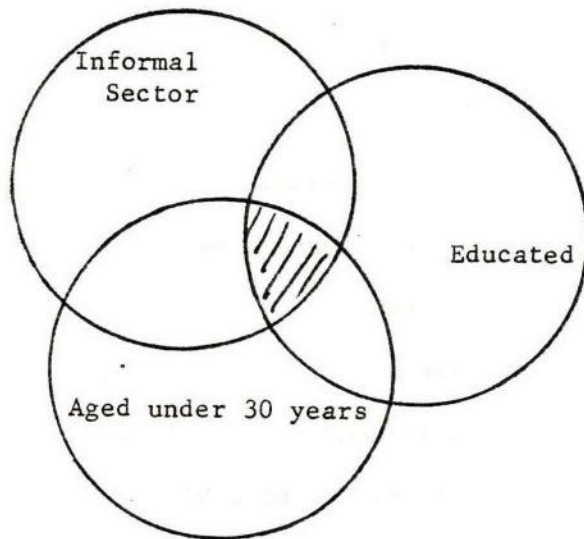


Figure 1.4. The target group for the investigation (shaded area).

1.56 In order to arrive at such an intersection it is necessary to sample individuals in household units in areas which are a priori known to contain a large proportion of the target group. (A basic questionnaire is in Annex 1). Obviously this approach requires some simplifying assumptions in order to be workable. For example, while average earnings in the informal sector appear to be universally inferior to those of the formal sector, it is not entirely justifiable to construct a sample of

urban poor in the intent of finding a larger concentration of individuals in the informal sector. Obviously, the "urban poor" and the "informal sector" are not coterminous; the poor and the better off exist in both sectors.

1.57 However, concentrating the sample in areas that are relatively poor, contain relatively more recent migrants, fewer schools and large-scale production activities, should increase the probability of capturing the full range of economic activity in this sector. Conversely, it runs the risk of not adequately capturing the experiences of those who have found work in the formal sector. For this reason we do not wish to narrow the criteria too closely in our sample design. Definitions in this sector are imprecise. And we will attempt to avoid introducing our own biases in the form of strict definitions in a field that has achieved little consensus. By choosing a household survey rather than a survey of establishments, data will inevitably be drawn from a universe larger than the informal sector itself (but certainly containing it). The essential advantages of this approach are that it leaves open the possibility of analyzing the data at a more disaggregated level, it provides for the definition of the informal sector in empirical terms as wide or narrow as we wish, and it permits us the economy of utilizing extant sampling frames.

1.58 Although it would be useful to survey the urban areas as whole of each country, it is unlikely to be practical given the escalation in costs involved. We therefore propose in our selected country case (described in the next section) to concentrate on the capital city Lima, (a sample of 6,000 households.) However, when the research extends to Indonesia in a later phase, we will be able to include a cross-section of both rural and urban areas through use of existing household survey

frameworks, (see Section C below describing research sites).

1.59 The main surveys will be preceded by a short but indepth pilot. Apart from testing the applicability of the questionnaire this will also be used to obtain vital local information regarding fixed assets and intermediate inputs used by the main activities.

C. Country Case Studies

1.60 Five countries have been identified as potential research sites for this project: Ivory Coast, Upper Volta, Peru, Indonesia and China. The criteria used for identifying these countries have been a combination of the following:

- a) importance of the country in terms of Bank lending for education,
- b) willingness of the government to support the research project,
- c) available previous work on the informal sector as a basis for rigorous sampling,
- d) existing local institutions identified for research collaboration,
- e) preparatory work already done by EDC towards the inclusion of a particular country.

1.61 Missions have already visited Ivory Coast, Upper Volta, Peru and China in preparation for this project. Government support has been secured in each of these countries and local research institutions have been identified and contacted. Further missions are planned to China and Indonesia in 1983 to negotiate with the governments and local institutions. A recent visit by a Chinese delegation to the Bank expressed a strong interest in participating in this study. The study was also

endorsed during Mr. Hultin's visit to Beijing in January 1983.

1.62 Evidently, because of the cost inherent in household surveys and the fact that this kind of research is attempted for the first time, this phase of the proposal refers only to one country, Peru. The choice of Peru among the five candidates is solely due to the fact that the research team was able to do more preparatory work there relative to the other countries, aided by Research Committee discretionary funds (RPO 672-98). It is our hope that as experience and preparation proceeds with the other countries that have shown interest in the proposal they will be gradually phased in. It is also hoped, that the proposed research project on the consequences of educational expansion will also use Peru as a country case so that we may be able to study the effect of education across the entire urban sector. In order to put the informal sector issue in perspective, some information is given below for all the countries which have been considered for this research project including those that do not make part of the research proposal in hand.

1. Ivory Coast

1.63 The Ivory Coast is included among the countries to be eventually investigated for a number of reasons. First of all it has a sizeable and rapidly growing informal sector within which the labor force is distributed over a number of activities. Table 1.1 below shows the most recent estimate of the overall distribution of the labor force.

Table 1.1 Ivory Coast. Employment by Economic Activity and Type of Sector, 1980

<u>Economic Activity</u>	<u>Type of Sector</u>		<u>Total</u>
	<u>Modern</u>	<u>Traditional</u>	
Agriculture	71,000	2,000,000	2,071,000
Non Agriculture	357,000	430,000	787,000
Total	428,000	2,430,000	2,858,000

Source: Based on information supplied by the Office National de Formation Professionnelle.

We can imply from this that the urban informal sector in the country as a whole has an importance in terms of employment equal to that of the formal sector.

1.64 More detailed information is known about the labor force in Abidjan resulting from ILO survey work in the early 1970s' (Joshi, Lubell and Mouly, 1974). It was estimated that in 1970, around 47,000 individuals in this city worked in the informal sector out of a total of 153,000 and that this sector's share had risen from 28 percent in 1965 to 31 percent in 1970. Table 1.2 presents the breakdown of informal sector employment in Abidjan by sector and labor force status.

Table 1.2 Percentage Distribution of Informal Sector Employment in Abidjan by Sector and Labor Force Status, 1970

Economic Activity	Wage and Salary Earners	Self-Employed and Unpaid Household Workers	Total
Agriculture, Forestry, Fishing and Hunting	3.2	3.2	6.4
Manufacturing, Handicrafts, Power and Construction	14.4	17.6	32.0
Trade and Services	28.7	33.0	61.7
All Sectors	<u>46.3</u>	<u>53.8</u>	<u>100.0</u>
Number (000's)	21.76	25.25	47.0

Source: Joshi, Lubell and Mouly (1974), Table 2.5, page 2-17.

In general the urban informal sector is less dominated by self-employed petty traders than is the case in most other developing countries:

industrial activities employ about a third of the informal sector labor force and almost a half earn wages or salaries. This may be contrasted with the situation in, say, Jakarta where the great bulk of the informal sector is self-employed. Although the proportion of self-employed workers was roughly constant between 1965 and 1970, there appears to have been a shift away from informal services towards informal manufacturing: the share of services in informal employment falling from 65.5 percent in 1965 to 61.7 percent in 1970 while the share of manufacturing rose from 27.6 percent to 32.0 percent over the same period. Informal industry in Abidjan is spread over many activities among which textiles, wood products, vehicle repair and construction are particularly important.

1.65 There is very little information on differences in wage rates between the formal and informal sectors although one rough proxy is the ratio of value added per worker in the two sectors in the same industry. In 1970 this varied between 0.11 and 0.95 in different manufacturing industries and was 0.23 for manufacturing, handicrafts and construction as a whole.

1.66 Like many other developing countries the Ivory Coast has experienced very high rates of open unemployment in its urban areas. In 1970 it was estimated that out of a total urban labor force of 490,000 some 115,000 were economically active and without work resulting in an overall unemployment rate of 23.5 percent. For Abidjan alone, the corresponding rate was 20.0 percent. Such high rates guarantee that a random household survey will pick up plenty of data on unemployment and search. They also suggest that the informal sector may not be as accessible for unemployed workers as much theoretical literature suggests. (e.g., Fields, 1975).

1.67 A third reason for selecting the Ivory Coast is that there should be a reasonable distribution of educational attainment within the informal sector labor force. Although direct data on this is lacking, one may note that while the illiteracy rate among persons aged 15 years or older was 58.8 percent for the overall Ivory Coast population in 1980 (UNESCO, 1981), in recent years primary school enrolments have almost achieved universality.

1.68 Fourthly, there is at the moment a household survey being planned in the Ivory Coast and the Bank's Development Research Department is involved in this. Linking with and complementing this work could prove useful and result in both greater efficiency and economy.

2. Upper Volta

1.69 Very little evidence exists on the economic effects of education in Upper Volta. During a recent EDC mission, Psacharopoulos calculated rates of return on the basis of partial sets of earnings data from the public sector and a series of private sector interviews. Social rates of return calculated on the basis of 1982 data were between 15 and 20 percent. The nature of the data used for calculating these rates of return clearly points to the necessity for a coverage of education-relationships which goes well beyond the formal sector. In 1975, employment in this sector amounted to only 1.5 percent of the country's economically active population. The vast majority of, at least primary, school leavers do not enter the formal sector but are agricultural or informal sector workers, emigrants or are unemployed. At present nothing

is known about the economic performance of school graduates in Upper Volta's agricultural sector and despite an ILO study of the informal sector there is again no knowledge of the educational dimension. At the same time that the economic effects of schooling are unknown, there are plans to significantly expand primary enrollments over the next two decades.

1.70 Any consideration of the economic effects of education in Upper Volta require an acknowledgement of the importance of international migration, particularly to the Ivory Coast. It is estimated that 70,000 persons depart each year and according to the 1975 Census, the level of education is closely related to the decision to migrate. This resulting loss of educated people is not, however, regarded as totally negative. Recorded migrant remittances from abroad in 1981 amounted to nearly one-half of the country's official exports of goods and services. In addition it is estimated that perhaps a half of gross migrants return each year. To the extent those people have learned some skills in the foreign country, they contribute to the future development of the domestic economy.

1.71 There are, then, a number of good reasons for including Upper Volta in a study of the effect of education in the informal sector:

- (a) the ratio of formal sector employment to the total labor force is one of the smallest in the world,
- (b) there already exists some background work on the informal sector done by the ILO,
- (c) the country is one of the least researched in terms of education and employment,

- (d) the Bank has committed itself to a major emphasis on education in future lending,
- (e) by linking research on both the Ivory Coast and Upper Volta there is a chance of capturing the interesting effects of education on emigration and subsequent economic performance.

3. Peru

1.72 In recent years, the number of formal sector jobs has not kept pace with population increase in the urban centres of Peru. A result has been the growth of the informal sector especially in the 'pueblos juvenes'. Existing literature on this sector in Peru is mostly descriptive and anthropological (Osterling 1981, Scott MacEwen 1981, Wendorff 1979), though Webb (1977) made estimates of informal sector income for the early 1970's. The recent emphasis given to the private sector in general by the Government has widened the interest and in 1982 the Ministry of Labor, in collaboration with the ILO, launched a household - small enterprise survey of 1500 units.

1.73 Two types of questionnaires were used, one for the head of the enterprise and the other for employees. While, unfortunately, there was no education question in the latter, the educational level of workers can be found retrospectively by matching these survey results with those of the general household survey tape. This operation and the creation of a new merged tape is now underway, financed through the Bank's Research Committee's proposal-preparation funds. (RPO 672-98. See Annex 0). Two uses will be made of the merged tape:

- a) the information provided will permit the measuring of variances of the variables we are interested in for inclusion in the major study and will thus allow a more rigorous sampling,
- b) a first documentation of the relationship between education and income in the informal sector will be provided. Given the total absence of information on this front, even this small survey will be useful in getting some feel for the relationships involved.

1.74 An enlarged and more detailed survey of informal sector workers, using the criteria listed in 1.47 has recently been discussed with the Ministry of Labor. This involves two stages. First, a household survey would be conducted in Lima in those neighbourhoods expected to contain a large proportion of informal sector workers. This would collect information on age, education, employment history, occupation, sector and size of enterprise in which the individual works. The information can then be analyzed and a second, more detailed survey made of selected individuals and of enterprises in what appear to be the most important subsectors. A sample frame for the first stage is currently being prepared in Lima.

1.75 Siting part of the research project in Peru will also enable us to link with and complement a major BID-financed ECIEL research project on the role of education in rural areas (the countries involved are Peru, Brazil, Mexico and Paraguay). The specific objective of this study is an analysis of changes in productivity of small and medium sized farm units, as a result of changes in educational processes. Because of Bank interest in the results of this study, EDC is providing a small time input in monitoring its progress. Methodologically, our interest is in the contemplated use of path analysis in which the innovative function of education is treated as an intermediate variable: first, as dependent on schooling and family characteristics; second, as independent and a determinant of agricultural production.

1.76 Depending on its actual design and intent, the study will hopefully increase our knowledge of the role of education in rural

environments. This will augment the evidence we already have on farming from Jamison and Lau (1982) and to the extent that rural nonfarming activities are covered, it will be a useful adjunct to our own work.

1.77 For a research program investigating the relationship between education and informal sector activity, there are several reasons why Peru would be a useful site:

- a) because of the relatively large size of the sector in the economy. Although exact estimates do not exist, most put the proportion of urban informal sector employment in the total labor force in the range of 30 to 40 percent (Wendorff, 1980, p.3);
- b) because of existing previous work on household surveys by the Ministry of Labor, there exists a good basis for a probabilistic sampling frame;
- c) because it will link to and complement the above mentioned ECIEL project on the role of education in the rural sector of the economy,
- d) because the Government is very interested in the topic of the proposed research. The Minister of Labor has expressed his endorsement in writing and the Ministry of Education is eager to see the research carried out.

4. Indonesia

1.78 The Central Bureau of Statistics periodically mounts two types of household sample survey which are of direct relevance to this study. The SAKERNAS is a national sample survey of labor market conditions and the labor force in urban and rural areas. The SUSENAS is a national sample multipurpose household survey of socioeconomic conditions in urban and rural areas. The most recent survey in 1978 is available on tape in the Bank. The next SUSENAS survey will be conducted in 1984, which allows time for the Bank to request the addition of more questions on the

respondents' educational background and time to plan the cognitive skill testing of a sub-sample. In addition, in 1976-78 the Ministry of Education mounted a national sample tracer survey of primary, junior and senior secondary school leavers based on a sample of urban and rural schools.

1.79 Before the Jakarta Informal Sector Survey was conducted with ILO support in 1975, there were only very rudimentary estimates of the size and significance of the informal sector in that city. Sethuraman (1976) used 1971 Census data and a 1968 survey of establishments to estimate that slightly more than half a million persons, or approximately 40 percent of Jakarta's 1971 labor force, were engaged in informal sector activities. From the same data it was estimated that informal sector employment, as a percentage of total employment, varied considerably by branch of economic activity.

1.80 While the focus of the Survey was not on the relationship of education to skills, productivity or job search it does, nevertheless, constitute important ground work upon which it will be possible to profitably build. The sample was of enterprises, not individuals or households, and covered manufacturing, construction, transport, trade and services. From the Survey it is possible to make a rough estimate of the size of the informal sector in Jakarta. This can be done by extrapolating from the count of 14,028 heads of informal sector enterprises. According to the survey report (Moir, 1978) this procedure results in an estimate of over 560,000 persons. This is, of course, only heads of enterprises in the five activities listed above and excludes all other informal sector participants. The informal sector is thus seen as a major source of employment in Jakarta.

1.81 With respect to schooling, the Survey showed that 20 percent of the men and 50 percent of the women had no formal education. The informal sector participants had received fewer years of schooling than characterized the Jakarta labor force as a whole. Some had informal education in the form of learning job-related skills from neighbors, relatives or friends.

1.82 In addition to the basic assistance which the Jakarta Informal Sector Survey could provide to the research proposed, there is another reason for our desire to eventually include Indonesia as a research site. The 1980 Population Census (for which 5% use tapes are now available) included for the first time an employment status question which contains two self-employment categories. These are: (1) self-employment, and (2) self-employment assisted by family member/temporary help. Because of the existence of this question in the Census, it will be possible for us to take advantage of a very sophisticated sampling frame and to focus directly on individuals who have identified themselves in terms of self-employment. The director of the Bureau of Analysis and Development (Central Bureau of Statistics), is aware of this research proposal and has agreed to participate by making the census tapes and sampling frames available to us. The Population Council has also agreed to assist us in the survey design and the training of survey takers. The University of Indonesia's Faculty of Social Sciences has been contacted and is eager to supply graduate students as survey workers and to participate in the project as needed.

Other central contacts are the Ministry of Manpower (DG for Manpower Development) and the Ministry of Education and Culture (BP3K). Thus data availability in Indonesia allows preliminary analyses to begin early. In addition, the existence of periodic re-surveys allows an opportunity to enrich the data base by adding specially designed questions required for the study into an existing national sample framework.

5. China

1.83 China has been added to the list of potential research sites following the interest shown in joining the project by a Chinese delegation which visited the Bank in November 1982, led by Professor Yang Xin Heng of Nankai University. The city of Tianjing has been suggested as the survey site and the University of Nankai as the collaborating institution. Small scale, exploratory studies of young self-employed workers in Tianjing were made in 1981. Extensions of these could provide a very useful comparative case study for the other research sites in addition to increasing the knowledge of the precise relationships between education and the recent growth of youth unemployment (Colletta, 1982) and between education and work performance useful for Chinese educational policy.

1.84 An education mission to China in January 1983 discussed the possibilities of the proposed study with the central authorities and confirmed their interest in participating in the research project.

D. Relationship to Other Research

1.85 Over the last ten years or so a great deal of theoretical and empirical attention has been given to aspects of what has come to be widely termed the informal or unprotected sector in the urban areas of LDC's. Very little attention, however, has so far been given to the effect of formal schooling on workers in this sector.

1.86 Development models of the 1950's and early 1960's tended to view the economies of poor countries as dualistic with a large low-productivity subsistence agricultural sector and a small but growing high productivity urban industrial sector (Lewis 1958). As rural-urban migration increased it gradually became obvious that not all migrants were being employed in the wage earning 'modern' sector and that large numbers were engaged in activities generally described as trading and services. However, this whole sector tended to be generally ignored in the development literature and in government policy up to the end of the 1960s. Where it was recognized it was assessed in generally negative terms and assumed to be a purely temporary phenomenon which would disappear as the modern sector expanded.

1.87 Perhaps the first scholar to give systematic attention to such peripheral employment activities was Hart (1971) who coined the term "informal sector". From fieldwork in Ghana, Hart emphasised what he regarded as the positive role which this sector plays in providing both income generating activities and many essential city services. This was also the view of the highly influential International Labor Office study of Kenya published in 1972 (ILO, 1972). The report concluded that the

informal sector was capable of providing more jobs and growing faster than the formal sector and the recommendations were largely designed to reduce discrimination against it.

1.88 A large amount of the theoretical and empirical work which has focussed on the informal sector in the last decade has concentrated at the enterprise level and on questions of size, composition, relationships with other sectors and the potential for growth. Other work has attempted to define the profile and characteristics of informal sector workers.

1.89 Despite these efforts questions of the nature of skill acquisition and the effects of different training modes on informal sector workers have only in a few instances been tackled. One of the first scholars to survey the training background of small scale sector workers was Callaway in the 1960s in Western Nigeria (Callaway, 1964). What stood out in his research was the strength and extent of the apprenticeship system and the small numbers of people with formal schooling participating in that sector. By 1972, however, even in Northern Nigeria, an area of very low educational provision, Hinchliffe (1975) reported that 40 percent of employees/apprentices had had primary schooling.

1.90 Much of the most recent literature on skill acquisition and educational background of workers has come from studies initiated under the ILO's World Employment Programme. Some of these can be summarised quite briefly. The Nihan et. al. (1978a) study in Nouakchott, Mauritania showed that most training of informal sector workers occurs through apprenticeship with an entrepreneur in that same sector. They also found that employers trained within the informal sector ran their businesses at the same level of competence as those formerly apprenticed in the formal

sector. However, it is worth pointing out that the most successful group of entrepreneurs was the 5 percent or so who had attended courses at a vocational training institution.

1.91 In a related study by Ninan et. al. (1978b) of the informal sector in Lome, Togo apprenticeships within that sector were again shown to be the critical source of training. The same can be seen from Fowler's (1978) study of Freetown and Fapohunda's (1981) of Lagos. Outside of the ILO studies, King (1977) has also documented for Kenya the primacy of apprenticeship and on-the-job training in the direct formation of informal sector skills.

1.92 These studies tend to show low average levels of education for informal sector workers. However, what is required for a first analysis of the influence of education is a disaggregation by age group and also by activity. Electrical and mechanical repairers in their early 20's are likely to have a very different educational profile than 50 year old domestics. Arye (1976) shows, for instance, that in Kumasi, Ghana while only 13 percent of businessmen aged 46-50 years had had a middle school education, the percentage for the 20-25 years group was 80 percent. Hallak and Caillods (1981) point out another interesting feature from the above studies of Mauritania and Togo which is the educational superiority of employers compared to employees. This implies the possibility that formal education, while not being a provider of specific skills, in some way enables a transference to self employment. Why this may be so has not yet been researched.

1.93 While the large statistical surveys of the ILO have unearthed large amounts of data on the characteristics of informal sector workers there remains a large data gap on productivity and earnings differences and on the causes of these. Early studies such as Hinchliffe's (1975) of informal sector workers in Kano, Nigeria showed significant earnings differences between schooled and unschooled workers but no account was taken of individual variations other than schooling level. Activity of employment has been shown to be a major determinant of the effect of education on earnings in studies of San Salvador (PREALC 1978). The major attempt, so far, to fit earnings functions to informal sector workers has been made by Souza and Tokman (PREALC, 1978), again using data from San Salvador and also Santo Domingo. The conclusion was that while education 'explains' from 37 to 44 percent of the income variance of all workers, once the effects of employment status and size of establishment are controlled for, the effect of education is greatly reduced. Hallak and Cailods (1981) point out, however, that it was not possible in this analysis to isolate within the informal sector those variables which are the most important in explaining incomes variations.

1.94 The results of surveys relating education, form of apprenticeship and capital assets to measures of entrepreneurial success tend to suggest that while primary schooling may be closely associated with higher productivity and earnings, the amount of capital assets is even more so. However, since education and capital accumulation are also highly correlated there remains a case for supposing that in one way or another, education plays a role in influencing the effectiveness of entrepreneurial activity.

1.95 What the statistical profiles of the informal sector labor force tend to show about worker skills is that most have been learned through an apprenticeship system, mainly in the informal sector itself but also in the formal sector, and few have resulted from specific vocationally oriented formal education programmes. These findings, however, say virtually nothing about the effects of basic education. The educational profile of informal sector recruits is increasing rapidly and that increase is the result of large amounts of expenditure. It becomes more and more important therefore to understand the effects of this expenditure. So far very little research indeed has been directly related to the issue of the effects of formal schooling on the behavior and output of informal sector workers.

1.96 Several pieces of research have confirmed that in many cases workers shift between sectors during their lifetime. While some learn skills in the formal sector and perhaps raise some capital, both of which are then put to use within the informal sector, others use part time work in the informal sector as a means of funding the search for a formal sector job. The ways in which education influences these types of behavior have again, however, received relatively little research attention. That which exists is centered around the notion of job search.

1.97 Job search models were first introduced into the development literature by Harris and Todaro (1970) and covered just two sectors - rural and urban. The result was to shift the emphasis in analysing unemployment away from demand deficiencies towards 'excess' supply resulting from restrictions to entry. Fields (1975) introduced into the

basic model what he termed the 'murky' sector and argued that the same expectational factors operated within the two urban labor markets as between the rural-urban areas. One of his conclusions was that, given that employers prefer to hire better educated workers, the education of an additional worker lowers the number of urban jobs available to the uneducated by one but reduces the uneducated labor force by more than one as a result of the downward effect on the probability of getting a job, and thereby reduces unemployment.

1.98 More recently Pinera and Selowsky (1978) have developed a more complex model of job search concentrating solely on the decision whether to remain unemployed and 'search' for a formal sector job or enter the informal sector. They argue that in the context of unemployment, wage differences between the formal and informal sectors and no barriers to entry to the latter, the wages of informal sector workers are likely to be different from the true marginal product of an additional educated worker to the labor force. Finally, Fallon's (1983) work on unemployment and search in Delhi suggests strong relationships between unemployment and household characteristics, and search and educational level.

1.99 The refinement of these tentative hypotheses and their further testing is another area in which a major study of education's role in the informal sector is required.

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Household Information *

A. Site Identification		Code	B. Survey Information	
(1)	(2)	(3)	(1)	(2)
A. 1. Province		6/ / /	B. 1. Name of Survey Taker	
A. 2. Strata		8/ / /		
A. 3. Region		10/ / /	B.2. Date of Survey	
A. 4. Municipality		12/ / /	B.3. Signature of Survey Taker	
A. 5. Village		14/ /		
A. 6. Cluster Number			B.4. Name of Supervisor	
A. 7. Building Number			B.5. Date of Supervision	
A. 8. Household Number		15/ / / /	B.6. Date of Inspection (coding)	
A. 9. Number of Household Members		18/ / /		
A. 10. Number of Household Members over 10		20/ / /	B.7. Signature of Supervisor	
A. 11. Location or address:				

BASIC QUESTIONNAIRE

* This is a skeleton household questionnaire to be adapted to the research design of this project and the particular country circumstances in which it will be administered.

D. Sources of Household Income

Codes
 Wage 1
 Account 2
 Both 3

What are the sources of income of this household?
 (Place checkmarks in the appropriate boxes.)

Sources of Income	Wage Earner	Own Account	Wage and own account	
(1)	(2)	(3)	(4)	(5)
D. 1. Agriculture	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	22 <input type="checkbox"/>
D. 2. Industry/handicraft	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	23 <input type="checkbox"/>
D. 3. Sales	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	24 <input type="checkbox"/>
D. 4. Transportation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	25 <input type="checkbox"/>
D. 5. Services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	26 <input type="checkbox"/>
D. 6. Other work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	27 <input type="checkbox"/>
D. 7. Government	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	28 <input type="checkbox"/>
D. 8. Private pension & transfer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	29 <input type="checkbox"/>

D. 9. Of the sources of income listed in column 1, which is the main source of income? Go to

D. 10. Of the sources of income listed in column 1, in the case of an own account (self employed) worker, which source represents his main source of income?

[These will vary considerably from activity to activity and from country to country. The following is therefore only intended as a specimen outline]

For each activity

Production Account: Activity-----

Assets

	<u>Value</u>	(where <u>Quantity relevant</u>)	<u>Quantity</u>	<u>Age</u>	<u>Value</u>
Sales					To be separately listed
<u>plus</u>					
Own Consumption					
<u>less</u>					
Inventory of unsold output at beginning of period					
<u>plus</u>					
Inventory of unsold output at end of period	_____	_____			
= <u>Gross output</u>	_____	_____			
<u>less</u>					
Intermediate inputs (to be prelisted in each case)	_____	_____			
= <u>Value added</u>					
<u>less</u>					
<u>Gross wages paid</u>					
<u>less</u>					
Depreciation (to be imputed)	_____	_____			
= <u>Operating surplus</u>	_____	_____			

F. Identification of Household Member

F1. Name of household member:..... 1 / 1/3/
 F2. Serial number of household member..... 22 / / /
 F3. Marital Status: Single - 1
 Married - 2
 Widowed or divorced -3 24 / /

G. Activities During the Past Week

Can you tell me what you have been doing for the past week, beginning yesterday....(name of day), then the day before yesterday...., 3 days ago, and so on.

G ₁ Day	G ₂ Type of activity	G ₃ Em- ployed (at least 1 hour a day)	G ₄ Employ- ed but did not go to work	G ₅ Look- ing for work	G ₆ Attend- ing school	G ₇ Taking care of the home	G ₈ Other (retired, disabled, etc.)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	
Yesterday,.....	/ / ..hour(s)	/ /	/ /	/ /	/ /	/ /	/ /
Day before yesterday.....	/ / ..hour	/ /	/ /	/ /	/ /	/ /	/ /
3 days ago.....	/ / ..	/ /	/ /	/ /	/ /	/ /	/ /
4 days ago.....	/ / ..	/ /	/ /	/ /	/ /	/ /	/ /
5 days ago.....	/ / ..	/ /	/ /	/ /	/ /	/ /	/ /
6 days ago.....	/ / ..	/ /	/ /	/ /	/ /	/ /	/ /
7 days ago.....	/ / ..	/ /	/ /	/ /	/ /	/ /	/ /
(name of day)							
Total	/ / / / hour(s)	/ /	/ /	/ /	/ /	/ /	/ /
Card Column	25-27	28	29	30	31	32	

I

J

(Block H to be asked only if there are no entries in columns 2, 3 and 4).

H. Attending School/Taking care of the house.

H₁. Have you looked for work during the past 3 months?
 Yes / / No / / 33 / /

H₂. Why aren't you looking for work?
 1. Taking care of the house / /
 2. Attending school / /
 3. Health reason / / 34 / /
 4. Not prepared to go to work (retired, too old, etc.) / /

H₃. If a suitable job was available, would you accept it?
 Yes / / No / / 35 / /

J.B. Employment History

J.B.1. At what age did you start working?
If I3.1 or I3.4 are ticked then to JB3

J.B.2. Have you ever been employed by anyone outside your household?
If Yes then give details of past employment history

Employer	Industry	Occupation	Dates From To	Monthly Wage	Permanent or Temporary

J.C. Training

J.C.1. Have you ever received formal training or undertaken an apprenticeship?
If Yes then give details

From	To	Description	
<p>J.D. <u>Unemployment History</u></p> <p>J.D.1. Have you ever been unemployed? If <u>Yes</u> then give details:</p>			
Spell	From	To	Method of Finance
1			
2			
3			
4			
<p>J.E. <u>Migration History</u></p> <p>J.E.1. Have you always lived in (present town)? If <u>No</u> then please give details;</p>			
From	Date	Rural/Urban	

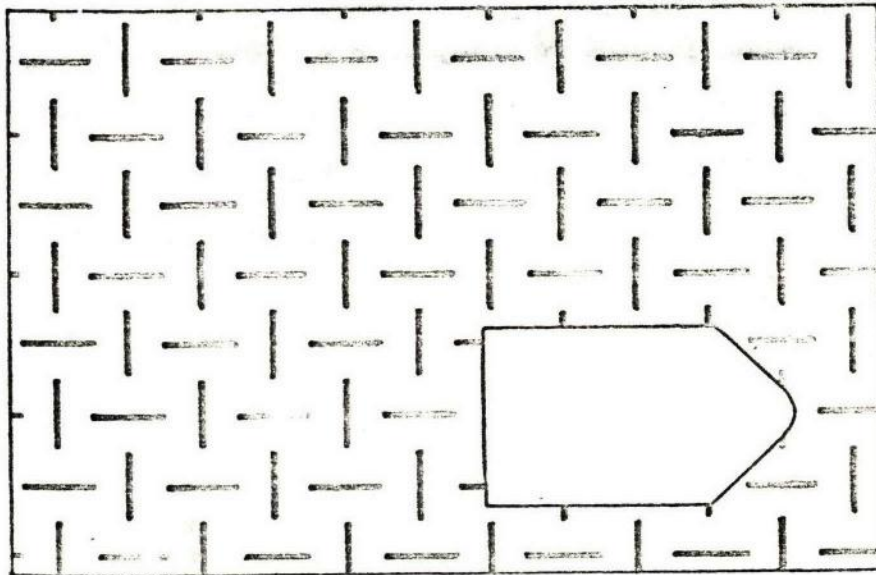
I. Employed		Card Column	J. Looking for Work		Card Column	
I 1. Where do you work and what kind of work is your employer engaged in? At.....Type of work.....	36	///	JA 1. How long have you been looking for work?months	64	///	
I 2. What position do you hold or what type of work do you do?.....	38	////	JA 2. Are you looking for full-time or part-time job? 1. Full-time <input type="checkbox"/> 2. Part-time <input type="checkbox"/>	66	<input type="checkbox"/>	
I 3. Job status: 1. Worker or government employee <input type="checkbox"/> 2. Businessman without employees <input type="checkbox"/> 3. Employed by relative without pay <input type="checkbox"/> 4. Social worker <input type="checkbox"/>	41	<input type="checkbox"/>	JA 3. From what source have you usually received income for your daily needs during this period? 1. Work 3. Family or friends 2. Sometimes work 4. Other	67	<input type="checkbox"/>	
I 4. How many hours did you work at this job during the past week?.....hours.	42	///	JA 4. Have you ever worked before? Yes <input type="checkbox"/> No <input type="checkbox"/>	68	<input type="checkbox"/>	
I 5. Is the job you held during the past week the same job you held during the last 3 months? Yes <input type="checkbox"/> No <input type="checkbox"/>	44	<input type="checkbox"/>	Other Income and Expenditures During the Past Month			
I 6. What was your net income from this job during the past month? (Do not include income from agriculture listed in block E, column 8.) - In cash Rp..... - In goods Rp..... - Total Rp.....	45	////// (hundreds)	Income		Expenditures	
I 7. Do you have any jobs in addition to this job? Yes <input type="checkbox"/> No <input type="checkbox"/> (proceed to line I 10)	50	<input type="checkbox"/>	Type	Amount Rp.	Type	Amount Rp.
I 8. How many hours did you work last week on all other jobs?.....hours	51	///	(1)	(2)	(3)	(4)
I 9. What was your net income from all other jobs during the past month? (Do not include income from agriculture listed in block E, column 8.) - In cash Rp..... - In goods Rp..... - Total Rp.....	53	////// (hundreds)	1. Pension (Retired)		1. Remittances sent	
I 10. How much income did you receive during the past month from land and house rentals and interest payments?	58	//////	2. Remittances received		2. From deposits or savings	
I 11. If you have the time available would you be willing to accept additional work? Yes <input type="checkbox"/> No <input type="checkbox"/>	63	<input type="checkbox"/>	3. Withdrawal from deposits or savings		3. Other (loans, payments, lotteries, investments, other funds)	
			4. Other, (borrowing money, etc.)			
			Total	Total
						69
						74

A. General Ability — Raven's Progressive Matrices Rationale

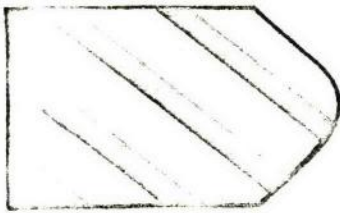
The geneology of the Raven's Progressive Matrices (or RPM) can be traced back to the investigations of Spearman into the nature of intelligence. It was his view that an undifferentiated concept of intelligence was less than adequate in describing cognitive abilities. Starting with the Standard RPM series, designed to sample the general range of ability, we will be able to provide a means to assess an adult's present ability to perceive and think clearly, irrespective of past experiences or present ability for verbal communication. The scales can be described as "tests of observation and clear thinking" and have been widely used cross-nationally with high levels of reliability.

— A —

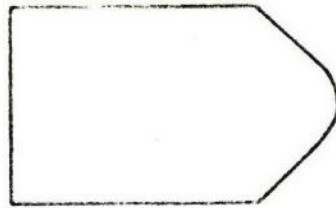
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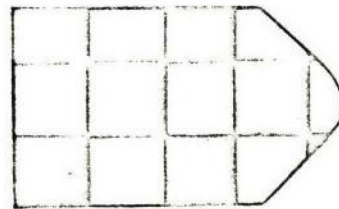
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2



3



4



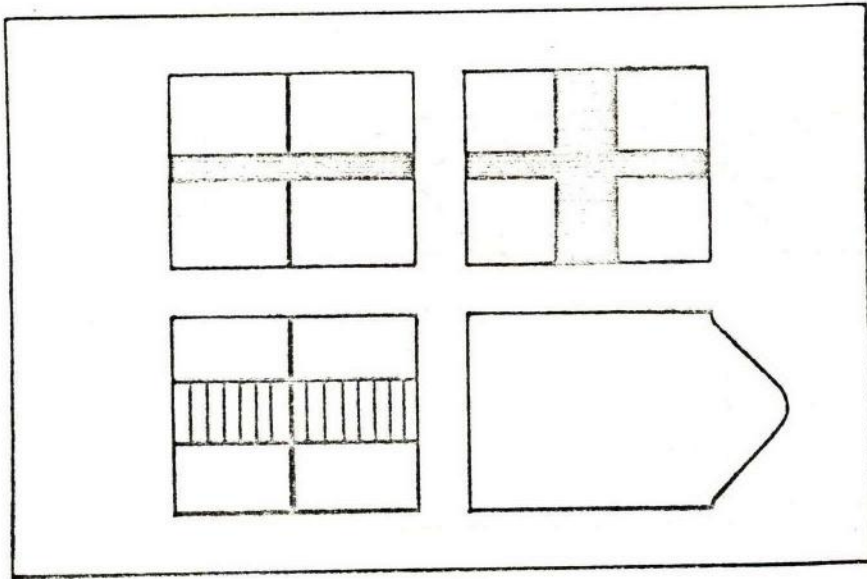
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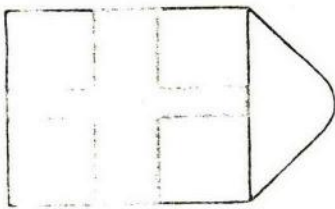
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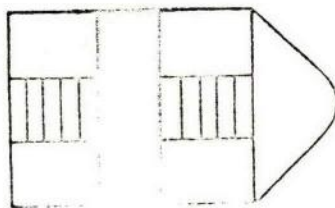
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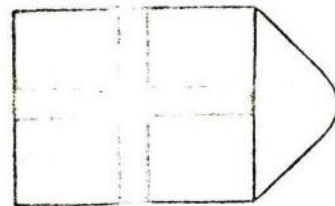
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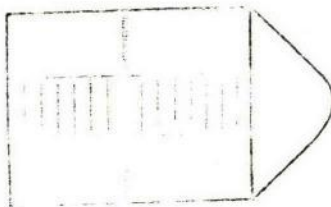
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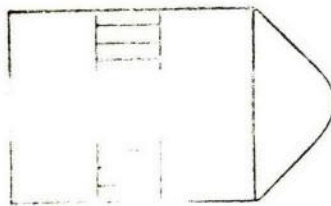
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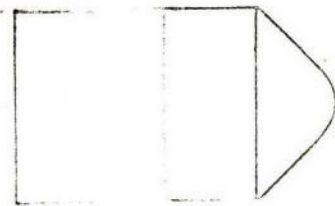
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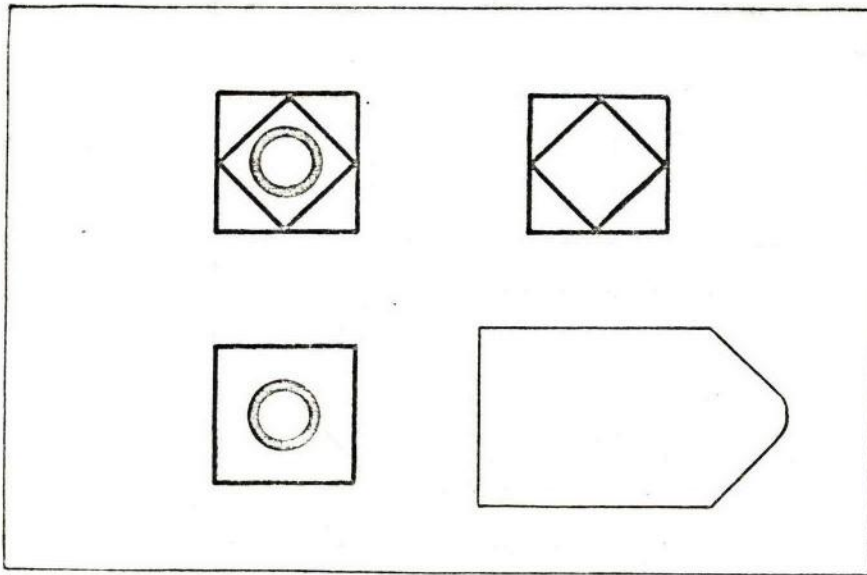
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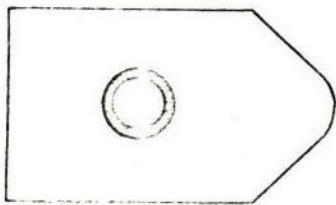
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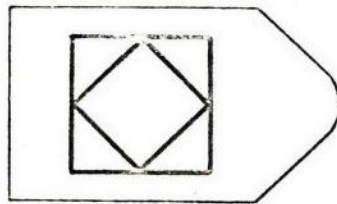
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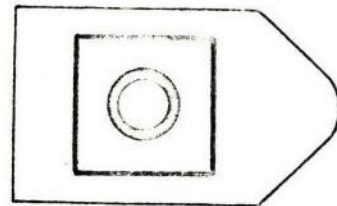
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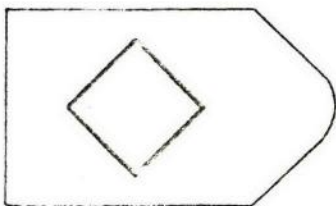
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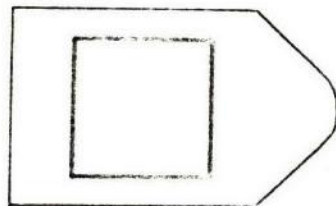
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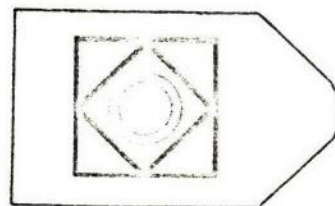
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5



6



B. Overall Modernity - the Short Form Rationale

Each of these items correlates well with the larger Overall Modernity scales in each of the six countries in the Inkeles (Harvard) study, at a highly significant level. Moreover, each of the questions was strongly correlated with the independent variables of education, urban experience and occupation. These items have been extensively incorporated in cross-cultural research. Since it is more or less inevitable that one or another question from a cross-national set may not serve well in a particular country, we have identified alternative questions for each of the above. Indeed we may ask the suggested alternate question as well, thus providing a pool of items which are theoretical equivalents, from which we may select those that are best understood and most discriminating in this particular study.

Purely Attitudinal Items^a

1. Have you ever (thought over so much) gotten so highly concerned (involved) regarding some public issue (such as . . .) that you really wanted to do something about it?
Frequently / Few times / Never
2. If schooling is freely available (if there were no kinds of obstacles) how much schooling (reading and writing) do you think children (the son) of people like yourself should have?
3. Two 12-year-old boys took time out from their work in the corn (rice) fields. They were trying to figure out a way to grow the same amount of corn (rice) with fewer hours of work.
The father of one boy said: "That is a good thing to think about. Tell me your thoughts about how we should change our ways of growing corn (rice)."
The father of the other boy said: "The way to grow corn (rice) is the way we have always done it. Talk about change will waste time but not help."
Which father said the wiser words?
4. What should most qualify a man to hold high office?
Coming from (right, distinguished, or high) family background
Devotion to the old and (revered) time-honored ways
Being the most popular among the people
High education and special knowledge
5. Which is most important for the future of (this country)?
The hard work of the people
Good planning on the part of the government
God's help
Good luck
6. Learned men (scholars, scientists) in the universities are studying such things as what determines whether a baby is a boy or girl and how it is that a seed turns into a plant. Do you think that these investigations (studies) are:
All very good (beneficial) / All somewhat good (beneficial)
All somewhat harmful / All very harmful
Some people say that it is necessary for a man and his wife to limit the number of children to be born so they can take better care of those they do have (already have).
Others say that it is wrong for a man and wife purposely (voluntarily) to limit the number of children to be born.
Which of these opinions do you agree with more?
7. Which one of these (following) kinds of news interests you most?
World events (happenings in other countries)
The nation
Your home town (or village)
Sports
Religious (or tribal, cultural) events (ceremonies) or festivals
8. If you were to meet a person who lives in another country a long way off (thousands of kilometers / miles away), could you understand his way of thinking?
Yes / No

9. Do you think a man can be truly good without having any religion at all?
Yes / No

Behavior-Information Items

10. Do you belong to any organization (associations, clubs), such as, for example, social clubs, unions, church organizations, political groups, or other groups? If "Yes," what are the names of all the organizations you belong to? (Scored for number of organizations.)
11. Would you tell me what are the biggest problems you see facing (your country)? (Scored for number of problems or words in answer.)
12. Where is (in what country is the city of) Washington / Moscow? (Scored correct or incorrect.)
13. How often do you (usually) get news and information from newspapers?
Everyday / Few times a week
Occasionally (rarely) / Never

EDUCATION AND INFORMAL
SECTOR EMPLOYMENT

A RESEARCH PROPOSAL

(RPO 672-98)

George Psacharopoulos
Principal Investigator

The World Bank
Education Department
Operations Policy Staff
March 1983

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Annex 1 Basic Household Questionnaire

ABSTRACT

0.01 This research proposal addresses an issue of major importance for Bank operations that has not so far been analyzed in the existing literature: What is the economic performance of those graduates of the school system who are engaged in the so-called "informal sector" of the economy of developing countries?

0.02 The existing empirical evidence on the economic role of education has been based almost exclusively on samples of government and large firm employees. This treatment would be valid if wages for similar kinds of labor were equalized across sectors and activities by means of perfect mobility. In such a case it would be immaterial which sector is sampled in order to assess the economic effect of education. But several studies (the most recent being Byerlee, Eicher, Liedholm and Spencer, 1983, for Sierra Leone) and casual observation of developing country labor markets suggests that such equalization does not take place. Minimum wage and other labor legislation, unionization and other institutional factors characterize particular labor markets. Due to these restrictions to entry, wages are above those levels needed to clear such markets and there is an excess supply of labor to them.

0.03 In most developing countries, however, the majority of urban labor ends up working in labor markets where legislation and institutional factors are less binding and hence where restrictions to entry are less. This section of the labor force usually includes wage labor working in small, non-unionized and non-registered enterprises, self-employed labor and those in family businesses. In these activities earnings perform more

of a clearing role and therefore reflect better the relative scarcity or abundance of different types of labor and hence their contribution to the economy.

0.04 A previous Research Committee project on "Farmer Education and Farm Efficiency" has significantly contributed to our knowledge on the effect of education on rural productivity. A more recent Research Committee project on the "Labor Market Consequences of Educational Expansion" is generating results on the effect of education in the large firm sector of the economy. The proposed project aims at filling the knowledge gap on the economic performance of the educated who are "employed" in the non-farm, non-modern sector in developing countries.

0.05 This gray area of economic activities, often referred to as the "informal sector", accounts for more than one half of total urban employment in many poor countries. The proportion of new flows of graduates who will seek first entry into these activities is even higher. Consequently, any educational policy which disregards conditions in this sector of the economy will miss an important empirical dimension of the problem.

0.06 Much of the literature debate surrounding developing country labor markets refers to "sectors" - rural farm, rural non-farm, urban formal, urban informal. The terms "informal" and "formal" are also used in this proposal as a shorthand for delineating those activities in which earnings have and do not have a market clearing function, respectively. These should not, however, be regarded as strict compartments for two reasons. Firstly, in urban areas the labor market conditions relating to different activities can be placed on a continuum ranging from those in which earnings are solely a result of competitive forces to those in which

institutional factors are clearly dominant. Secondly, many individuals may work in more than one sector at any one time and even more important, may move between sectors (and unemployment) over time. While concentrating attention on those currently working at the competitive end of the continuum i.e., in informal sector activities, the project will inevitably also consider other parts of the continuum and the ways in which individuals move between them.

0.07 The proposal addresses one central research question, the answer to which would enhance existing knowledge on the socio-economic role of schooling in developing country settings: Do the more educated engaged in informal sector activities, other things being equal, "perform" or behave differently from the less educated? The performance test goes beyond the traditional earnings differential and extends to small enterprise efficiency and job search behaviour.

0.08 The research design is primarily based on household data so that in addition to informal sector workers a number of participants engaged in less competitive activities can also be included. This is important in view of addressing labor supply questions, especially during the job search process. To complement the household data, small enterprise surveys in activities which have been shown to contain many of the self-employed will also be made.

0.09 Preparatory work has identified five potential research sites for this project: Upper Volta, Ivory Coast, Peru, Indonesia and China. The criteria used were a combination of the existence of a large informal sector in the particular country and previous work on it as to allow cost effective sampling; the importance of the country for Bank operations regarding human resource development; the willingness of the Government to

support the research project; and the existence of local institutions for research collaboration. For timing and budgetary reasons, the present phase of the research refers only to Peru. Preparatory work on the Ivory Coast, Upper Volta, China and Indonesia continues so as to possibly include them at a later stage as a follow up to the proposal in hand.

I. MAIN ISSUES AND ANALYTICAL FRAMEWORK

A. Introduction

1.01 There are always potential dangers in establishing exclusive categories for purposes of classification. In labor market studies of developing countries, the terms "formal" and "informal" sector have emerged. The definition of these terms and their usefulness have been debated for a decade. Quite clearly, on any of the conventional definitions the activity of a small family business is very different to that of large scale manufacturing. At the same time, many activities fall between these two extremes and are spread out along a continuum. As a first stage in conceptualizing the issues in this research proposal, however, some form of categorization is useful since the focus is on particular types of activity and their associated labor market. The distinction used in this proposal to categorize workers into formal and informal sectors is the extent to which there is a tendency in the activity in which they work for the wage (or earnings) to perform a clearing role in the labor market. (See Harberger, 1971).

1.02 Much of the information used to assess proposed education investment projects in developing countries has been drawn from statistical data on formal sector wage employment. Although it is true that the highly qualified will most likely eventually find modern, formal or public sector jobs, it has become clear in recent years that a significant proportion of all individuals who have received some schooling can expect to spend at least part of their working lives outside such "organized" sectors. In rural areas this means working in either farm employment or off-farm employment (Leiserson and Anderson, 1980). Much valuable research has been

undertaken by the Bank and other institutions and individual researchers on the complex relationship in rural settings between education and agricultural productivity (e.g., Lockheed, Jamison and Lau 1980, Jamison and Lau 1982). And, of course, work is continuing on the effect of education among those employed by formal sector establishments (e.g., Knight and Sabot 1981). However, there is a notable dearth of research on education and employment in both the informal off-farm sector and the urban informal sector.

1.03 Interest in this topic within the Bank, therefore, derives from a lack of assurance on the economic performance of graduates of the school system across the whole labor market. Manpower surveys and the resulting forecasts of skill needs in developing countries have been based largely on data representative of the urban formal sector. ^{1/} Similarly, cost-benefit studies have typically used data referring only to those workers employed for wages and salaries in the formal private sector and in the public sector. ^{2/} However, in the case of most developing countries this population is a small fraction of the country's labor-force. In the cities alone, over one half of workers are commonly employed in the informal sector, yet little is known about the effect which schooling has on their performance. While much has been written about the effects of schooling on occupational attainment, earnings potential, job productivity and other issues, the focus has been on the formal sector. Bowman (1980, p.13) has described this situation very clearly:

^{1/} For example, see Government of Malaysia, (1973).

^{2/} See Psacharopoulos (1973), Appendix B for the earnings sources of 28 cost benefit studies in developing countries.

"In reading the results of ... rate-of-return investigations of education ... it is important that we ... remind ourselves of the systematic bias ... against the inclusion of returns to education in nonwage activities. Most of the rate of return studies are based on data of wage and salaried persons only. No one knows how much of a contribution to growth may derive from a better educated population of independent entrepreneurs."

1.04 Clearly, as the informal sector grows and becomes the sector in which very many school leavers will seek their first employment, it becomes increasingly important to analyze the economic effects of schooling in this sector if investment decisions in education are to be linked to an accurate assessment of economic returns.

B. Goals and Objectives

1.05 The central objective of this research proposal is to assess the effects of education on those individuals working in the informal sector. Analysis of this sector, however, is made in the context of the total urban labor market. At any one time, an individual may be unemployed, combining household domestic and economically productive work, employed part time in the informal sector while looking for a formal sector job, working full time in the informal sector and regarding this as either a temporary or permanent situation, or working full time in the formal sector. Within the informal sector itself, members may be apprentices, wage employees, self employed or non-wage workers in a household enterprise. Over time, an individual can be expected to move between several of these states, especially during the early years of his labor force participation.

1.06 As a result of this complexity, the proposal is divided into two parts. First, it concentrates on analysing the effects of education on the economic performance of those individuals who at one point in time are engaged in the informal sector as wage earners, household workers or self employed. The underlying approach of this part of the proposal is human

capital theory. Second, while still concentrating on those working in the informal sector, the proposal aims to analyse the factors involved in an individual's (or household's) choice of labor market strategy in the context of the options described above. This part of the research will be based on models of job search and household decision making.

C. Research Focus

1.07 Prior to a presentation of the methods to be used to approach the research goals, some discussion of the data types and the units of analysis is required.

1.08 The person not engaged in the formal sector but seeking economically productive employment can be assumed to allocate his (her) time across different activities i.e., self-employment, wage employment or job search (including open unemployment) such that the expected returns from the last hour in each are equated. If, alternatively, instead of focussing on decisions made by the individual, attention is placed on the household, the issue is again one of optimal time allocation but in this case it is the expected returns to the household which are equated.

1.09 If, for simplicity, it is assumed that the individual (household) has no innate preferences or tastes in favor of or against any of these activities then the expected marginal value of an additional hour of self-employment, the net hourly wage of employees and the expected marginal value arising from an additional hour of search will all be equal.

1.10 In practice, there may be systematic differences in these values for a given individual or between apparently identical individuals for several reasons including different non-monetary or psychic costs and benefits associated with each activity (e.g., working conditions), restrictions set by household domestic work, barriers to entry, lack of information and errors in decision making. Across individuals with different characteristics the list must be lengthened. Not only will less productive workers have lower earnings but so also will those who suffer the effects of discrimination. Careful standardization is thus required before one can seriously attempt to isolate the effects of education on earnings. Similarly, the impact of education on expected returns to job search and hence on search behaviour must be carefully separated from the influence of other variables.

1.11 Some of the difficulties mentioned above could be avoided if it were possible to directly observe the effect of the educational or training levels of workers on the performance of the enterprises (including one-person businesses) in which they are employed. One, at first sight, appealing approach is to directly estimate a production function of the form:

$$Q = f(K, N, H) \quad (1)$$

where Q is output, K is physical capital input, N is input of uneducated labor and H is a suitable measure of the service flow from educated labor. In agricultural studies, the Cobb-Douglas function has usually been favored

(Lockheed, Jamison and Lau, 1980), although alternatives have also been proposed. ^{4/} The central aim of such an approach is to isolate the effect of H on Q. In some studies this has been interpreted as the difference in productivity between educated and less educated labor while others have seen it as the effect of education in pushing the enterprise closer to its technological frontier. Important extensions of this latter approach have examined the impact of education on the proximity that farmers achieve to their profit maximization positions (allocative efficiency) by the use of a profit function derived from a Cobb-Douglas production function (Jamison and Lau 1982).

1.12 There are, however, a number of good reasons why it would be very unwise to use production function studies as the primary approach to analyze education-productivity relationships in the urban informal sector. Firstly, the bulk of informal activities are concentrated in services and trading within which it is notoriously difficult to define a real output measure and to specify a production function in the normal sense. Secondly, the wide spread of secondary i.e. industrial activities in the informal sector means that any general survey will pick up only a very limited number of observations in most activities. If sufficient observations were obtained in a small number of activities then the results, although interesting in themselves, could well be atypical of the informal sector as a whole. These comments do not rule out the use of production functions altogether and, where there appear to be

^{4/} In aggregate production function studies, alternatives such as the single and two level CES functions have also been used.

concentrations of particular activities, such studies may be a useful adjunct to other data sources.

1.13 The central focus of the research proposal is, therefore, directed towards measuring the effect of education and training and testing a number of related hypotheses with the aid of data taken from observations on individuals within households.

1.14 While the survey of households will concentrate on picking up information on informal sector workers, it will also cover some working in the formal sector and is likely to include some unemployed persons. It will also pick up information on women who combine household domestic work with part time employment. In this case, part time employment in the informal sector may not be combined with job search but is a direct response to the restrictions set by domestic responsibilities. All this comparative information should prove extremely valuable for two reasons. Firstly, information across the urban labor market will give a view of the market as a whole and will therefore provide a base for analyzing determinants of labor supply to different sectors. Secondly, as explained below, there are certain hypotheses regarding behaviour in different parts of the labor market that are particularly interesting.

1.15 The problems of obtaining reasonably accurate income information at the household level cannot, however, be disregarded and it may also be necessary to construct some expenditure data as a check. In addition, any factors which lead to substantial seasonal variation in earnings will need to be very carefully allowed for.

D. Research Questions and Methodology

1) The Effect of Education and Training on Observed Earnings and Productivity

1.16 One way of isolating the effects of education on the productivity of those engaged in the informal sector is to follow Schultz's (1975) distinction between (a) worker or production efficiency i.e. how well a task is performed and (b) entrepreneurial or allocative efficiency i.e. decisionmaking ability.

1.17 Prior to that discussion, however, it is useful to make a somewhat crude division of informal sector activities, which are very heterogeneous, into various categories. As a start, five categories can be identified together with the respective skill levels associated with them.

- a) Craft activities: unchanging technology, manual-artistic skills unrelated to formal schooling, e.g. carving, basket work.
- b) Simple consumer goods: low skill, repetitive process, identical product, e.g. paraffin lamps from tin cans.
- c) Services: managerial skills from the very simple to the complex, e.g. hawking, food stalls, money lending.
- d) More sophisticated consumer goods: manual, trade skills, e.g. carpentry, welding.
- e) Workshop production: high level of manual skill e.g. machining intermediate and simple capital goods.

1.18 Each of these categories of activities requires different levels of skills and abilities for both the wage earner/apprentice and the self employed/employer. Each also faces different demand conditions and possibilities of market expansion. For (a), (b) and much of (c), possibilities of dynamic growth involving increases in labor productivity are slight and additional numbers of those participating often simply lead

to smaller market shares. It is those enterprises in categories (d) and (e) which are likely to be more capable of finding or creating new markets, competing directly with formal sector enterprises or increasing their involvement with the formal sector through sub-contracting the production of intermediate products.

1.19 Returning to Schultz's distinction between productive and allocative efficiency, education may affect informal sector participants' earnings by:

- i) Increasing labour productivity - productive efficiency.
 - ii)
 - ia) Positively influencing the capacity to obtain credit or generate savings leading to capital accumulation.
 - ib) Increasing entrepreneurial efficiency.
- } allocative efficiency

Each of these is discussed below.

1.20 (i) Education may raise the labor productivity of all types of informal sector workers through at least three ways:

- a) The direct teaching of a skill which can be used to more effectively perform a particular task. The opportunity to use such a skill is likely to be greater in those activities which are open ended and not highly structured i.e. activities a, b and c.
- b) The ability learned in school to problem solve, be adaptable, think in terms of alternatives and so on, in relation to the performance of a task. This ability is applicable to employees/apprentices as well as the self employed since the essence of many informal tasks is adaptation, particularly in activities a, b and c.
- c) The faster learning of skills as a result of the discipline and experience of schooling.

1.21 (iia) The ability to raise credit or accumulate savings is a key factor in increasing productivity in informal sector activities, creating new markets and competing more effectively with the formal sector. Credit may be raised from relatives and friends, informal sector money lenders, government agencies, co-operatives, savings and loans societies, commercial banks and so on. Savings may be accumulated from periods spent working in the formal sector. It may be expected that for institutional loans, there will be a greater willingness on the part of the institutions to lend to people with more education, other things being equal. Similarly, there would appear to be a greater likelihood that periods of formal sector employment are achieved by the more schooled with a consequent increased probability that they are able to accumulate savings which can then be used to finance informal sector activities. Both of these suppositions can be investigated by the surveys.

1.22 (iib) The use which is then made of capital and other inputs is an important aspect of entrepreneurial efficiency - or, in Schultz's terminology, allocative efficiency. The advantages stemming directly from literacy for entrepreneurial activity are obvious - book keeping, ordering, etc. More important, however, are the advantages it may allow in being able to keep up with changes in the economic environment. Important aspects of entrepreneurial efficiency include the ability to re-allocate factors as a result of changes in economic circumstances and an increased knowledge of relative prices, perception of the potential range of technology and potential markets.

1.23 These ways in which education may, potentially, affect the productivity of those working in the informal sector will be investigated

by a number of approaches. At this stage of project conceptualization, the approaches center around standard earnings functions, the more complex use of path analysis and a disaggregation of education effects, and production functions. These are each discussed in detail below,

a) Earnings Functions

1.24 The survey will yield information on the incomes derived from three types of activity:

- (i) employment by an enterprise outside the household
- (ii) self-employment (working alone)
- (iii) employment in household enterprises.

In many cases the incomes reported for (iii) will not be apportionable among household members as a reward to their labor since total value added will partly reflect returns to non-human assets, and the share-out among household members (if observable) may reflect kinship loyalties as much as their respective productivities. For (ii), reported income will also sometimes contain a significant capital component. Only for (i) can all income be attributed to labor services.

1.25 We will assume that an hour's labor earnings can be written as a function of the individual's education and training (\underline{E}), other individual characteristics such as sex, experience, and race/ethnicity (\underline{I}) and relevant family characteristics such as father's education and socio-economic background (\underline{F}). The family background variables are included as proxies for pre-schooling ability and a vector of learning influences at home such as parental encouragement, and the presence of printed materials and communications media. Thus we can write for the i^{th} individual,

$$W_i = W(\underline{E}_i, \underline{I}_i, \underline{F}_i)$$

1.26 The simplest analysis is to estimate this equation in a conventional log-linear form across hourly wage income earners (type i). If E_i is specified as a set of suitably defined education and training dummies then the corresponding coefficients reflect the proportionate differences in the hourly wage between the education and/or training groups in question and the base group after controlling for other independent determinants of wages. This will therefore provide estimates of the wage differences associated with different levels and types of education and training.

1.27 Many informal sector participants will earn their main source of income not through wage employment but through self employment in situations in which they are the only workers (type ii). Two approaches can be adopted here. The first, and simplest, is to restrict the analysis solely to individuals engaged in activities within which capital assets other than inventories are non-existent or insignificant.

1.28 The second, and more difficult, approach is to disentangle labor income in those activities in which physical capital is a relevant input. ^{5/} This can be done, in principle, by subtracting imputed capital costs from value added. Imputed capital costs are calculated by multiplying the replacement value of assets by an appropriate borrowing or lending rate and adding depreciation per period. The marginal product associated with an additional hour of work is then estimated by dividing labor income by hours worked. Given the number and strength of the

^{5/} While Mazumdar (1981), Souza and Tokman (1978) and Chiswick (1977) have applied earnings functions to the self employed, in no case has a detailed adjustment for capital been made.

assumptions involved, this approach is clearly susceptible to error from various sources and possible biases. However, an earnings function can be fitted to the data obtained for all self employed individuals with this method and the results compared with those for the restricted sample of self employed discussed above.

1.29 Another issue to be focussed on is whether individuals of given characteristics have similar earnings in different activities. If they do then it is appropriate to estimate the returns to education in a straightforward way on the basis of average differences in earnings by educational level. If, however, there are certain barriers to employment such that earnings are not equalized for similar individuals then the returns to education depend upon the probabilities of a new school leaver finding work in the different activities, and how those probabilities are affected by education.

1.30 The most general way to test this is to re-specify the earnings function as,

$$W_{ij} = W(\underline{E}_i, \underline{I}_i, \underline{F}_i, \underline{d}_j, \underline{E}_i \underline{d}_j, \underline{I}_i \underline{d}_j, \underline{F}_i \underline{d}_j) \quad (2)$$

where \underline{d}_j is a set of dummy variables and $\underline{E}_i \underline{d}_j$, $\underline{I}_i \underline{d}_j$, etc. are sets of interaction terms between \underline{d}_j and other variables. In the simplest case, \underline{d}_j would be an employment status dummy i.e., wage-employment/self-employment, but it would be more interesting to extend the number of dummies to differentiate between different industries and occupations within the informal sector. The coefficients for \underline{d}_j reflect differences in the earnings of the base group across activities while those on the interaction terms pick up the differences in the differentials by activity associated with the characteristics in question. More restricted forms of the

equation will also be used, e.g., with I_{idj} and F_{idj} omitted. The overall hypothesis that different activities have identical earnings functions can be tested by fitting equation 2 to separate sub samples and then applying Chow tests.

1.31 Variations in earnings for similar individuals located in activities at different ends of the formal-informal sector continuum will also be tested for. Any divergence in earnings for individuals with similar characteristics is in itself an indication of the strength of the barriers between the sectors. Formal sector earnings may reflect institutionally set salary scales and the effects of collective bargaining while in the informal sector, wages and the labor component of self-employment incomes are determined competitively. If d_j is replaced in equation 2 by a single formal/informal sector dummy, then an earnings function analysis can pinpoint both average sectoral earnings differences and sectoral differences associated with education and other characteristics.

b) The Nature of the Observed Link Between Education and Earnings

1.32 Why does education or training raise individual earnings? If we knew the answer to this question it might be possible to reorganize educational curricula and training programmes so as to improve their performance in this respect. As part of the surveys, short tests of both cognitive ability COG, (e.g., reading comprehension, reasoning) and attitudinal modernity, MOD, will be administered to economically active household members. These can be used to decompose the effects of education on earnings.

1.33 An illustration of the general approach can be given with the aid of the following simple recursive model (subscripts and random error terms are omitted for convenience).

$$E = d_1 + d_2 \underline{I} + d_3 \underline{F} \quad (4)$$

$$\text{MOD} = c_1 + c_2 E + c_3 \underline{I} + c_4 \underline{F} \quad (5)$$

$$\text{COG} = b_1 + b_2 E + b_3 \underline{I} + b_4 \underline{F} \quad (6)$$

$$\log W = a_1 + a_2 \text{COG} + a_3 \text{MOD} + a_4 E + a_5 \underline{I} + a_6 \underline{F} \quad (7)$$

Although in practice education dummies will be mostly used, these are collapsed here for convenience into a single variable, E , defined as years of education. Working through the model, education is determined in (4) by certain personal characteristics (age and sex) and family characteristics. Along with education the latter also determines MOD and COG in (5) and (6). Finally, the earnings function is re-specified in (7) with MOD and COG added, E retained to pick up education effects not reflected in MOD or COG and the \underline{I} and \underline{F} vectors retained for the same reason.

1.34 Estimation of equations (5) and (7) will allow us to divide the overall effect of education on earnings into three components: the effect of raising COG and hence log W , the effect of raising MOD and hence log W , and finally the direct effect of education on log W after controlling for COG and MOD. In terms of the model we can represent this as:

$$\text{Total effect} = a_4 + a_2 \cdot b_2 + a_3 \cdot c_2$$

1.35 Path analysis can also be used to examine the contribution of the above three components to the bivariate correlation between log W and E. This general approach can be extended much further. If one now brings in equation (4), it is possible to further decompose the overall effects of individual and family characteristics on earnings. (See Figure 1.1) Individual characteristics include a pre-school ability measure, or this could be used as an intervening variable between family background and education.

1.36 A particularly interesting extension will be to compare results when the analysis is applied separately to the samples of formal and informal sector workers. This will give some useful comparative insights if particular levels and types of education or training have different impacts on earnings in the two sectors.

c) Direct Estimates of the Effects of Education and Training

1.37 As described briefly above, one alternative approach to measuring the effect of education's productivity is via the use of production function analysis. In terms of the earlier classification, the analysis can be applied to the activities of one self-employed worker (type ii) or multiple workers engaged in a common activity (type iii). Two variants of the approach can be explored. The first treats labor in different education or skill categories as separate factors of production i.e.,

$$Q = f(K, L_1, L_2 \dots L_n)$$

where L_1 is labor input of the 1th type, while the second argues that the education of the head of household is what matters and affects the enterprise by improving the technical efficiency of the establishment i.e.,

$$Q = A(\underline{E}) f(K, L)$$

where A is a technical efficiency parameter, \underline{E} is a set of education and

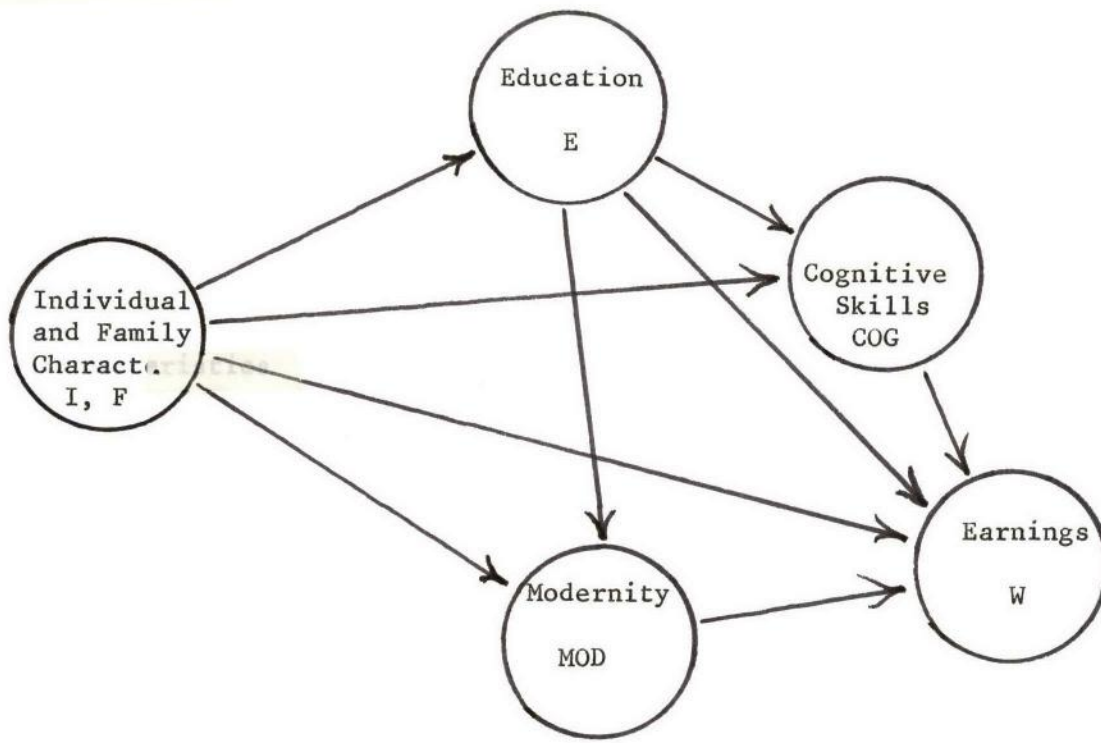


Figure 1.1. A path model of the effect of education on earnings

training dummies as before and L is total undifferentiated labor input. If a Cobb-Douglas production function is used the functions can be estimated in logarithmic form by ordinary least squares and if more complex functions such as a CES are used then non-linear techniques can be applied.

1.38 The effect of education on allocative efficiency has been investigated in recent studies of farm behavior by employing a profit function derived from a Cobb-Douglas framework. The latter expresses profit (revenue less variable costs) as a function of a parameter reflecting both technical and allocative efficiency levels, fixed factor quantities and variable input prices. This is an excellent framework in which to explore the effects of farmer education given that land can plausibly be treated as a fixed factor and other factor prices will often vary between regions. In the urban informal sector context, however, the framework does not appear very promising given that it is not obvious that household enterprises employ fixed factors except perhaps for the workshop size in manufacturing activities. Also, given that the surveys will be carried out in only one city, we are unlikely to observe much variation in input prices.

1.39 One possible alternative is to examine whether there is any relationship between the educational qualifications of the household members and the unit costs of the enterprise. The latter can be calculated by using the estimated earnings functions (for informal sector wages only) to impute the wage costs of household workers and then adding capital, inventory and intermediate input costs. Capital and inventory holding costs can be calculated using the method discussed earlier. This only permits us, however, to examine a modified version of the allocative

efficiency concept as success in attempted cost minimization is being investigated rather than success in profit maximization.

2) Labor Market Behaviour

1.40 The second major research question focusses on the effect which education and training has on decisions with respect to participation and behaviour in the labor market. This deals, then, with some of the complex issues of labor supply and allocation. There are two stages of decision-making on which to concentrate. The first relates to decisions regarding the acquisition of education and the second to the choice of economic sector in which individuals with different amounts of education hope to participate and the actions taken to achieve this.

1.41 Household decision models view the household as an economic unit maximizing a single utility function which incorporates the preferences of all its members. In these models it is considerations of the household unit, rather than the individual, which are paramount. As such, they go beyond the hypothesis that an individual's decision may be affected by household characteristics. In the context of this research proposal, decisions relating to an individual, but made by the household, enter at two stages. The first centers on the amount of schooling demanded for the family as a whole, or for an individual child; the second relates to the behaviour of the school leaver in approaching the labor market. The two are shown schematically in Figure 1.2. Lying behind each 'household decision' are sets of external economic factors and household characteristics.

1.42 Factors affecting decision point (i) i.e. the household demand for schooling, have been discussed by Birdsall and Cochrane (1982). These are,

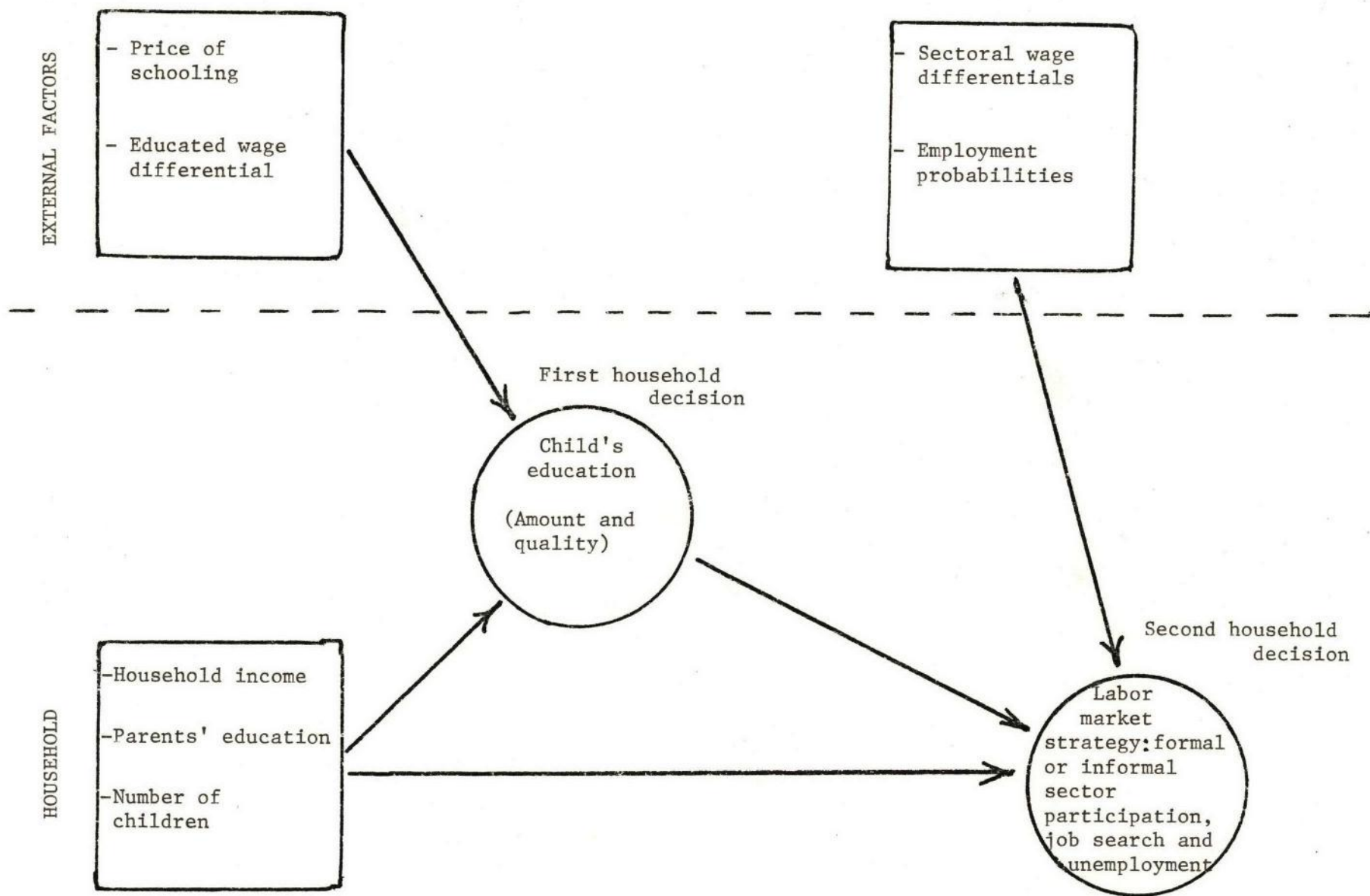


Figure 1.2 Household Decision Model: Demand for Education and Labor Market Behaviour

the price of schooling P_S , other prices P_X , the wages of the husband, wife and children in employment W_n , W_w , W_c , other household income V , and taste for education T (proxied by parental education). To these may be added the wage differential associated with the level of schooling in question and the number of non-earning children. The household demand for schooling level s , for an individual child is then:

$$D_{si} = f(P_S, P_X, W_n, W_w, W_c, V, T, C)$$

1.43 Several pieces of descriptive research (referred to in Section D below) have shown that the first few years of employment are often associated with shifts by individuals between types of employment status. In this proposal, therefore, we are also interested in the household and individual decisionmaking processes whereby school leavers approach the labor market and make choices between unemployment and job search, part time employment in the informal sector and job search, full time employment in the informal sector, and employment in the formal sector. Labor market strategy adopted by the household for the 'educated' family member again depends on external economic factors mediated via the particular economic circumstances of the household. Those hypothesized as influential are the income of the family which may be used to finance job search while the individual is only part-time employed, or unemployed, and the sector of employment of the parents and employed children which may influence attitudes and contacts. This part of the project will link up to work on school leaver tracer studies which is already being conducted within the Education Department.

1.44 A new labor market entrant who aspires to but cannot gain immediate entry to the formal sector has in principle a choice of two strategies: to

remain totally unemployed or, in the absence of barriers to entry, to participate to some degree in the informal sector thereby reducing the probability of finding a formal sector job in a given period (Fields 1975, Pinera and Selowsky 1979). If the latter strategy is adopted, a choice of the number of hours of intended search must be made (search intensity).

The primary purpose of this part of the proposed project will be to:

- a) examine whether the informal sector is used as a means of financing job search,
- b) measure search intensity and experience among informal sector participants and the unemployed,
- c) estimate the effect of education on unemployment incidence and search intensity.

1.45 Obviously much of the research will be based on descriptive information obtained from the surveys. For example, search activity among informal sector workers will be directly observed and cross-tabulated with education and other characteristics. Similarly, unemployment rates will be estimated among individuals classified by a number of characteristics including the participating sector of other household members and education. The more technical part of the analysis will, however, focus on two interrelated problems: separating out the effects of education,

training and household characteristics on the incidence and duration of open unemployment and on the search intensity among those participating in the informal sector. Clearly, in the absence of any barrier to entry in the informal sector one can provide an integrated analysis in which open unemployment is simply a special case in which the individual chooses the upper limit of search intensity. However, given that such barriers may exist it is useful to examine the determinants of the two decisions separately as well as together.

a) The General Case

1.46 A complete analysis of the individual's optimal search path over time would be rather complicated as this needs to be integrated with the choice of an optimal consumption path given an initial asset endowment. For present purposes it is, however, sufficient to assume a static present value of income maximization model in which the individual only makes decisions one period at a time. Suppose the i^{th} individual is faced with an informal sector wage T_i and an institutionally set formal wage W_i and a probability of a formal sector offer that depends upon the number of hours searched per day. ^{6/} The individual will then search more intensively: the greater the difference between W_i and T_i , the greater the probability of success for any given number of hours searched, the less the tendency for diminishing returns to hours searched to occur in terms of the job finding probability and the easier it is for the individual to finance search by means other than informal sector participation. The first two

^{6/} In practice the individual will face a distribution of formal sector wage offers but we will assume for the moment that this dispersion is small and can be ignored.

of these are determined by the arguments of the earnings function, the third is essentially technological while the last is determined by family characteristics.

1.47 For each economically active individual not working in the formal sector we will know the number of hours devoted to search in the previous week (S). The empirical model is then:

$$S_i = S(\underline{E}_i, \underline{I}_i, \underline{F}_i) \quad (8)$$

where \underline{E} , \underline{I} and \underline{F} are defined as before.

1.48 There are two issues of particular interest here, both of which go beyond the individual and can be placed in the context of household decisionmaking. The first is whether search intensity is positively related to education and training and, if so, to what extent this is because of higher returns to search for the more educated arising from a wider variation of earnings facing them or because of family background variables which affect the cost of search. The second is whether it matters if the individual's family are informal or formal sector participants. This can be investigated by introducing one or more appropriate dummy variables. These analyses will be conducted with equation (8) applied to all economically active individuals (including the unemployed) who do not work in the formal sector.

1.49 These issues can be described graphically.

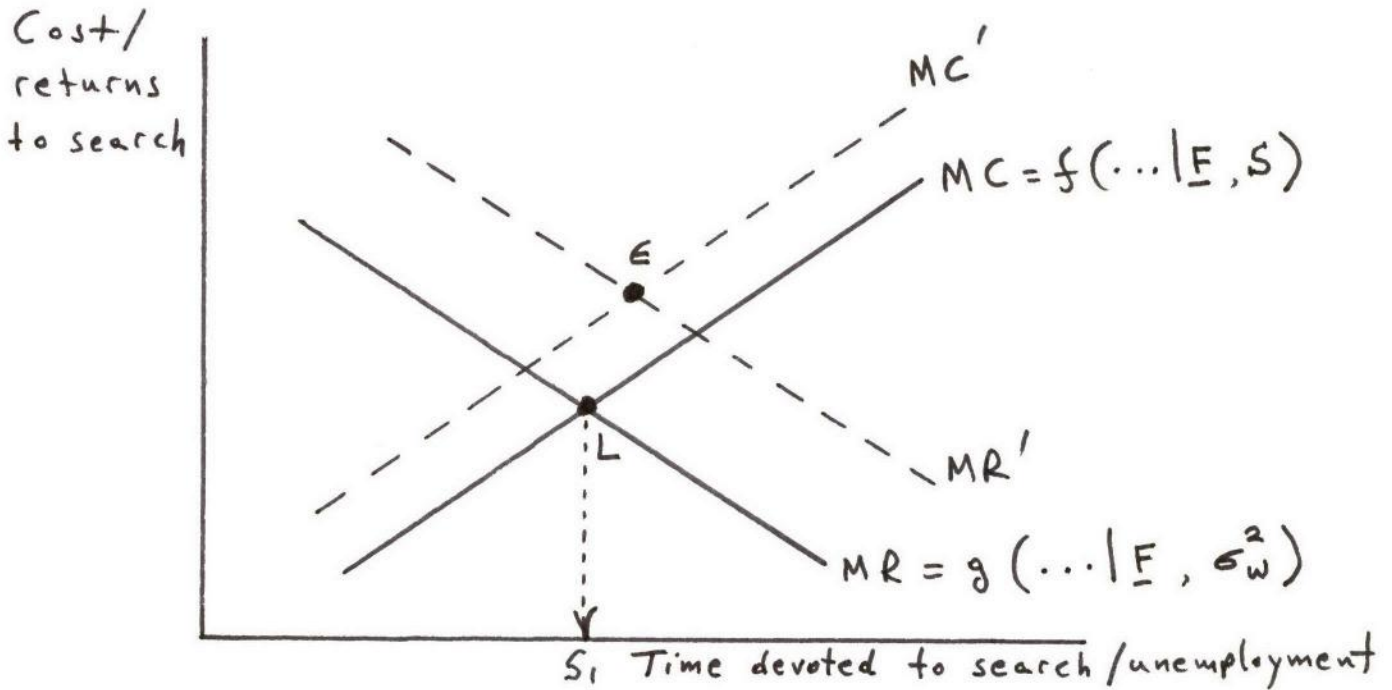


Figure 1.3 Education in a job search model

In figure 1.3 the thick and dotted lines denote the marginal cost and revenue curves of job search for individuals with primary and secondary schooling respectively. The marginal cost curve is drawn upward sloping to reflect that the financing cost of job search increases over time while the downward slope of the marginal revenue curve signifies diminishing returns to search. For the primary school leaver, the optimum search time is S_1 . For the secondary school leaver, both cost and revenue curves are higher because of the increased opportunity costs of search (foregone earnings) and the greater variation in earnings levels facing individuals with greater amounts of education. Whether the equilibrium search time for

secondary school graduates is longer than for primary school leavers or shorter, is an empirical question and depends on the slopes and shifts of the curves. Depending on the way in which search is financed, the individual or the household will be at the center of analysis.

b) The Incidence and Duration of Unemployment

1.50 This is a special version of the case above in which the individual is treated as choosing between open unemployment and informal sector participation at some fixed intensity. The analysis is then similar to that above except that an unemployment dummy UNEMP for non formal sector participants is first defined which yields a similar equation:

$$UNEMP = U(\underline{E}, \underline{I}, \underline{F}) \quad (9)$$

Also, an effort will be made to define a more continuous employment variable among those who reported variation in the time budget question.

1.51 The observed number of unemployed depends, in a steady state, upon the number of individuals entering unemployment per period and their average completed duration of unemployment. In less developed countries a disproportionate number of the unemployed are relatively young and presumably many of them are new labor market entrants. Given that the inflow among young people is essentially determined by the age distribution and the out-turn of the educational system, the incidence of unemployment among young people is largely determined by their completed duration. An equation similar to those above can therefore be estimated by TOBIT analysis with completed unemployment duration DURUNEM as the dependent variable applied to all young people under (say) 30 years of age who have either never experienced open unemployment or who have completed an unemployment spell.

c) Search Intensity

1.52 Finally one can restrict the search intensity analysis only to those who are currently observed as participants in the informal sector. This is valid if there are significant barriers to entry to the informal sector such that some individuals have the possibility of working in it and others do not.

3. Dependent and Independent Variables

1.53 A summary of the above discussed operational variables to be measured in this project is as follows:

(a) Dependent Variables

- W hourly wage or labor income as described above
- COG continuous cognitive measure, i.e. performance in tests to be developed by the local research team. (Also becoming an independent variable in the recursive model).
- MOD modernity of attitudes measure: likewise to be developed by the local research team (For examples, see Annex 2).
- Q_{ij} output of the j^{th} activity in the i^{th} household (Self-employed and household enterprises only).
- C_{ij} total production costs of j^{th} activity in the i^{th} household (Self-employed and household enterprises only).
- S time (hours) per week devoted to search activities.
- DURUNEM length of completed spell of unemployment.

(b) Independent Variables

1.54 These may be subdivided into four groups: education (formal and training), individual, background and other.

a) Education

- E a set of 0 - 1 dummy variables indicating either years of schooling completed or qualifications.
- YS years of schooling: this can be used as an alternative to E in some equations.

- STYPE school type, e.g. private or public.
- SQUAL a vector of school quality indicators.
- SCURR type of school curriculum followed, e.g. general vocational.
- TR a set of 0 - 1 dummy variables indicating different levels and types of training. In the discussion above these are subsumed under E.

b) Individual

- SEX a 0 - 1 dummy variable indicating the sex of the individual.
- EXP total working experience.
- EXPEM time spent with present employer.
- AGE age.
- RACE a set of 0 - 1 dummy variables denoting different racial, ethnic or tribal groups.
- DSEC a set of 0 - 1 dummy variables denoting sector of work e.g. self-employment or wage employment, different activities etc. In the discussion above this was abbreviated to d.
- ABIL measure of 'raw' or non-school created ability. (For example, see Annex 2).
- MIGR a 0 - 1 dummy variable indicating the person is a migrant to the present residence.
- ORIGIN geographic origin of migrant.
- RES length of residence of migrants in the present city.

c) Background

i) Earnings Functions

- FATHED Education of father in years.
- MOTHED Education of mother in years.
- FATHOCC Father's occupation: a set of 0 - 1 dummy variables.
- MOTHOCC Mother's occupation: a set of 0 - 1 dummy variables.

- FATHSEC Father's sector of employment.
- MOTHSEC Mother's sector of employment.

ii) Search and Unemployment

FATHED and FATHOCC as above plus the following:

- INC Household income per adult equivalent member.
- FATHINC Father's income (an alternative to INC)
- DEPENDS Number of dependents in household
- HINF 0 - 1 dummy denoting household members in the informal sector
- FSELF Father self-employed (an alternative to HINF).

d) Other (analysis of household enterprises only)

- K value of assets used in activity.
- L_i labor time of i^{th} type used in activity.

(c) Sampling

1.55 Since the main concern of the research focusses on the effects of education in labor markets at the competitive end of the continuum, i.e. the informal sector, this immediately delineates the concentration of the sample. In addition, concern is more with the recent output of the school system, say those aged 30 or under. Putting these restrictions together, the target area of the investigation can be identified as the intersection of the three circles in Figure 1.4. Of course, a control group of non-educated engaged in the same sector, will also be included.

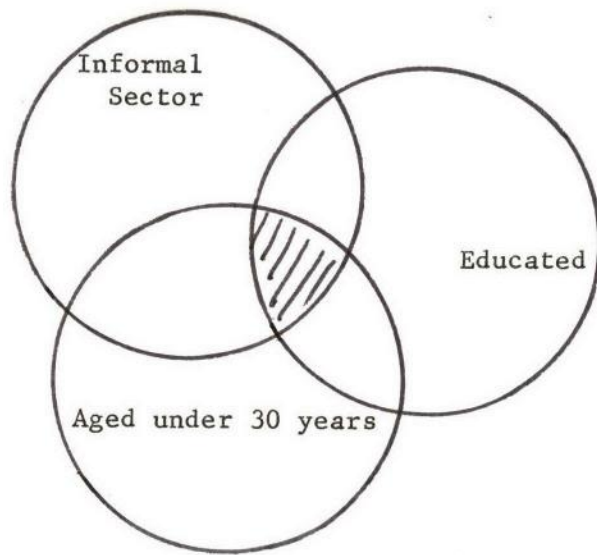


Figure 1.4. The target group for the investigation (shaded area).

1.56 In order to arrive at such an intersection it is necessary to sample individuals in household units in areas which are a priori known to contain a large proportion of the target group. (A basic questionnaire is in Annex 1). Obviously this approach requires some simplifying assumptions in order to be workable. For example, while average earnings in the informal sector appear to be universally inferior to those of the formal sector, it is not entirely justifiable to construct a sample of

urban poor in the intent of finding a larger concentration of individuals in the informal sector. Obviously, the "urban poor" and the "informal sector" are not coterminous; the poor and the better off exist in both sectors.

1.57 However, concentrating the sample in areas that are relatively poor, contain relatively more recent migrants, fewer schools and large-scale production activities, should increase the probability of capturing the full range of economic activity in this sector. Conversely, it runs the risk of not adequately capturing the experiences of those who have found work in the formal sector. For this reason we do not wish to narrow the criteria too closely in our sample design. Definitions in this sector are imprecise. And we will attempt to avoid introducing our own biases in the form of strict definitions in a field that has achieved little consensus. By choosing a household survey rather than a survey of establishments, data will inevitably be drawn from a universe larger than the informal sector itself (but certainly containing it). The essential advantages of this approach are that it leaves open the possibility of analyzing the data at a more disaggregated level, it provides for the definition of the informal sector in empirical terms as wide or narrow as we wish, and it permits us the economy of utilizing extant sampling frames.

1.58 Although it would be useful to survey the urban areas as whole of each country, it is unlikely to be practical given the escalation in costs involved. We therefore propose in our selected country case (described in the next section) to concentrate on the capital city Lima, (a sample of 6,000 households.) However, when the research extends to Indonesia in a later phase, we will be able to include a cross-section of both rural and urban areas through use of existing household survey

frameworks, (see Section C below describing research sites).

1.59 The main surveys will be preceded by a short but indepth pilot. Apart from testing the applicability of the questionnaire this will also be used to obtain vital local information regarding fixed assets and intermediate inputs used by the main activities.

C. Country Case Studies

1.60 Five countries have been identified as potential research sites for this project: Ivory Coast, Upper Volta, Peru, Indonesia and China. The criteria used for identifying these countries have been a combination of the following:

- a) importance of the country in terms of Bank lending for education,
- b) willingness of the government to support the research project,
- c) available previous work on the informal sector as a basis for rigorous sampling,
- d) existing local institutions identified for research collaboration,
- e) preparatory work already done by EDC towards the inclusion of a particular country.

1.61 Missions have already visited Ivory Coast, Upper Volta, Peru and China in preparation for this project. Government support has been secured in each of these countries and local research institutions have been identified and contacted. Further missions are planned to China and Indonesia in 1983 to negotiate with the governments and local institutions. A recent visit by a Chinese delegation to the Bank expressed a strong interest in participating in this study. The study was also

endorsed during Mr. Hultin's visit to Beijing in January 1983.

1.62 Evidently, because of the cost inherent in household surveys and the fact that this kind of research is attempted for the first time, this phase of the proposal refers only to one country, Peru. The choice of Peru among the five candidates is solely due to the fact that the research team was able to do more preparatory work there relative to the other countries, aided by Research Committee discretionary funds (RPO 672-98). It is our hope that as experience and preparation proceeds with the other countries that have shown interest in the proposal they will be gradually phased in. It is also hoped, that the proposed research project on the consequences of educational expansion will also use Peru as a country case so that we may be able to study the effect of education across the entire urban sector. In order to put the informal sector issue in perspective, some information is given below for all the countries which have been considered for this research project including those that do not make part of the research proposal in hand.

1. Ivory Coast

1.63 The Ivory Coast is included among the countries to be eventually investigated for a number of reasons. First of all it has a sizeable and rapidly growing informal sector within which the labor force is distributed over a number of activities. Table 1.1 below shows the most recent estimate of the overall distribution of the labor force.

Table 1.1 Ivory Coast. Employment by Economic Activity and Type of Sector, 1980

<u>Economic Activity</u>	<u>Type of Sector</u>		
	<u>Modern</u>	<u>Traditional</u>	<u>Total</u>
Agriculture	71,000	2,000,000	2,071,000
Non Agriculture	357,000	430,000	787,000
Total	428,000	2,430,000	2,858,000

Source: Based on information supplied by the Office National de Formation Professionnelle.

We can imply from this that the urban informal sector in the country as a whole has an importance in terms of employment equal to that of the formal sector.

1.64 More detailed information is known about the labor force in Abidjan resulting from ILO survey work in the early 1970s' (Joshi, Lubell and Mouly, 1974). It was estimated that in 1970, around 47,000 individuals in this city worked in the informal sector out of a total of 153,000 and that this sector's share had risen from 28 percent in 1965 to 31 percent in 1970. Table 1.2 presents the breakdown of informal sector employment in Abidjan by sector and labor force status.

Table 1.2 Percentage Distribution of Informal Sector Employment in Abidjan by Sector and Labor Force Status, 1970

Economic Activity	Wage and Salary Earners	Self-Employed and Unpaid Household Workers	Total
Agriculture, Forestry, Fishing and Hunting	3.2	3.2	6.4
Manufacturing, Handicrafts, Power and Construction	14.4	17.6	32.0
Trade and Services	28.7	33.0	61.7
All Sectors	<u>46.3</u>	<u>53.8</u>	<u>100.0</u>
Number (000's)	21.76	25.25	47.0

Source: Joshi, Lubell and Mouly (1974), Table 2.5, page 2-17.

In general the urban informal sector is less dominated by self-employed petty traders than is the case in most other developing countries:

industrial activities employ about a third of the informal sector labor force and almost a half earn wages or salaries. This may be contrasted with the situation in, say, Jakarta where the great bulk of the informal sector is self-employed. Although the proportion of self-employed workers was roughly constant between 1965 and 1970, there appears to have been a shift away from informal services towards informal manufacturing: the share of services in informal employment falling from 65.5 percent in 1965 to 61.7 percent in 1970 while the share of manufacturing rose from 27.6 percent to 32.0 percent over the same period. Informal industry in Abidjan is spread over many activities among which textiles, wood products, vehicle repair and construction are particularly important.

1.65 There is very little information on differences in wage rates between the formal and informal sectors although one rough proxy is the ratio of value added per worker in the two sectors in the same industry. In 1970 this varied between 0.11 and 0.95 in different manufacturing industries and was 0.23 for manufacturing, handicrafts and construction as a whole.

1.66 Like many other developing countries the Ivory Coast has experienced very high rates of open unemployment in its urban areas. In 1970 it was estimated that out of a total urban labor force of 490,000 some 115,000 were economically active and without work resulting in an overall unemployment rate of 23.5 percent. For Abidjan alone, the corresponding rate was 20.0 percent. Such high rates guarantee that a random household survey will pick up plenty of data on unemployment and search. They also suggest that the informal sector may not be as accessible for unemployed workers as much theoretical literature suggests. (e.g., Fields, 1975).

1.67 A third reason for selecting the Ivory Coast is that there should be a reasonable distribution of educational attainment within the informal sector labor force. Although direct data on this is lacking, one may note that while the illiteracy rate among persons aged 15 years or older was 58.8 percent for the overall Ivory Coast population in 1980 (UNESCO, 1981), in recent years primary school enrolments have almost achieved universality.

1.68 Fourthly, there is at the moment a household survey being planned in the Ivory Coast and the Bank's Development Research Department is involved in this. Linking with and complementing this work could prove useful and result in both greater efficiency and economy.

2. Upper Volta

1.69 Very little evidence exists on the economic effects of education in Upper Volta. During a recent EDC mission, Psacharopoulos calculated rates of return on the basis of partial sets of earnings data from the public sector and a series of private sector interviews. Social rates of return calculated on the basis of 1982 data were between 15 and 20 percent. The nature of the data used for calculating these rates of return clearly points to the necessity for a coverage of education-relationships which goes well beyond the formal sector. In 1975, employment in this sector amounted to only 1.5 percent of the country's economically active population. The vast majority of, at least primary, school leavers do not enter the formal sector but are agricultural or informal sector workers, emigrants or are unemployed. At present nothing

is known about the economic performance of school graduates in Upper Volta's agricultural sector and despite an ILO study of the informal sector there is again no knowledge of the educational dimension. At the same time that the economic effects of schooling are unknown, there are plans to significantly expand primary enrollments over the next two decades.

1.70 Any consideration of the economic effects of education in Upper Volta require an acknowledgement of the importance of international migration, particularly to the Ivory Coast. It is estimated that 70,000 persons depart each year and according to the 1975 Census, the level of education is closely related to the decision to migrate. This resulting loss of educated people is not, however, regarded as totally negative. Recorded migrant remittances from abroad in 1981 amounted to nearly one-half of the country's official exports of goods and services. In addition it is estimated that perhaps a half of gross migrants return each year. To the extent those people have learned some skills in the foreign country, they contribute to the future development of the domestic economy.

1.71 There are, then, a number of good reasons for including Upper Volta in a study of the effect of education in the informal sector:

- (a) the ratio of formal sector employment to the total labor force is one of the smallest in the world,
- (b) there already exists some background work on the informal sector done by the ILO,
- (c) the country is one of the least researched in terms of education and employment,

- (d) the Bank has committed itself to a major emphasis on education in future lending,
- (e) by linking research on both the Ivory Coast and Upper Volta there is a chance of capturing the interesting effects of education on emigration and subsequent economic performance.

3. Peru

1.72 In recent years, the number of formal sector jobs has not kept pace with population increase in the urban centres of Peru. A result has been the growth of the informal sector especially in the 'pueblos juvenes'. Existing literature on this sector in Peru is mostly descriptive and anthropological (Osterling 1981, Scott MacEwen 1981, Wendorff 1979), though Webb (1977) made estimates of informal sector income for the early 1970's. The recent emphasis given to the private sector in general by the Government has widened the interest and in 1982 the Ministry of Labor, in collaboration with the ILO, launched a household - small enterprise survey of 1500 units.

1.73 Two types of questionnaires were used, one for the head of the enterprise and the other for employees. While, unfortunately, there was no education question in the latter, the educational level of workers can be found retrospectively by matching these survey results with those of the general household survey tape. This operation and the creation of a new merged tape is now underway, financed through the Bank's Research Committee's proposal-preparation funds. (RPO 672-98. See Annex 0). Two uses will be made of the merged tape:

- a) the information provided will permit the measuring of variances of the variables we are interested in for inclusion in the major study and will thus allow a more rigorous sampling,
- b) a first documentation of the relationship between education and income in the informal sector will be provided. Given the total absence of information on this front, even this small survey will be useful in getting some feel for the relationships involved.

A

1.74 An enlarged and more detailed survey of informal sector workers, using the criteria listed in 1.47 has recently been discussed with the Ministry of Labor. This involves two stages. First, a household survey would be conducted in Lima in those neighbourhoods expected to contain a large proportion of informal sector workers. This would collect information on age, education, employment history, occupation, sector and size of enterprise in which the individual works. The information can then be analyzed and a second, more detailed survey made of selected individuals and of enterprises in what appear to be the most important subsectors. A sample frame for the first stage is currently being prepared in Lima.

1.75 Siting part of the research project in Peru will also enable us to link with and complement a major BID-financed ECIEL research project on the role of education in rural areas (the countries involved are Peru, Brazil, Mexico and Paraguay). The specific objective of this study is an analysis of changes in productivity of small and medium sized farm units, as a result of changes in educational processes. Because of Bank interest in the results of this study, EDC is providing a small time input in monitoring its progress. Methodologically, our interest is in the contemplated use of path analysis in which the innovative function of education is treated as an intermediate variable: first, as dependent on schooling and family characteristics; second, as independent and a determinant of agricultural production.

1.76 Depending on its actual design and intent, the study will hopefully increase our knowledge of the role of education in rural

environments. This will augment the evidence we already have on farming from Jamison and Lau (1982) and to the extent that rural nonfarming activities are covered, it will be a useful adjunct to our own work.

1.77 For a research program investigating the relationship between education and informal sector activity, there are several reasons why Peru would be a useful site:

- a) because of the relatively large size of the sector in the economy. Although exact estimates do not exist, most put the proportion of urban informal sector employment in the total labor force in the range of 30 to 40 percent (Wendorff, 1980, p.3);
- b) because of existing previous work on household surveys by the Ministry of Labor, there exists a good basis for a probabilistic sampling frame;
- c) because it will link to and complement the above mentioned ECIEL project on the role of education in the rural sector of the economy,
- d) because the Government is very interested in the topic of the proposed research. The Minister of Labor has expressed his endorsement in writing and the Ministry of Education is eager to see the research carried out.

4. Indonesia

1.78 The Central Bureau of Statistics periodically mounts two types of household sample survey which are of direct relevance to this study. The SAKERNAS is a national sample survey of labor market conditions and the labor force in urban and rural areas. The SUSENAS is a national sample multipurpose household survey of socioeconomic conditions in urban and rural areas. The most recent survey in 1978 is available on tape in the Bank. The next SUSENAS survey will be conducted in 1984, which allows time for the Bank to request the addition of more questions on the

respondents' educational background and time to plan the cognitive skill testing of a sub-sample. In addition, in 1976-78 the Ministry of Education mounted a national sample tracer survey of primary, junior and senior secondary school leavers based on a sample of urban and rural schools.

1.79 Before the Jakarta Informal Sector Survey was conducted with ILO support in 1975, there were only very rudimentary estimates of the size and significance of the informal sector in that city. Sethuraman (1976) used 1971 Census data and a 1968 survey of establishments to estimate that slightly more than half a million persons, or approximately 40 percent of Jakarta's 1971 labor force, were engaged in informal sector activities. From the same data it was estimated that informal sector employment, as a percentage of total employment, varied considerably by branch of economic activity.

1.80 While the focus of the Survey was not on the relationship of education to skills, productivity or job search it does, nevertheless, constitute important ground work upon which it will be possible to profitably build. The sample was of enterprises, not individuals or households, and covered manufacturing, construction, transport, trade and services. From the Survey it is possible to make a rough estimate of the size of the informal sector in Jakarta. This can be done by extrapolating from the count of 14,028 heads of informal sector enterprises. According to the survey report (Moir, 1978) this procedure results in an estimate of over 560,000 persons. This is, of course, only heads of enterprises in the five activities listed above and excludes all other informal sector participants. The informal sector is thus seen as a major source of employment in Jakarta.

1.81 With respect to schooling, the Survey showed that 20 percent of the men and 50 percent of the women had no formal education. The informal sector participants had received fewer years of schooling than characterized the Jakarta labor force as a whole. Some had informal education in the form of learning job-related skills from neighbors, relatives or friends.

1.82 In addition to the basic assistance which the Jakarta Informal Sector Survey could provide to the research proposed, there is another reason for our desire to eventually include Indonesia as a research site. The 1980 Population Census (for which 5% use tapes are now available) included for the first time an employment status question which contains two self-employment categories. These are: (1) self-employment, and (2) self-employment assisted by family member/temporary help. Because of the existence of this question in the Census, it will be possible for us to take advantage of a very sophisticated sampling frame and to focus directly on individuals who have identified themselves in terms of self-employment. The director of the Bureau of Analysis and Development (Central Bureau of Statistics), is aware of this research proposal and has agreed to participate by making the census tapes and sampling frames available to us. The Population Council has also agreed to assist us in the survey design and the training of survey takers. The University of Indonesia's Faculty of Social Sciences has been contacted and is eager to supply graduate students as survey workers and to participate in the project as needed.

Other central contacts are the Ministry of Manpower (DG for Manpower Development) and the Ministry of Education and Culture (BP3K). Thus data availability in Indonesia allows preliminary analyses to begin early. In addition, the existence of periodic re-surveys allows an opportunity to enrich the data base by adding specially designed questions required for the study into an existing national sample framework.

5. China

1.83 China has been added to the list of potential research sites following the interest shown in joining the project by a Chinese delegation which visited the Bank in November 1982, led by Professor Yang Xin Heng of Nankai University. The city of Tianjing has been suggested as the survey site and the University of Nankai as the collaborating institution. Small scale, exploratory studies of young self-employed workers in Tianjing were made in 1981. Extensions of these could provide a very useful comparative case study for the other research sites in addition to increasing the knowledge of the precise relationships between education and the recent growth of youth unemployment (Colletta, 1982) and between education and work performance useful for Chinese educational policy.

1.84 An education mission to China in January 1983 discussed the possibilities of the proposed study with the central authorities and confirmed their interest in participating in the research project.

D. Relationship to Other Research

1.85 Over the last ten years or so a great deal of theoretical and empirical attention has been given to aspects of what has come to be widely termed the informal or unprotected sector in the urban areas of LDC's. Very little attention, however, has so far been given to the effect of formal schooling on workers in this sector.

1.86 Development models of the 1950's and early 1960's tended to view the economies of poor countries as dualistic with a large low-productivity subsistence agricultural sector and a small but growing high productivity urban industrial sector (Lewis 1958). As rural-urban migration increased it gradually became obvious that not all migrants were being employed in the wage earning 'modern' sector and that large numbers were engaged in activities generally described as trading and services. However, this whole sector tended to be generally ignored in the development literature and in government policy up to the end of the 1960s. Where it was recognized it was assessed in generally negative terms and assumed to be a purely temporary phenomenon which would disappear as the modern sector expanded.

1.87 Perhaps the first scholar to give systematic attention to such peripheral employment activities was Hart (1971) who coined the term "informal sector". From fieldwork in Ghana, Hart emphasised what he regarded as the positive role which this sector plays in providing both income generating activities and many essential city services. This was also the view of the highly influential International Labor Office study of Kenya published in 1972 (ILO, 1972). The report concluded that the

informal sector was capable of providing more jobs and growing faster than the formal sector and the recommendations were largely designed to reduce discrimination against it.

1.88 A large amount of the theoretical and empirical work which has focussed on the informal sector in the last decade has concentrated at the enterprise level and on questions of size, composition, relationships with other sectors and the potential for growth. Other work has attempted to define the profile and characteristics of informal sector workers.

1.89 Despite these efforts, questions of the nature of skill acquisition and the effects of different training modes on informal sector workers have only in a few instances been tackled. One of the first scholars to survey the training background of small scale sector workers was Callaway in the 1960s in Western Nigeria (Callaway, 1964). What stood out in his research was the strength and extent of the apprenticeship system and the small numbers of people with formal schooling participating in that sector. By 1972, however, even in Northern Nigeria, an area of very low educational provision, Hinchliffe (1975) reported that 40 percent of employees/apprentices had had primary schooling.

1.90 Much of the most recent literature on skill acquisition and educational background of workers has come from studies initiated under the ILO's World Employment Programme. Some of these can be summarised quite briefly. The Nihan et. al. (1978a) study in Nouakchott, Mauritania showed that most training of informal sector workers occurs through apprenticeship with an entrepreneur in that same sector. They also found that employers trained within the informal sector ran their businesses at the same level of competence as those formerly apprenticed in the formal

sector. However, it is worth pointing out that the most successful group of entrepreneurs was the 5 percent or so who had attended courses at a vocational training institution.

1.91 In a related study by Nihan et. al. (1978b) of the informal sector in Lome, Togo apprenticeships within that sector were again shown to be the critical source of training. The same can be seen from Fowler's (1978) study of Freetown and Fapohunda's (1981) of Lagos. Outside of the ILO studies, King (1977) has also documented for Kenya the primacy of apprenticeship and on-the-job training in the direct formation of informal sector skills.

1.92 These studies tend to show low average levels of education for informal sector workers. However, what is required for a first analysis of the influence of education is a disaggregation by age group and also by activity. Electrical and mechanical repairers in their early 20's are likely to have a very different educational profile than 50 year old domestics. Arye (1976) shows, for instance, that in Kumasi, Ghana while only 13 percent of businessmen aged 46-50 years had had a middle school education, the percentage for the 20-25 years group was 80 percent. Hallak and Caillods (1981) point out another interesting feature from the above studies of Mauritania and Togo which is the educational superiority of employers compared to employees. This implies the possibility that formal education, while not being a provider of specific skills, in some way enables a transference to self employment. Why this may be so has not yet been researched.

1.93 While the large statistical surveys of the ILO have unearthed large amounts of data on the characteristics of informal sector workers there remains a large data gap on productivity and earnings differences and on the causes of these. Early studies such as Hinchliffe's (1975) of informal sector workers in Kano, Nigeria showed significant earnings differences between schooled and unschooled workers but no account was taken of individual variations other than schooling level. Activity of employment has been shown to be a major determinant of the effect of education on earnings in studies of San Salvador (PREALC 1978). The major attempt, so far, to fit earnings functions to informal sector workers has been made by Souza and Tokman (PREALC, 1978), again using data from San Salvador and also Santo Domingo. The conclusion was that while education 'explains' from 37 to 44 percent of the income variance of all workers, once the effects of employment status and size of establishment are controlled for, the effect of education is greatly reduced. Hallak and Cailloids (1981) point out, however, that it was not possible in this analysis to isolate within the informal sector those variables which are the most important in explaining incomes variations.

1.94 The results of surveys relating education, form of apprenticeship and capital assets to measures of entrepreneurial success tend to suggest that while primary schooling may be closely associated with higher productivity and earnings, the amount of capital assets is even more so. However, since education and capital accumulation are also highly correlated there remains a case for supposing that in one way or another, education plays a role in influencing the effectiveness of entrepreneurial activity.

1.95 What the statistical profiles of the informal sector labor force tend to show about worker skills is that most have been learned through an apprenticeship system, mainly in the informal sector itself but also in the formal sector, and few have resulted from specific vocationally oriented formal education programmes. These findings, however, say virtually nothing about the effects of basic education. The educational profile of informal sector recruits is increasing rapidly and that increase is the result of large amounts of expenditure. It becomes more and more important therefore to understand the effects of this expenditure. So far very little research indeed has been directly related to the issue of the effects of formal schooling on the behavior and output of informal sector workers.

1.96 Several pieces of research have confirmed that in many cases workers shift between sectors during their lifetime. While some learn skills in the formal sector and perhaps raise some capital, both of which are then put to use within the informal sector, others use part time work in the informal sector as a means of funding the search for a formal sector job. The ways in which education influences these types of behavior have again, however, received relatively little research attention. That which exists is centered around the notion of job search.

1.97 Job search models were first introduced into the development literature by Harris and Todaro (1970) and covered just two sectors - rural and urban. The result was to shift the emphasis in analysing unemployment away from demand deficiencies towards 'excess' supply resulting from restrictions to entry. Fields (1975) introduced into the

basic model what he termed the 'murky' sector and argued that the same expectational factors operated within the two urban labor markets as between the rural-urban areas. One of his conclusions was that, given that employers prefer to hire better educated workers, the education of an additional worker lowers the number of urban jobs available to the uneducated by one but reduces the uneducated labor force by more than one as a result of the downward effect on the probability of getting a job, and thereby reduces unemployment.

1.98 More recently Pinera and Selowsky (1978) have developed a more complex model of job search concentrating solely on the decision whether to remain unemployed and 'search' for a formal sector job or enter the informal sector. They argue that in the context of unemployment, wage differences between the formal and informal sectors and no barriers to entry to the latter, the wages of informal sector workers are likely to be different from the true marginal product of an additional educated worker to the labor force. Finally, Fallon's (1983) work on unemployment and search in Delhi suggests strong relationships between unemployment and household characteristics, and search and educational level.

1.99 The refinement of these tentative hypotheses and their further testing is another area in which a major study of education's role in the informal sector is required.

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Household Information *

A. Site Identification		Code	B. Survey Information	
(1)	(2)	(3)	(1)	(2)
A. 1. Province		6/ / /	B. 1. Name of Survey Taker	
A. 2. Strata		8/ / /		
A. 3. Region		10/ / /	B.2. Date of Survey	
A. 4. Municipality		12/ / /	B.3. Signature of Survey Taker	
A. 5. Village		14/ / /		
A. 6. Cluster Number			B.4. Name of Supervisor	
A. 7. Building Number			B.5. Date of Supervision	
A. 8. Household Number		15/ / / /	B.6. Date of Inspection (coding)	
A. 9. Number of Household Members		18/ / /		
A. 10. Number of Household Members over 10		20/ / /	B.7. Signature of Supervisor	
A. 11. Location or address:				

* This is a skeleton household questionnaire to be adapted to the research design of this project and the particular country circumstances in which it will be administered.

D. Sources of Household Income

Codes
 Wage 1
 Account 2
 Both 3

What are the sources of income of this household?
 (Place checkmarks in the appropriate boxes.)

Sources of Income	Wage Earner	Own Account	Wage and own account	
(1)	(2)	(3)	(4)	(5)
D. 1. Agriculture	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	22 <input type="checkbox"/>
D. 2. Industry/handicraft	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	23 <input type="checkbox"/>
D. 3. Sales	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	24 <input type="checkbox"/>
D. 4. Transportation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	25 <input type="checkbox"/>
D. 5. Services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	26 <input type="checkbox"/>
D. 6. Other work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	27 <input type="checkbox"/>
D. 7. Government	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	28 <input type="checkbox"/>
D. 8. Private pension & transfer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	29 <input type="checkbox"/>

D. 9. Of the sources of income listed in column 1, which is the main source of income? Go to

D. 10. Of the sources of income listed in column 1, in the case of an own account (self employed) worker, which source represents his main source of income?

[These will vary considerably from activity to activity and from country to country. The following is therefore only intended as a specimen outline]

For each activity

Production Account: Activity-----

Assets

	<u>Value</u>	<u>Quantity</u> (where relevant)	<u>Quantity</u>	<u>Age</u>	<u>Value</u>
Sales					
<u>plus</u>					
Own Consumption					
<u>less</u>					
Inventory of unsold output at beginning of period					
<u>plus</u>					
Inventory of unsold output at end of period					
= <u>Gross output</u>					
<u>less</u>					
Intermediate inputs (to be prelisted in each case)					
= <u>Value added</u>					
<u>less</u>					
<u>Gross wages paid</u>					
<u>less</u>					
Depreciation (to be imputed)					
= <u>Operating surplus</u>					

To be separately listed

F. Identification of Household Member

F1. Name of household member:..... 1 / 1/3/
 F2. Serial number of household member..... 22 / / /
 F3. Marital Status: Single - 1
 Married - 2
 Widowed or divorced -3 24 / /

G. Activities During the Past Week

Can you tell me what you have been doing for the past week, beginning yesterday....(name of day), then the day before yesterday....., 3 days ago, and so on.

G ₁ Day \ G ₂ Type of activity	G ₃ Em- ployed (at least 1 hour a day)	G ₄ Employ- ed but did not go to work	G ₅ Look- ing for work	G ₆ Attend- ing school	G ₇ Taking care of the home	G ₈ Other (retired, disabled, etc.)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Yesterday,.....	/ / ..hour(s)	/ /	/ /	/ /	/ /	/ /
Day before yesterday.....	/ / ...hour	/ /	/ /	/ /	/ /	/ /
3 days ago.....	/ / ...	/ /	/ /	/ /	/ /	/ /
4 days ago.....	/ / ...	/ /	/ /	/ /	/ /	/ /
5 days ago.....	/ / ...	/ /	/ /	/ /	/ /	/ /
6 days ago.....	/ / ...	/ /	/ /	/ /	/ /	/ /
7 days ago.....	/ / ...	/ /	/ /	/ /	/ /	/ /
(name of day)						
Total	/ / / / hour(s)	/ /	/ /	/ /	/ /	/ /
Card Column	25-27	28	29	30	31	32

I

J

(Block H to be asked only if there are no entries in columns 2, 3 and 4).

H. Attending School/Taking care of the house.

H₁. Have you looked for work during the past 3 months?

Yes / / No / /

33 / /

H₂. Why aren't you looking for work?

1. Taking care of the house / /
2. Attending school / /
3. Health reason / /
4. Not prepared to go to work (retired, too old, etc.) / /

34 / /

H₃. If a suitable job was available, would you accept it?

Yes / / No / /

35 / /

J.B. Employment History

J.B.1. At what age did you start working?
If I3.1 or I3.4 are ticked then to JB3

J.B.2. Have you ever been employed by anyone outside your household?
If Yes then give details of past employment history

Employer	Industry	Occupation	Dates From To	Monthly Wage	Permanent or Temporary

J.C. Training

J.C.1. Have you ever received formal training or undertaken an apprenticeship?
If Yes then give details

From	To	Description	
<p>J.D. <u>Unemployment History</u></p> <p>J.D.1. Have you ever been unemployed? If <u>Yes</u> then give details:</p>			
Spell	From	To	Method of Finance
1			
2			
3			
4			
<p>J.E. <u>Migration History</u></p> <p>J.E.1. Have you always lived in (present town)? If <u>No</u> then please give details;</p>			
From	Date	Rural/Urban	

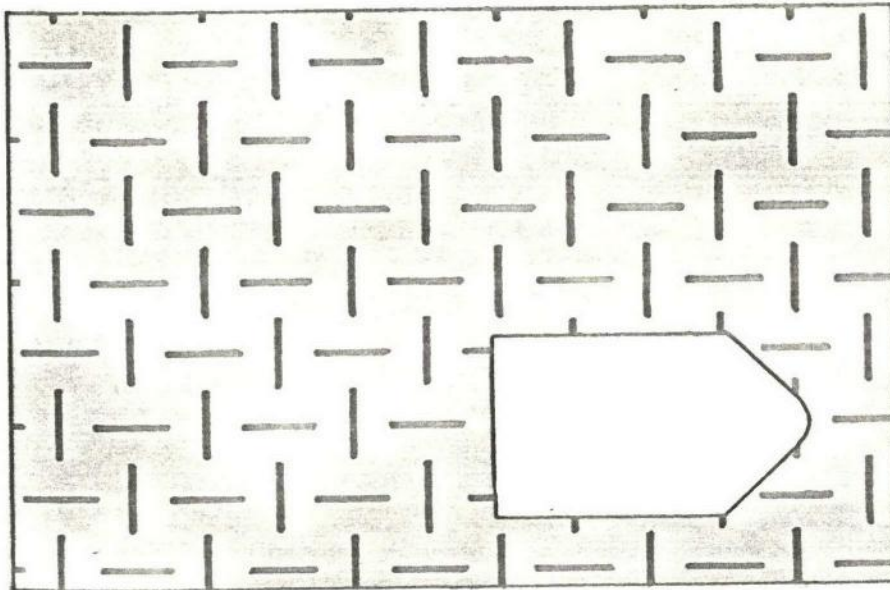
I. Employed	Card Column	J. Looking for Work	Card Column																																
I 1. Where do you work and what kind of work is your employer engaged in? At.....Type of work.....	36 <input type="text"/>	JA 1. How long have you been looking for work?months	64 <input type="text"/>																																
I 2. What position do you hold or what type of work do you do?.....	38 <input type="text"/>	JA 2. Are you looking for full-time or part-time job? 1. Full-time <input type="checkbox"/> 2. Part-time <input type="checkbox"/>	66 <input type="text"/>																																
I 3. Job status: 1. Worker or government employee <input type="checkbox"/> 2. Businessman without employees <input type="checkbox"/> 3. Employed by relative without pay <input type="checkbox"/> 4. Social worker <input type="checkbox"/>	41 <input type="text"/>	JA 3. From what source have you usually received income for your daily needs during this period? 1. Work 3. Family or friends 2. Sometimes work 4. Other	67 <input type="text"/>																																
I 4. How many hours did you work at this job during the past week?.....hours.	42 <input type="text"/>	JA 4. Have you ever worked before? Yes <input type="checkbox"/> No <input type="checkbox"/>	68 <input type="text"/>																																
I 5. Is the job you held during the past week the same job you held during the last 3 months? Yes <input type="checkbox"/> No <input type="checkbox"/>	44 <input type="text"/>	Other Income and Expenditures During the Past Month																																	
I 6. What was your net income from this job during the past month? (Do not include income from agriculture listed in block E, column 8.) - In cash Rp..... - In goods Rp..... - Total Rp.....	45 <input type="text"/> (hundreds)	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2" style="text-align: center;">Income</th> <th colspan="2" style="text-align: center;">Expenditures</th> </tr> <tr> <th style="text-align: center;">Type</th> <th style="text-align: center;">Amount Rp.</th> <th style="text-align: center;">Type</th> <th style="text-align: center;">Amount Rp.</th> </tr> <tr> <th style="text-align: center;">(1)</th> <th style="text-align: center;">(2)</th> <th style="text-align: center;">(3)</th> <th style="text-align: center;">(4)</th> </tr> </thead> <tbody> <tr> <td>1. Pension (Retired)</td> <td></td> <td>1. Remittances sent</td> <td></td> </tr> <tr> <td>2. Remittances received</td> <td></td> <td>2. From deposits or savings</td> <td></td> </tr> <tr> <td>3. Withdrawal from deposits or savings</td> <td></td> <td>3. Other (loans, payments, lotteries, investments, other funds)</td> <td></td> </tr> <tr> <td>4. Other, (borrowing money, etc.)</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;">Total</td> <td style="text-align: center;">.....</td> <td style="text-align: center;">Total</td> <td style="text-align: center;">.....</td> </tr> </tbody> </table>		Income		Expenditures		Type	Amount Rp.	Type	Amount Rp.	(1)	(2)	(3)	(4)	1. Pension (Retired)		1. Remittances sent		2. Remittances received		2. From deposits or savings		3. Withdrawal from deposits or savings		3. Other (loans, payments, lotteries, investments, other funds)		4. Other, (borrowing money, etc.)				Total	Total
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I 7. Do you have any jobs in addition to this job? Yes <input type="checkbox"/> No <input type="checkbox"/> (proceed to line I 10)	50 <input type="text"/>		69 <input type="text"/>																																
I 8. How many hours did you work last week on all other jobs?.....hours	51 <input type="text"/>		74 <input type="text"/>																																
I 9. What was your net income from all other jobs during the past month? (Do not include income from agriculture listed in block E, column 8.) - In cash Rp..... - In goods Rp..... - Total Rp.....	53 <input type="text"/> (hundreds)																																		
I 10. How much income did you receive during the past month from land and house rentals and interest payments?	58 <input type="text"/>																																		
I 11. If you have the time available would you be willing to accept additional work? Yes <input type="checkbox"/> No <input type="checkbox"/>	63 <input type="text"/>																																		

A. General Ability — Raven's Progressive Matrices Rationale

The geneology of the Raven's Progressive Matrices (or RPM) can be traced back to the investigations of Spearman into the nature of intelligence. It was his view that an undifferentiated concept of intelligence was less than adequate in describing cognitive abilities. Starting with the Standard RPM series, designed to sample the general range of ability, we will be able to provide a means to assess an adult's present ability to perceive and think clearly, irrespective of past experiences or present ability for verbal communication. The scales can be described as "tests of observation and clear thinking" and have been widely used cross-nationally with high levels of reliability.

— A —

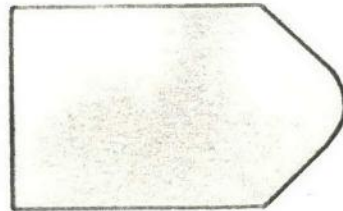
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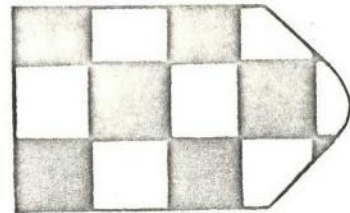
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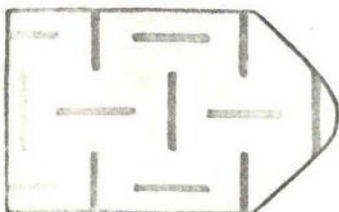
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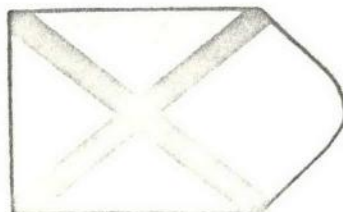
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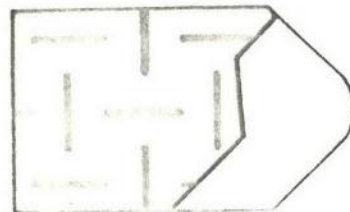
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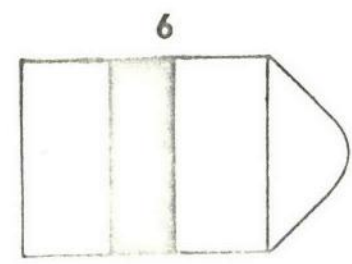
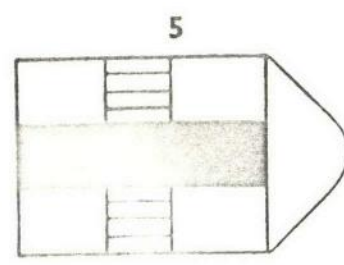
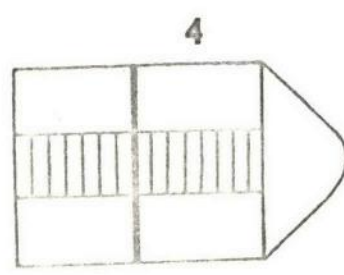
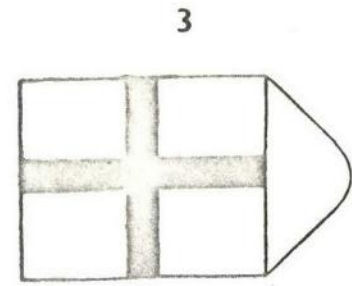
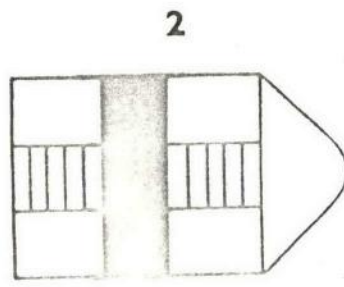
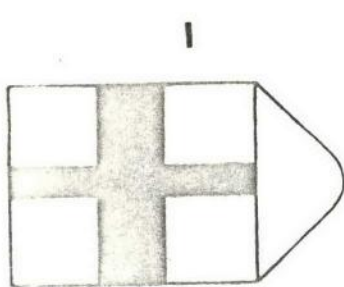
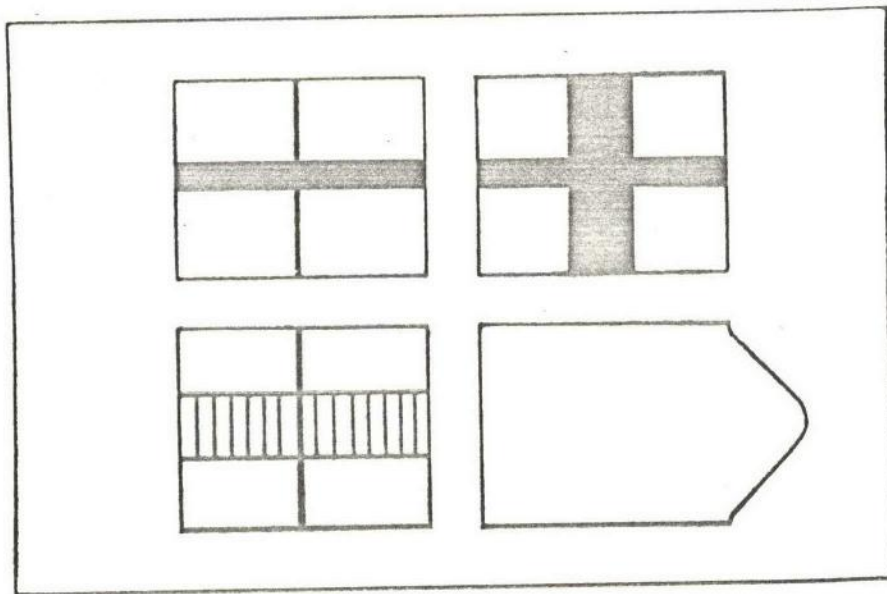
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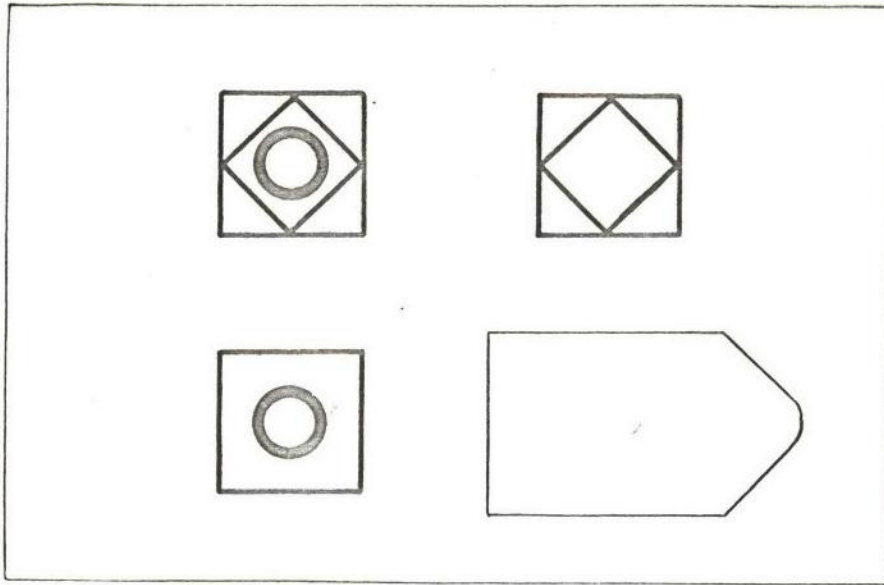
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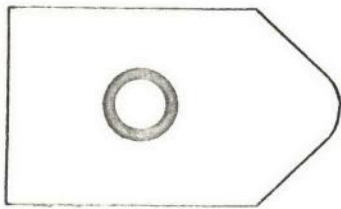
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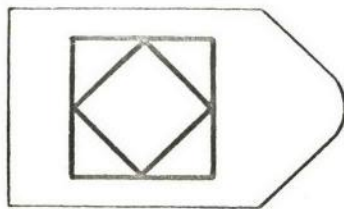
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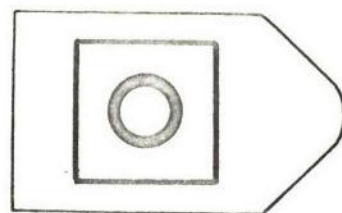
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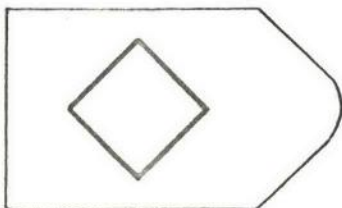
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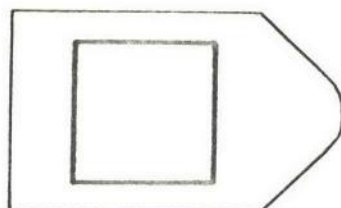
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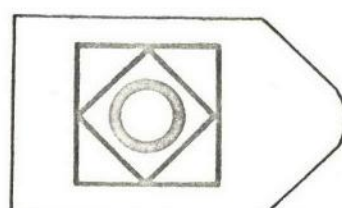
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6



B. Overall Modernity - the Short Form Rationale

Each of these items correlates well with the larger Overall Modernity scales in each of the six countries in the Inkeles (Harvard) study, at a highly significant level. Moreover, each of the questions was strongly correlated with the independent variables of education, urban experience and occupation. These items have been extensively incorporated in cross-cultural research. Since it is more or less inevitable that one or another question from a cross-national set may not serve well in a particular country, we have identified alternative questions for each of the above. Indeed we may ask the suggested alternate question as well, thus providing a pool of items which are theoretical equivalents, from which we may select those that are best understood and most discriminating in this particular study.

Purely Attitudinal Items^a

1. Have you ever (thought over so much) gotten so highly concerned (involved) regarding some public issue (such as . . .) that you really wanted to do something about it?
Frequently / Few times / Never
2. If schooling is freely available (if there were no kinds of obstacles) how much schooling (reading and writing) do you think children (the son) of people like yourself should have?
3. Two 12-year-old boys took time out from their work in the corn (rice) fields. They were trying to figure out a way to grow the same amount of corn (rice) with fewer hours of work.
The father of one boy said: "That is a good thing to think about. Tell me your thoughts about how we should change our ways of growing corn (rice)."
The father of the other boy said: "The way to grow corn (rice) is the way we have always done it. Talk about change will waste time but not help."
Which father said the wiser words?
4. What should most qualify a man to hold high office?
Coming from (right, distinguished, or high) family background
Devotion to the old and (revered) time-honored ways
Being the most popular among the people
High education and special knowledge
5. Which is most important for the future of (this country)?
The hard work of the people
Good planning on the part of the government
God's help
Good luck
6. Learned men (scholars, scientists) in the universities are studying such things as what determines whether a baby is a boy or girl and how it is that a seed turns into a plant. Do you think that these investigations (studies) are:
All very good (beneficial) / All somewhat good (beneficial)
All somewhat harmful / All very harmful
Some people say that it is necessary for a man and his wife to limit the number of children to be born so they can take better care of those they do have (already have).
Others say that it is wrong for a man and wife purposely (voluntarily) to limit the number of children to be born.
Which of these opinions do you agree with more?
7. Which one of these (following) kinds of news interests you most?
World events (happenings in other countries)
The nation
Your home town (or village)
Sports
Religious (or tribal, cultural) events (ceremonies) or festivals
8. If you were to meet a person who lives in another country a long way off (thousands of kilometers / miles away), could you understand his way of thinking?
Yes / No

9. Do you think a man can be truly good without having any religion at all?
Yes / No

Behavior-Information Items

10. Do you belong to any organization (associations, clubs), such as, for example, social clubs, unions, church organizations, political groups, or other groups? If "Yes," what are the names of all the organizations you belong to? (Scored for number of organizations.)
11. Would you tell me what are the biggest problems you see facing (your country)? (Scored for number of problems or words in answer.)
12. Where is (in what country is the city of) Washington / Moscow? (Scored correct or incorrect.)
13. How often do you (usually) get news and information from newspapers?
Everyday / Few times a week
Occasionally (rarely) / Never

WORLD BANK RESEARCH PROGRAM
PROJECT PROPOSAL

DATE OF SUBMISSION:
Revised Feb. 11, 1983
January 14, 1983

PART I. PROJECT IDENTIFICATION

1. TITLE: Education and Informal Sector Employment	
2. DEPARTMENT(S) RESPONSIBLE: Education Department	3. STAFF PARTICIPATION: (a) Principal Supervisor: G. Psacharopoulos, EDC (b) Others Responsible:
4. NO. OF CONTRACTS: Six	5. ESTIMATED TOTAL COST: \$291,800
6. ESTIMATED TOTAL STAFF TIME REQUIRED (WEEKS): Professional: 19 Assistant:	

PART II. COORDINATION AND APPROVAL

1. INTERDEPARTMENTAL COORDINATION

Department	Name and Signature	Support Project	No Objection	Do Not Support Project - Comments Submitted
Latin America and Caribbean Projects	R. Johanson	<input checked="" type="checkbox"/>		
Western Africa Projects	A. Verspoor	<input checked="" type="checkbox"/>		
East Asia & Pacific Projects	A. ter Weele	<input checked="" type="checkbox"/> (see memo)		
Development Research Department	E. J. Stoutjesdijk	<input checked="" type="checkbox"/>		

2. DEPARTMENTAL APPROVAL

Division Chief's Signature _____ George Psacharopoulos, Head, Research Unit Type Name	 Department Director's Signature _____ Aklilu Habte, Director, EDC Type Name
--	--

PART III. IMPLEMENTATION

1. DATE WORK TO START: April 1983	2. DATE FIRST DRAFT EXPECTED: September 1985	3. DATE FINAL REPORT EXPECTED: December 1985
4. IMPLEMENTATION METHOD:		
(a) <input checked="" type="checkbox"/> Bank Staff	Names G. Psacharopoulos (P. Mook)	
(b) <input checked="" type="checkbox"/> Individual Consultants	Central consultants to be appointed	
(c) <input checked="" type="checkbox"/> Developing Country Contractor/Institute	Centro de Investigacion, Universidad de Pacifico, Lima	
(d) <input type="checkbox"/> Developed Country Contractor/Institute		
(e) <input checked="" type="checkbox"/> Conference or Seminar	Lima, Peru	
5. PROPOSED LIAISON WITH OPERATING DEPARTMENTS:		
Western Africa Projects and Latin America Projects DRD, Res. Mission, Lima		
6. REPORTS EXPECTED IN THE FIRST YEAR:		
Interim Progress Report, July 1984		

PART IV. FINANCIAL AND STAFF RESOURCES

1. DOLLAR COSTS (ESTIMATED DISBURSEMENTS BY FY):	FY 83	FY 84	FY 85	After FY	Total
(a) Consultants Fees	20,000	100,000	16,200		136,200
(b) Travel	3,600	13,200	7,200		24,000
(c) Data Processing	-	10,000	-		10,000
(d) Other Contractual Services	10,000	80,000	18,800		108,800
(e) Contingencies	-	-	12,800		12,800
Total	33,600	203,200	55,000		291,800
2. STAFF REQUIREMENTS (ESTIMATED STAFFWEEKS BY FY):					
(a) Professional	3	12	4		19
(b) Assistant (included in 1(d) above)					
3. STAFF COSTS 1/					
(a) Professional	8,700	37,200	13,200		59,100
(b) Assistant					
4. TOTAL COST: (1 + 3)	42,300	240,400	68,200		350,900

1/ Staffweeks should be costed as follows: (\$'000 per staffweek): Professional: FY83 - 2.9; FY84 - 3.1; FY85 - 3.3; FY86 - 3.6.
Assistant: FY83 - 1.3; FY84 - 1.4; FY85 - 1.5; FY86 - 1.6.

DRAFT
(Revised 1/11/83)
(Revised 2/11/83)
(Revised 3/4/83)

EDUCATION AND INFORMAL
SECTOR EMPLOYMENT

A RESEARCH PROPOSAL

(RPO 672-98)

George Psacharopoulos
Principal Investigator

The World Bank
Education Department
Operations Policy Staff
March 1983

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ABSTRACT

0.01 This research proposal addresses an issue of major importance for Bank operations that has not so far been analyzed in the existing literature: What is the economic performance of those graduates of the school system who are engaged in the so-called "informal sector" of the economy of developing countries?

0.02 The existing empirical evidence on the economic role of education has been based almost exclusively on samples of government and large firm employees. This treatment would be valid if wages for similar kinds of labor were equalized across sectors and activities by means of perfect mobility. In such a case it would be immaterial which sector is sampled in order to assess the economic effect of education. But several studies (the most recent being Byerlee, Eicher, Liedholm and Spencer, 1983, for Sierra Leone) and casual observation of developing country labor markets suggests that such equalization does not take place. Minimum wage and other labor legislation, unionization and other institutional factors characterize particular labor markets. Due to these restrictions to entry, wages are above those levels needed to clear such markets and there is an excess supply of labor to them.

0.03 In most developing countries, however, the majority of urban labor ends up working in labor markets where legislation and institutional factors are less binding and hence where restrictions to entry are less. This section of the labor force usually includes wage labor working in small, non-unionized and non-registered enterprises, self-employed labor and those in family businesses. In these activities earnings perform more

of a clearing role and therefore reflect better the relative scarcity or abundance of different types of labor and hence their contribution to the economy.

0.04 A previous Research Committee project on "Farmer Education and Farm Efficiency" has significantly contributed to our knowledge on the effect of education on rural productivity. A more recent Research Committee project on the "Labor Market Consequences of Educational Expansion" is generating results on the effect of education in the large firm sector of the economy. The proposed project aims at filling the knowledge gap on the economic performance of the educated who are "employed" in the non-farm, non-modern sector in developing countries.

0.05 This gray area of economic activities, often referred to as the "informal sector", accounts for more than one half of total urban employment in many poor countries. The proportion of new flows of graduates who will seek first entry into these activities is even higher. Consequently, any educational policy which disregards conditions in this sector of the economy will miss an important empirical dimension of the problem.

0.06 Much of the literature debate surrounding developing country labor markets refers to "sectors" - rural farm, rural non-farm, urban formal, urban informal. The terms "informal" and "formal" are also used in this proposal as a shorthand for delineating those activities in which earnings have and do not have a market clearing function, respectively. These should not, however, be regarded as strict compartments for two reasons. Firstly, in urban areas the labor market conditions relating to different activities can be placed on a continuum ranging from those in which earnings are solely a result of competitive forces to those in which

institutional factors are clearly dominant. Secondly, many individuals may work in more than one sector at any one time and even more important, may move between sectors (and unemployment) over time. While concentrating attention on those currently working at the competitive end of the continuum i.e., in informal sector activities, the project will inevitably also consider other parts of the continuum and the ways in which individuals move between them.

0.07 The proposal addresses one central research question, the answer to which would enhance existing knowledge on the socio-economic role of schooling in developing country settings: Do the more educated engaged in informal sector activities, other things being equal, "perform" or behave differently from the less educated? The performance test goes beyond the traditional earnings differential and extends to small enterprise efficiency and job search behaviour.

0.08 The research design is primarily based on household data so that in addition to informal sector workers a number of participants engaged in less competitive activities can also be included. This is important in view of addressing labor supply questions, especially during the job search process. To complement the household data, small enterprise surveys in activities which have been shown to contain many of the self-employed will also be made.

0.09 Preparatory work has identified five potential research sites for this project: Upper Volta, Ivory Coast, Peru, Indonesia and China. The criteria used were a combination of the existence of a large informal sector in the particular country and previous work on it as to allow cost effective sampling; the importance of the country for Bank operations regarding human resource development; the willingness of the Government to

support the research project; and the existence of local institutions for research collaboration. For timing and budgetary reasons, the present phase of the research refers only to Peru. Preparatory work on the Ivory Coast, Upper Volta, China and Indonesia continues so as to possibly include them at a later stage as a follow up to the proposal in hand.

I. MAIN ISSUES AND ANALYTICAL FRAMEWORK

A. Introduction

1.01 There are always potential dangers in establishing exclusive categories for purposes of classification. In labor market studies of developing countries, the terms "formal" and "informal" sector have emerged. The definition of these terms and their usefulness have been debated for a decade. Quite clearly, on any of the conventional definitions the activity of a small family business is very different to that of large scale manufacturing. At the same time, many activities fall between these two extremes and are spread out along a continuum. As a first stage in conceptualizing the issues in this research proposal, however, some form of categorization is useful since the focus is on particular types of activity and their associated labor market. The distinction used in this proposal to categorize workers into formal and informal sectors is the extent to which there is a tendency in the activity in which they work for the wage (or earnings) to perform a clearing role in the labor market. (See Harberger, 1971).

1.02 Much of the information used to assess proposed education investment projects in developing countries has been drawn from statistical data on formal sector wage employment. Although it is true that the highly qualified will most likely eventually find modern, formal or public sector jobs, it has become clear in recent years that a significant proportion of all individuals who have received some schooling can expect to spend at least part of their working lives outside such "organized" sectors. In rural areas this means working in either farm employment or off-farm employment (Leiserson and Anderson, 1980). Much valuable research has been

undertaken by the Bank and other institutions and individual researchers on the complex relationship in rural settings between education and agricultural productivity (e.g., Lockheed, Jamison and Lau 1980, Jamison and Lau 1982). And, of course, work is continuing on the effect of education among those employed by formal sector establishments (e.g., Knight and Sabot 1981). However, there is a notable dearth of research on education and employment in both the informal off-farm sector and the urban informal sector.

1.03 Interest in this topic within the Bank, therefore, derives from a lack of assurance on the economic performance of graduates of the school system across the whole labor market. Manpower surveys and the resulting forecasts of skill needs in developing countries have been based largely on data representative of the urban formal sector. ^{1/} Similarly, cost-benefit studies have typically used data referring only to those workers employed for wages and salaries in the formal private sector and in the public sector. ^{2/} However, in the case of most developing countries this population is a small fraction of the country's labor-force. In the cities alone, over one half of workers are commonly employed in the informal sector, yet little is known about the effect which schooling has on their performance. While much has been written about the effects of schooling on occupational attainment, earnings potential, job productivity and other issues, the focus has been on the formal sector. Bowman (1980, p.13) has described this situation very clearly:

^{1/} For example, see Government of Malaysia, (1973).

^{2/} See Psacharopoulos (1973), Appendix B for the earnings sources of 28 cost benefit studies in developing countries.

"In reading the results of ... rate-of-return investigations of education ... it is important that we ... remind ourselves of the systematic bias ... against the inclusion of returns to education in nonwage activities. Most of the rate of return studies are based on data of wage and salaried persons only. No one knows how much of a contribution to growth may derive from a better educated population of independent entrepreneurs."

1.04 Clearly, as the informal sector grows and becomes the sector in which very many school leavers will seek their first employment, it becomes increasingly important to analyze the economic effects of schooling in this sector if investment decisions in education are to be linked to an accurate assessment of economic returns.

B. Goals and Objectives

1.05 The central objective of this research proposal is to assess the effects of education on those individuals working in the informal sector. Analysis of this sector, however, is made in the context of the total urban labor market. At any one time, an individual may be unemployed, combining household domestic and economically productive work, employed part time in the informal sector while looking for a formal sector job, working full time in the informal sector and regarding this as either a temporary or permanent situation, or working full time in the formal sector. Within the informal sector itself, members may be apprentices, wage employees, self employed or non-wage workers in a household enterprise. Over time, an individual can be expected to move between several of these states, especially during the early years of his labor force participation.

1.06 As a result of this complexity, the proposal is divided into two parts. First, it concentrates on analysing the effects of education on the economic performance of those individuals who at one point in time are engaged in the informal sector as wage earners, household workers or self employed. The underlying approach of this part of the proposal is human

capital theory. Second, while still concentrating on those working in the informal sector, the proposal aims to analyse the factors involved in an individual's (or household's) choice of labor market strategy in the context of the options described above. This part of the research will be based on models of job search and household decision making.

C. Research Focus

1.07 Prior to a presentation of the methods to be used to approach the research goals, some discussion of the data types and the units of analysis is required.

1.08 The person not engaged in the formal sector but seeking economically productive employment can be assumed to allocate his (her) time across different activities i.e., self-employment, wage employment or job search (including open unemployment) such that the expected returns from the last hour in each are equated. If, alternatively, instead of focussing on decisions made by the individual, attention is placed on the household, the issue is again one of optimal time allocation but in this case it is the expected returns to the household which are equated.

1.09 If, for simplicity, it is assumed that the individual (household) has no innate preferences or tastes in favor of or against any of these activities then the expected marginal value of an additional hour of self-employment, the net hourly wage of employees and the expected marginal value arising from an additional hour of search will all be equal.

1.10 In practice, there may be systematic differences in these values for a given individual or between apparently identical individuals for several reasons including different non-monetary or psychic costs and benefits associated with each activity (e.g., working conditions), restrictions set by household domestic work, barriers to entry, lack of information and errors in decision making. Across individuals with different characteristics the list must be lengthened. Not only will less productive workers have lower earnings but so also will those who suffer the effects of discrimination. Careful standardization is thus required before one can seriously attempt to isolate the effects of education on earnings. Similarly, the impact of education on expected returns to job search and hence on search behaviour must be carefully separated from the influence of other variables.

1.11 Some of the difficulties mentioned above could be avoided if it were possible to directly observe the effect of the educational or training levels of workers on the performance of the enterprises (including one-person businesses) in which they are employed. One, at first sight, appealing approach is to directly estimate a production function of the form:

$$Q = f(K, N, H) \quad (1)$$

where Q is output, K is physical capital input, N is input of uneducated labor and H is a suitable measure of the service flow from educated labor. In agricultural studies, the Cobb-Douglas function has usually been favored

(Lockheed, Jamison and Lau, 1980), although alternatives have also been proposed. ^{4/} The central aim of such an approach is to isolate the effect of H on Q. In some studies this has been interpreted as the difference in productivity between educated and less educated labor while others have seen it as the effect of education in pushing the enterprise closer to its technological frontier. Important extensions of this latter approach have examined the impact of education on the proximity that farmers achieve to their profit maximization positions (allocative efficiency) by the use of a profit function derived from a Cobb-Douglas production function (Jamison and Lau 1982).

1.12 There are, however, a number of good reasons why it would be very unwise to use production function studies as the primary approach to analyze education-productivity relationships in the urban informal sector. Firstly, the bulk of informal activities are concentrated in services and trading within which it is notoriously difficult to define a real output measure and to specify a production function in the normal sense. Secondly, the wide spread of secondary i.e. industrial activities in the informal sector means that any general survey will pick up only a very limited number of observations in most activities. If sufficient observations were obtained in a small number of activities then the results, although interesting in themselves, could well be atypical of the informal sector as a whole. These comments do not rule out the use of production functions altogether and, where there appear to be

^{4/} In aggregate production function studies, alternatives such as the single and two level CES functions have also been used.

concentrations of particular activities, such studies may be a useful adjunct to other data sources.

1.13 The central focus of the research proposal is, therefore, directed towards measuring the effect of education and training and testing a number of related hypotheses with the aid of data taken from observations on individuals within households.

1.14 While the survey of households will concentrate on picking up information on informal sector workers, it will also cover some working in the formal sector and is likely to include some unemployed persons. It will also pick up information on women who combine household domestic work with part time employment. In this case, part time employment in the informal sector may not be combined with job search but is a direct response to the restrictions set by domestic responsibilities. All this comparative information should prove extremely valuable for two reasons. Firstly, information across the urban labor market will give a view of the market as a whole and will therefore provide a base for analyzing determinants of labor supply to different sectors. Secondly, as explained below, there are certain hypotheses regarding behaviour in different parts of the labor market that are particularly interesting.

1.15 The problems of obtaining reasonably accurate income information at the household level cannot, however, be disregarded and it may also be necessary to construct some expenditure data as a check. In addition, any factors which lead to substantial seasonal variation in earnings will need to be very carefully allowed for.

D. Research Questions and Methodology

1) The Effect of Education and Training on Observed Earnings and Productivity

1.16 One way of isolating the effects of education on the productivity of those engaged in the informal sector is to follow Schultz's (1975) distinction between (a) worker or production efficiency i.e. how well a task is performed and (b) entrepreneurial or allocative efficiency i.e. decisionmaking ability.

1.17 Prior to that discussion, however, it is useful to make a somewhat crude division of informal sector activities, which are very heterogeneous, into various categories. As a start, five categories can be identified together with the respective skill levels associated with them.

- a) Craft activities: unchanging technology, manual-artistic skills unrelated to formal schooling, e.g. carving, basket work.
- b) Simple consumer goods: low skill, repetitive process, identical product, e.g. paraffin lamps from tin cans.
- c) Services: managerial skills from the very simple to the complex, e.g. hawking, food stalls, money lending.
- d) More sophisticated consumer goods: manual, trade skills, e.g. carpentry, welding.
- e) Workshop production: high level of manual skill e.g. machining intermediate and simple capital goods.

1.18 Each of these categories of activities requires different levels of skills and abilities for both the wage earner/apprentice and the self employed/employer. Each also faces different demand conditions and possibilities of market expansion. For (a), (b) and much of (c), possibilities of dynamic growth involving increases in labor productivity are slight and additional numbers of those participating often simply lead

to smaller market shares. It is those enterprises in categories (d) and (e) which are likely to be more capable of finding or creating new markets, competing directly with formal sector enterprises or increasing their involvement with the formal sector through sub-contracting the production of intermediate products.

1.19 Returning to Schultz's distinction between productive and allocative efficiency, education may affect informal sector participants' earnings by:

- i) Increasing labour productivity - productive efficiency.
 - ii)
 - ii a) Positively influencing the capacity to obtain credit or generate savings leading to capital accumulation.
 - ii b) Increasing entrepreneurial efficiency.
- } allocative efficiency

Each of these is discussed below.

1.20 (i) Education may raise the labor productivity of all types of informal sector workers through at least three ways:

- a) The direct teaching of a skill which can be used to more effectively perform a particular task. The opportunity to use such a skill is likely to be greater in those activities which are open ended and not highly structured i.e. activities a, b and c.
- b) The ability learned in school to problem solve, be adaptable, think in terms of alternatives and so on, in relation to the performance of a task. This ability is applicable to employees/apprentices as well as the self employed since the essence of many informal tasks is adaptation, particularly in activities a, b and c.
- c) The faster learning of skills as a result of the discipline and experience of schooling.

1.21 (iia) The ability to raise credit or accumulate savings is a key factor in increasing productivity in informal sector activities, creating new markets and competing more effectively with the formal sector. Credit may be raised from relatives and friends, informal sector money lenders, government agencies, co-operatives, savings and loans societies, commercial banks and so on. Savings may be accumulated from periods spent working in the formal sector. It may be expected that for institutional loans, there will be a greater willingness on the part of the institutions to lend to people with more education, other things being equal. Similarly, there would appear to be a greater likelihood that periods of formal sector employment are achieved by the more schooled with a consequent increased probability that they are able to accumulate savings which can then be used to finance informal sector activities. Both of these suppositions can be investigated by the surveys.

1.22 (iib) The use which is then made of capital and other inputs is an important aspect of entrepreneurial efficiency - or, in Schultz's terminology, allocative efficiency. The advantages stemming directly from literacy for entrepreneurial activity are obvious - book keeping, ordering, etc. More important, however, are the advantages it may allow in being able to keep up with changes in the economic environment. Important aspects of entrepreneurial efficiency include the ability to re-allocate factors as a result of changes in economic circumstances and an increased knowledge of relative prices, perception of the potential range of technology and potential markets.

1.23 These ways in which education may, potentially, affect the productivity of those working in the informal sector will be investigated

by a number of approaches. At this stage of project conceptualization, the approaches center around standard earnings functions, the more complex use of path analysis and a disaggregation of education effects, and production functions. These are each discussed in detail below,

a) Earnings Functions

1.24 The survey will yield information on the incomes derived from three types of activity:

- (i) employment by an enterprise outside the household
- (ii) self-employment (working alone)
- (iii) employment in household enterprises.

In many cases the incomes reported for (iii) will not be apportionable among household members as a reward to their labor since total value added will partly reflect returns to non-human assets, and the share-out among household members (if observable) may reflect kinship loyalties as much as their respective productivities. For (ii), reported income will also sometimes contain a significant capital component. Only for (i) can all income be attributed to labor services.

1.25 We will assume that an hour's labor earnings can be written as a function of the individual's education and training (E), other individual characteristics such as sex, experience, and race/ethnicity (I) and relevant family characteristics such as father's education and socio-economic background (F). The family background variables are included as proxies for pre-schooling ability and a vector of learning influences at home such as parental encouragement, and the presence of printed materials and communications media. Thus we can write for the i^{th} individual,

$$W_i = W(\underline{E}_i, \underline{I}_i, \underline{F}_i)$$

1.26 The simplest analysis is to estimate this equation in a conventional log-linear form across hourly wage income earners (type i). If E_i is specified as a set of suitably defined education and training dummies then the corresponding coefficients reflect the proportionate differences in the hourly wage between the education and/or training groups in question and the base group after controlling for other independent determinants of wages. This will therefore provide estimates of the wage differences associated with different levels and types of education and training.

1.27 Many informal sector participants will earn their main source of income not through wage employment but through self employment in situations in which they are the only workers (type ii). Two approaches can be adopted here. The first, and simplest, is to restrict the analysis solely to individuals engaged in activities within which capital assets other than inventories are non-existent or insignificant.

1.28 The second, and more difficult, approach is to disentangle labor income in those activities in which physical capital is a relevant input. ^{5/} This can be done, in principle, by subtracting imputed capital costs from value added. Imputed capital costs are calculated by multiplying the replacement value of assets by an appropriate borrowing or lending rate and adding depreciation per period. The marginal product associated with an additional hour of work is then estimated by dividing labor income by hours worked. Given the number and strength of the

^{5/} While Mazumdar (1981), Souza and Tokman (1978) and Chiswick (1977) have applied earnings functions to the self employed, in no case has a detailed adjustment for capital been made.

assumptions involved, this approach is clearly susceptible to error from various sources and possible biases. However, an earnings function can be fitted to the data obtained for all self employed individuals with this method and the results compared with those for the restricted sample of self employed discussed above.

1.29 Another issue to be focussed on is whether individuals of given characteristics have similar earnings in different activities. If they do then it is appropriate to estimate the returns to education in a straightforward way on the basis of average differences in earnings by educational level. If, however, there are certain barriers to employment such that earnings are not equalized for similar individuals then the returns to education depend upon the probabilities of a new school leaver finding work in the different activities, and how those probabilities are affected by education.

1.30 The most general way to test this is to re-specify the earnings function as,

$$W_{ij} = W(\underline{E}_i, \underline{I}_i, \underline{F}_i, \underline{d}_j, \underline{E}_i \underline{d}_j, \underline{I}_i \underline{d}_j, \underline{F}_i \underline{d}_j) \quad (2)$$

where \underline{d}_j is a set of dummy variables and $\underline{E}_i \underline{d}_j$, $\underline{I}_i \underline{d}_j$, etc. are sets of interaction terms between \underline{d}_j and other variables. In the simplest case, \underline{d}_j would be an employment status dummy i.e., wage-employment/self-employment, but it would be more interesting to extend the number of dummies to differentiate between different industries and occupations within the informal sector. The coefficients for \underline{d}_j reflect differences in the earnings of the base group across activities while those on the interaction terms pick up the differences in the differentials by activity associated with the characteristics in question. More restricted forms of the

equation will also be used, e.g., with I_{idj} and F_{idj} omitted. The overall hypothesis that different activities have identical earnings functions can be tested by fitting equation 2 to separate sub samples and then applying Chow tests.

1.31 Variations in earnings for similar individuals located in activities at different ends of the formal-informal sector continuum will also be tested for. Any divergence in earnings for individuals with similar characteristics is in itself an indication of the strength of the barriers between the sectors. Formal sector earnings may reflect institutionally set salary scales and the effects of collective bargaining while in the informal sector, wages and the labor component of self-employment incomes are determined competitively. If d_j is replaced in equation 2 by a single formal/informal sector dummy, then an earnings function analysis can pinpoint both average sectoral earnings differences and sectoral differences associated with education and other characteristics.

b) The Nature of the Observed Link Between Education and Earnings

1.32 Why does education or training raise individual earnings? If we knew the answer to this question it might be possible to reorganize educational curricula and training programmes so as to improve their performance in this respect. As part of the surveys, short tests of both cognitive ability COG, (e.g., reading comprehension, reasoning) and attitudinal modernity, MOD, will be administered to economically active household members. These can be used to decompose the effects of education on earnings.

1.33 An illustration of the general approach can be given with the aid of the following simple recursive model (subscripts and random error terms are omitted for convenience).

$$E = d_1 + d_2 \underline{I} + d_3 \underline{F} \quad (4)$$

$$\text{MOD} = c_1 + c_2 E + c_3 \underline{I} + c_4 \underline{F} \quad (5)$$

$$\text{COG} = b_1 + b_2 E + b_3 \underline{I} + b_4 \underline{F} \quad (6)$$

$$\log W = a_1 + a_2 \text{COG} + a_3 \text{MOD} + a_4 E + a_5 \underline{I} + a_6 \underline{F} \quad (7)$$

Although in practice education dummies will be mostly used, these are collapsed here for convenience into a single variable, E, defined as years of education. Working through the model, education is determined in (4) by certain personal characteristics (age and sex) and family characteristics. Along with education the latter also determines MOD and COG in (5) and (6). Finally, the earnings function is re-specified in (7) with MOD and COG added, E retained to pick up education effects not reflected in MOD or COG and the \underline{I} and \underline{F} vectors retained for the same reason.

1.34 Estimation of equations (5) and (7) will allow us to divide the overall effect of education on earnings into three components: the effect of raising COG and hence log W, the effect of raising MOD and hence log W, and finally the direct effect of education on log W after controlling for COG and MOD. In terms of the model we can represent this as:

$$\text{Total effect} = a_4 + a_2 \cdot b_2 + a_3 \cdot c_2$$

1.35 Path analysis can also be used to examine the contribution of the above three components to the bivariate correlation between log W and E. This general approach can be extended much further. If one now brings in equation (4), it is possible to further decompose the overall effects of individual and family characteristics on earnings. (See Figure 1.1) Individual characteristics include a pre-school ability measure, or this could be used as an intervening variable between family background and education.

1.36 A particularly interesting extension will be to compare results when the analysis is applied separately to the samples of formal and informal sector workers. This will give some useful comparative insights if particular levels and types of education or training have different impacts on earnings in the two sectors.

c) Direct Estimates of the Effects of Education and Training

1.37 As described briefly above, one alternative approach to measuring the effect of education's productivity is via the use of production function analysis. In terms of the earlier classification, the analysis can be applied to the activities of one self-employed worker (type ii) or multiple workers engaged in a common activity (type iii). Two variants of the approach can be explored. The first treats labor in different education or skill categories as separate factors of production i.e.,

$$Q = f(K, L_1, L_2 \dots L_n)$$

where L_1 is labor input of the 1th type, while the second argues that the education of the head of household is what matters and affects the enterprise by improving the technical efficiency of the establishment i.e.,

$$Q = A(\underline{E}) f(K, L)$$

where A is a technical efficiency parameter, \underline{E} is a set of education and

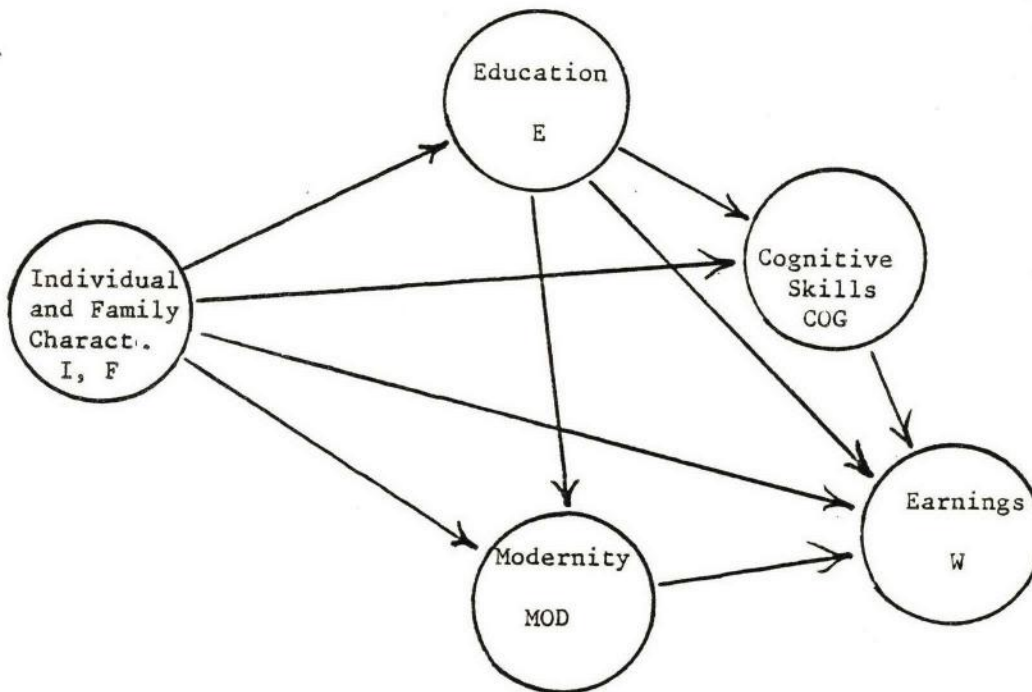


Figure 1.1. A path model of the effect of education on earnings

training dummies as before and L is total undifferentiated labor input. If a Cobb-Douglas production function is used the functions can be estimated in logarithmic form by ordinary least squares and if more complex functions such as a CES are used then non-linear techniques can be applied.

1.38 The effect of education on allocative efficiency has been investigated in recent studies of farm behavior by employing a profit function derived from a Cobb-Douglas framework. The latter expresses profit (revenue less variable costs) as a function of a parameter reflecting both technical and allocative efficiency levels, fixed factor quantities and variable input prices. This is an excellent framework in which to explore the effects of farmer education given that land can plausibly be treated as a fixed factor and other factor prices will often vary between regions. In the urban informal sector context, however, the framework does not appear very promising given that it is not obvious that household enterprises employ fixed factors except perhaps for the workshop size in manufacturing activities. Also, given that the surveys will be carried out in only one city, we are unlikely to observe much variation in input prices.

1.39 One possible alternative is to examine whether there is any relationship between the educational qualifications of the household members and the unit costs of the enterprise. The latter can be calculated by using the estimated earnings functions (for informal sector wages only) to impute the wage costs of household workers and then adding capital, inventory and intermediate input costs. Capital and inventory holding costs can be calculated using the method discussed earlier. This only permits us, however, to examine a modified version of the allocative

efficiency concept as success in attempted cost minimization is being investigated rather than success in profit maximization.

2) Labor Market Behaviour

1.40 The second major research question focusses on the effect which education and training has on decisions with respect to participation and behaviour in the labor market. This deals, then, with some of the complex issues of labor supply and allocation. There are two stages of decision-making on which to concentrate. The first relates to decisions regarding the acquisition of education and the second to the choice of economic sector in which individuals with different amounts of education hope to participate and the actions taken to achieve this.

1.41 Household decision models view the household as an economic unit maximizing a single utility function which incorporates the preferences of all its members. In these models it is considerations of the household unit, rather than the individual, which are paramount. As such, they go beyond the hypothesis that an individual's decision may be affected by household characteristics. In the context of this research proposal, decisions relating to an individual, but made by the household, enter at two stages. The first centers on the amount of schooling demanded for the family as a whole, or for an individual child; the second relates to the behaviour of the school leaver in approaching the labor market. The two are shown schematically in Figure 1.2. Lying behind each 'household decision' are sets of external economic factors and household characteristics.

1.42 Factors affecting decision point (i) i.e. the household demand for schooling, have been discussed by Birdsall and Cochrane (1982). These are,

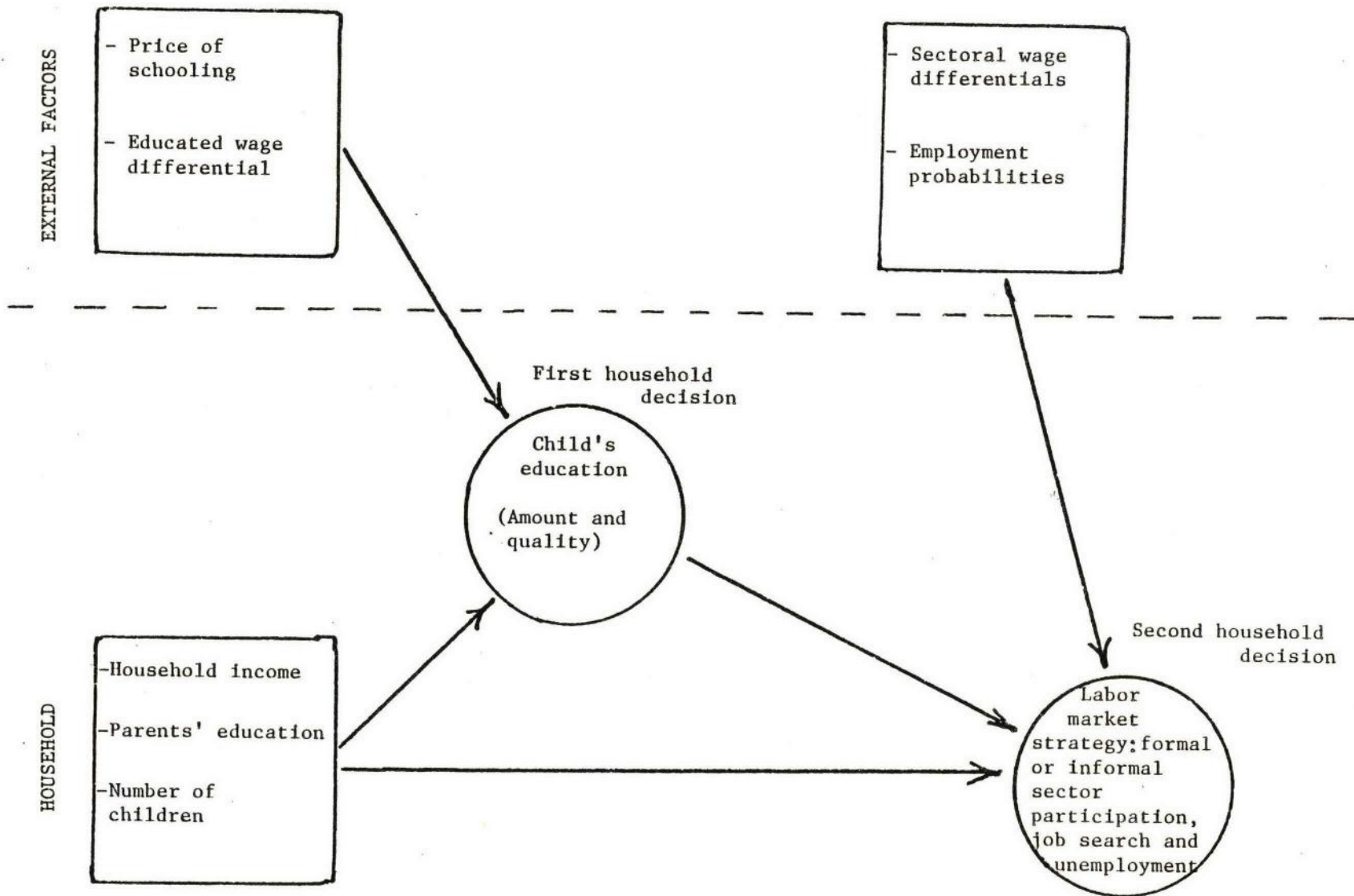


Figure 1.2 Household Decision Model: Demand for Education and Labor Market Behaviour

the price of schooling P_s , other prices P_x , the wages of the husband, wife and children in employment W_n , W_w , W_c , other household income V , and taste for education T (proxied by parental education). To these may be added the wage differential associated with the level of schooling in question and the number of non-earning children. The household demand for schooling level s , for an individual child is then:

$$D_{si} = f(P_s, P_x, W_n, W_w, W_c, V, T, C)$$

1.43 Several pieces of descriptive research (referred to in Section D below) have shown that the first few years of employment are often associated with shifts by individuals between types of employment status. In this proposal, therefore, we are also interested in the household and individual decisionmaking processes whereby school leavers approach the labor market and make choices between unemployment and job search, part time employment in the informal sector and job search, full time employment in the informal sector, and employment in the formal sector. Labor market strategy adopted by the household for the 'educated' family member again depends on external economic factors mediated via the particular economic circumstances of the household. Those hypothesized as influential are the income of the family which may be used to finance job search while the individual is only part-time employed, or unemployed, and the sector of employment of the parents and employed children which may influence attitudes and contacts. This part of the project will link up to work on school leaver tracer studies which is already being conducted within the Education Department.

1.44 A new labor market entrant who aspires to but cannot gain immediate entry to the formal sector has in principle a choice of two strategies: to

remain totally unemployed or, in the absence of barriers to entry, to participate to some degree in the informal sector thereby reducing the probability of finding a formal sector job in a given period (Fields 1975, Pinera and Selowsky 1979). If the latter strategy is adopted, a choice of the number of hours of intended search must be made (search intensity).

The primary purpose of this part of the proposed project will be to:

- a) examine whether the informal sector is used as a means of financing job search,
- b) measure search intensity and experience among informal sector participants and the unemployed,
- c) estimate the effect of education on unemployment incidence and search intensity.

1.45 Obviously much of the research will be based on descriptive information obtained from the surveys. For example, search activity among informal sector workers will be directly observed and cross-tabulated with education and other characteristics. Similarly, unemployment rates will be estimated among individuals classified by a number of characteristics including the participating sector of other household members and education. The more technical part of the analysis will, however, focus on two interrelated problems: separating out the effects of education,

training and household characteristics on the incidence and duration of open unemployment and on the search intensity among those participating in the informal sector. Clearly, in the absence of any barrier to entry in the informal sector one can provide an integrated analysis in which open unemployment is simply a special case in which the individual chooses the upper limit of search intensity. However, given that such barriers may exist it is useful to examine the determinants of the two decisions separately as well as together.

a) The General Case

1.46 A complete analysis of the individual's optimal search path over time would be rather complicated as this needs to be integrated with the choice of an optimal consumption path given an initial asset endowment. For present purposes it is, however, sufficient to assume a static present value of income maximization model in which the individual only makes decisions one period at a time. Suppose the i^{th} individual is faced with an informal sector wage T_i and an institutionally set formal wage W_i and a probability of a formal sector offer that depends upon the number of hours searched per day. 6/ The individual will then search more intensively: the greater the difference between W_i and T_i , the greater the probability of success for any given number of hours searched, the less the tendency for diminishing returns to hours searched to occur in terms of the job finding probability and the easier it is for the individual to finance search by means other than informal sector participation. The first two

6/ In practice the individual will face a distribution of formal sector wage offers but we will assume for the moment that this dispersion is small and can be ignored.

of these are determined by the arguments of the earnings function, the third is essentially technological while the last is determined by family characteristics.

1.47 For each economically active individual not working in the formal sector we will know the number of hours devoted to search in the previous week (S). The empirical model is then:

$$S_i = S(\underline{E}_i, \underline{I}_i, \underline{F}_i) \quad (8)$$

where \underline{E} , \underline{I} and \underline{F} are defined as before.

1.48 There are two issues of particular interest here, both of which go beyond the individual and can be placed in the context of household decisionmaking. The first is whether search intensity is positively related to education and training and, if so, to what extent this is because of higher returns to search for the more educated arising from a wider variation of earnings facing them or because of family background variables which affect the cost of search. The second is whether it matters if the individual's family are informal or formal sector participants. This can be investigated by introducing one or more appropriate dummy variables. These analyses will be conducted with equation (8) applied to all economically active individuals (including the unemployed) who do not work in the formal sector.

1.49 These issues can be described graphically.

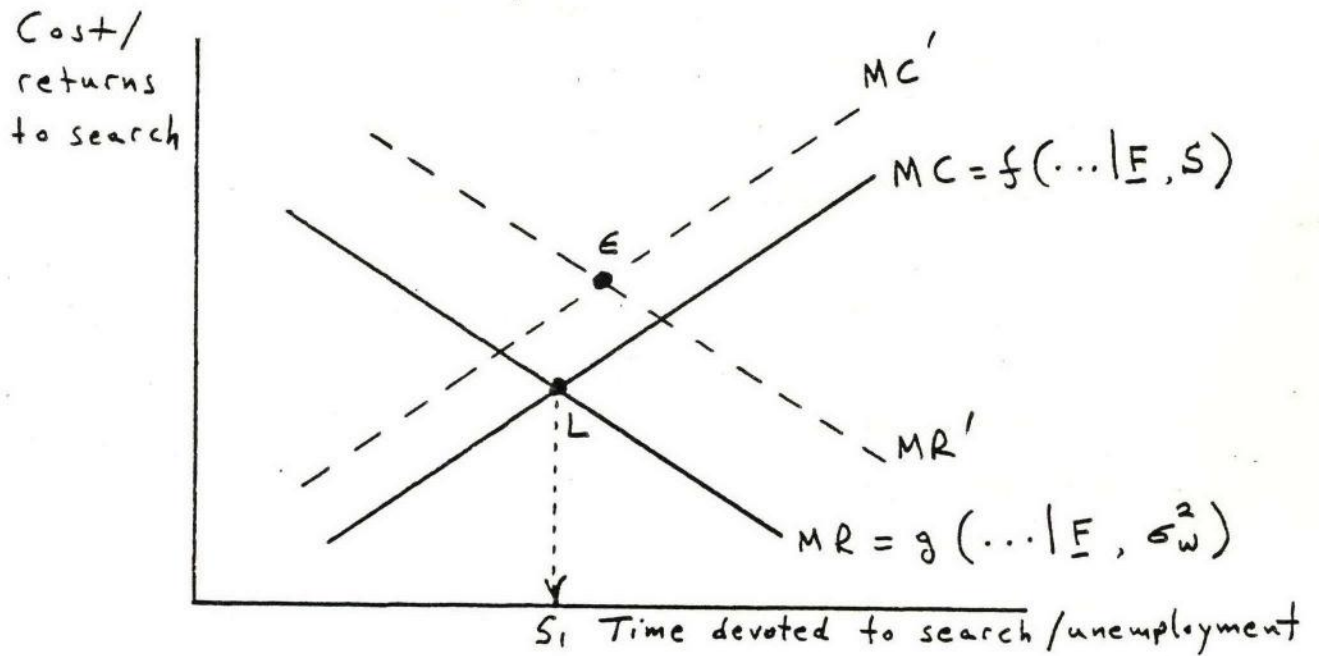


Figure 1.3 Education in a job search model

In figure 1.3 the thick and dotted lines denote the marginal cost and revenue curves of job search for individuals with primary and secondary schooling respectively. The marginal cost curve is drawn upward sloping to reflect that the financing cost of job search increases over time while the downward slope of the marginal revenue curve signifies diminishing returns to search. For the primary school leaver, the optimum search time is S_1 . For the secondary school leaver, both cost and revenue curves are higher because of the increased opportunity costs of search (foregone earnings) and the greater variation in earnings levels facing individuals with greater amounts of education. Whether the equilibrium search time for

secondary school graduates is longer than for primary school leavers or shorter, is an empirical question and depends on the slopes and shifts of the curves. Depending on the way in which search is financed, the individual or the household will be at the center of analysis.

b) The Incidence and Duration of Unemployment

1.50 This is a special version of the case above in which the individual is treated as choosing between open unemployment and informal sector participation at some fixed intensity. The analysis is then similar to that above except that an unemployment dummy UNEMP for non formal sector participants is first defined which yields a similar equation:

$$\text{UNEMP} = U(\underline{E}, \underline{I}, \underline{F}) \quad (9)$$

Also, an effort will be made to define a more continuous employment variable among those who reported variation in the time budget question.

1.51 The observed number of unemployed depends, in a steady state, upon the number of individuals entering unemployment per period and their average completed duration of unemployment. In less developed countries a disproportionate number of the unemployed are relatively young and presumably many of them are new labor market entrants. Given that the inflow among young people is essentially determined by the age distribution and the out-turn of the educational system, the incidence of unemployment among young people is largely determined by their completed duration. An equation similar to those above can therefore be estimated by TOBIT analysis with completed unemployment duration DURUNEM as the dependent variable applied to all young people under (say) 30 years of age who have either never experienced open unemployment or who have completed an unemployment spell.

c) Search Intensity

1.52 Finally one can restrict the search intensity analysis only to those who are currently observed as participants in the informal sector. This is valid if there are significant barriers to entry to the informal sector such that some individuals have the possibility of working in it and others do not.

3. Dependent and Independent Variables

1.53 A summary of the above discussed operational variables to be measured in this project is as follows:

(a) Dependent Variables

- W hourly wage or labor income as described above
- COG continuous cognitive measure, i.e. performance in tests to be developed by the local research team. (Also becoming an independent variable in the recursive model).
- MOD modernity of attitudes measure: likewise to be developed by the local research team (For examples, see Annex 2).
- Q_{ij} output of the j^{th} activity in the i^{th} household (Self-employed and household enterprises only).
- C_{ij} total production costs of j^{th} activity in the i^{th} household (Self-employed and household enterprises only).
- S time (hours) per week devoted to search activities.
- DURUNEM length of completed spell of unemployment.

(b) Independent Variables

1.54 These may be subdivided into four groups: education (formal and training), individual, background and other.

a) Education

- E a set of 0 - 1 dummy variables indicating either years of schooling completed or qualifications.
- YS years of schooling: this can be used as an alternative to E in some equations.

- STYPE school type, e.g. private or public.
- SQUAL a vector of school quality indicators.
- SCURR type of school curriculum followed, e.g. general vocational.
- TR a set of 0 - 1 dummy variables indicating different levels and types of training. In the discussion above these are subsumed under E.

b) Individual

- SEX a 0 - 1 dummy variable indicating the sex of the individual.
- EXP total working experience.
- EXPEM time spent with present employer.
- AGE age.
- RACE a set of 0 - 1 dummy variables denoting different racial, ethnic or tribal groups.
- DSEC a set of 0 - 1 dummy variables denoting sector of work e.g. self-employment or wage employment, different activities etc. In the discussion above this was abbreviated to d.
- ABIL measure of 'raw' or non-school created ability. (For example, see Annex 2).
- MIGR a 0 - 1 dummy variable indicating the person is a migrant to the present residence.
- ORIGIN geographic origin of migrant.
- RES length of residence of migrants in the present city.

c) Background

i) Earnings Functions

- FATHED Education of father in years.
- MOTHED Education of mother in years.
- FATHOCC Father's occupation: a set of 0 - 1 dummy variables.
- MOTHOCC Mother's occupation: a set of 0 - 1 dummy variables.

- FATHSEC Father's sector of employment.
- MOTHSEC Mother's sector of employment.

ii) Search and Unemployment

FATHED and FATHOCC as above plus the following:

- INC Household income per adult equivalent member.
- FATHINC Father's income (an alternative to INC)
- DEPENDS Number of dependents in household
- HINF 0 - 1 dummy denoting household members in the informal sector
- FSELF Father self-employed (an alternative to HINF).

d) Other (analysis of household enterprises only)

- K value of assets used in activity.
- L_i labor time of i^{th} type used in activity.

(c) Sampling

1.55 Since the main concern of the research focusses on the effects of education in labor markets at the competitive end of the continuum, i.e. the informal sector, this immediately delineates the concentration of the sample. In addition, concern is more with the recent output of the school system, say those aged 30 or under. Putting these restrictions together, the target area of the investigation can be identified as the intersection of the three circles in Figure 1.4. Of course, a control group of non-educated engaged in the same sector, will also be included.

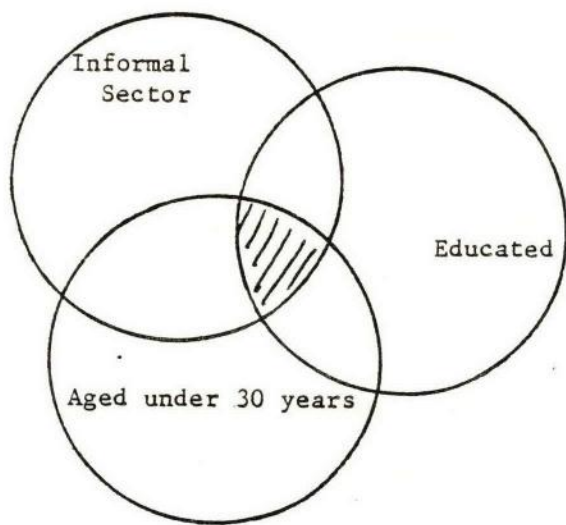


Figure 1.4. The target group for the investigation (shaded area).

1.56 In order to arrive at such an intersection it is necessary to sample individuals in household units in areas which are a priori known to contain a large proportion of the target group. (A basic questionnaire is in Annex 1). Obviously this approach requires some simplifying assumptions in order to be workable. For example, while average earnings in the informal sector appear to be universally inferior to those of the formal sector, it is not entirely justifiable to construct a sample of

urban poor in the intent of finding a larger concentration of individuals in the informal sector. Obviously, the "urban poor" and the "informal sector" are not coterminous; the poor and the better off exist in both sectors.

1.57 However, concentrating the sample in areas that are relatively poor, contain relatively more recent migrants, fewer schools and large-scale production activities, should increase the probability of capturing the full range of economic activity in this sector. Conversely, it runs the risk of not adequately capturing the experiences of those who have found work in the formal sector. For this reason we do not wish to narrow the criteria too closely in our sample design. Definitions in this sector are imprecise. And we will attempt to avoid introducing our own biases in the form of strict definitions in a field that has achieved little consensus. By choosing a household survey rather than a survey of establishments, data will inevitably be drawn from a universe larger than the informal sector itself (but certainly containing it). The essential advantages of this approach are that it leaves open the possibility of analyzing the data at a more disaggregated level, it provides for the definition of the informal sector in empirical terms as wide or narrow as we wish, and it permits us the economy of utilizing extant sampling frames.

1.58 Although it would be useful to survey the urban areas as whole of each country, it is unlikely to be practical given the escalation in costs involved. We therefore propose in our selected country case (described in the next section) to concentrate on the capital city Lima, (a sample of 6,000 households.) However, when the research extends to Indonesia in a later phase, we will be able to include a cross-section of both rural and urban areas through use of existing household survey

frameworks, (see Section C below describing research sites).

1.59 The main surveys will be preceded by a short but indepth pilot. Apart from testing the applicability of the questionnaire this will also be used to obtain vital local information regarding fixed assets and intermediate inputs used by the main activities.

C. Country Case Studies

1.60 Five countries have been identified as potential research sites for this project: Ivory Coast, Upper Volta, Peru, Indonesia and China. The criteria used for identifying these countries have been a combination of the following:

- a) importance of the country in terms of Bank lending for education,
- b) willingness of the government to support the research project,
- c) available previous work on the informal sector as a basis for rigorous sampling,
- d) existing local institutions identified for research collaboration,
- e) preparatory work already done by EDC towards the inclusion of a particular country.

1.61 Missions have already visited Ivory Coast, Upper Volta, Peru and China in preparation for this project. Government support has been secured in each of these countries and local research institutions have been identified and contacted. Further missions are planned to China and Indonesia in 1983 to negotiate with the governments and local institutions. A recent visit by a Chinese delegation to the Bank expressed a strong interest in participating in this study. The study was also

endorsed during Mr. Hultin's visit to Beijing in January 1983.

1.62 Evidently, because of the cost inherent in household surveys and the fact that this kind of research is attempted for the first time, this phase of the proposal refers only to one country, Peru. The choice of Peru among the five candidates is solely due to the fact that the research team was able to do more preparatory work there relative to the other countries, aided by Research Committee discretionary funds (RPO 672-98). It is our hope that as experience and preparation proceeds with the other countries that have shown interest in the proposal they will be gradually phased in. It is also hoped, that the proposed research project on the consequences of educational expansion will also use Peru as a country case so that we may be able to study the effect of education across the entire urban sector. In order to put the informal sector issue in perspective, some information is given below for all the countries which have been considered for this research project including those that do not make part of the research proposal in hand.

1. Ivory Coast

1.63 The Ivory Coast is included among the countries to be eventually investigated for a number of reasons. First of all it has a sizeable and rapidly growing informal sector within which the labor force is distributed over a number of activities. Table 1.1 below shows the most recent estimate of the overall distribution of the labor force.

Table 1.1 Ivory Coast. Employment by Economic Activity and Type of Sector, 1980

<u>Economic Activity</u>	<u>Type of Sector</u>		<u>Total</u>
	<u>Modern</u>	<u>Traditional</u>	
Agriculture	71,000	2,000,000	2,071,000
Non Agriculture	357,000	430,000	787,000
Total	428,000	2,430,000	2,858,000

Source: Based on information supplied by the Office National de Formation Professionnelle.

We can imply from this that the urban informal sector in the country as a whole has an importance in terms of employment equal to that of the formal sector.

1.64 More detailed information is known about the labor force in Abidjan resulting from ILO survey work in the early 1970s' (Joshi, Lubell and Mouly, 1974). It was estimated that in 1970, around 47,000 individuals in this city worked in the informal sector out of a total of 153,000 and that this sector's share had risen from 28 percent in 1965 to 31 percent in 1970. Table 1.2 presents the breakdown of informal sector employment in Abidjan by sector and labor force status.

Table 1.2 Percentage Distribution of Informal Sector Employment in Abidjan by Sector and Labor Force Status, 1970

<u>Economic Activity</u>	<u>Wage and Salary Earners</u>	<u>Self-Employed and Unpaid Household Workers</u>	<u>Total</u>
Agriculture, Forestry, Fishing and Hunting	3.2	3.2	6.4
Manufacturing, Handicrafts, Power and Construction	14.4	17.6	32.0
Trade and Services	28.7	33.0	61.7
All Sectors	<u>46.3</u>	<u>53.8</u>	<u>100.0</u>
Number (000's)	21.76	25.25	47.0

Source: Joshi, Lubell and Mouly (1974), Table 2.5, page 2-17.

In general the urban informal sector is less dominated by self-employed petty traders than is the case in most other developing countries:

industrial activities employ about a third of the informal sector labor force and almost a half earn wages or salaries. This may be contrasted with the situation in, say, Jakarta where the great bulk of the informal sector is self-employed. Although the proportion of self-employed workers was roughly constant between 1965 and 1970, there appears to have been a shift away from informal services towards informal manufacturing: the share of services in informal employment falling from 65.5 percent in 1965 to 61.7 percent in 1970 while the share of manufacturing rose from 27.6 percent to 32.0 percent over the same period. Informal industry in Abidjan is spread over many activities among which textiles, wood products, vehicle repair and construction are particularly important.

1.65 There is very little information on differences in wage rates between the formal and informal sectors although one rough proxy is the ratio of value added per worker in the two sectors in the same industry. In 1970 this varied between 0.11 and 0.95 in different manufacturing industries and was 0.23 for manufacturing, handicrafts and construction as a whole.

1.66 Like many other developing countries the Ivory Coast has experienced very high rates of open unemployment in its urban areas. In 1970 it was estimated that out of a total urban labor force of 490,000 some 115,000 were economically active and without work resulting in an overall unemployment rate of 23.5 percent. For Abidjan alone, the corresponding rate was 20.0 percent. Such high rates guarantee that a random household survey will pick up plenty of data on unemployment and search. They also suggest that the informal sector may not be as accessible for unemployed workers as much theoretical literature suggests. (e.g., Fields, 1975).

1.67 A third reason for selecting the Ivory Coast is that there should be a reasonable distribution of educational attainment within the informal sector labor force. Although direct data on this is lacking, one may note that while the illiteracy rate among persons aged 15 years or older was 58.8 percent for the overall Ivory Coast population in 1980 (UNESCO, 1981), in recent years primary school enrolments have almost achieved universality.

1.68 Fourthly, there is at the moment a household survey being planned in the Ivory Coast and the Bank's Development Research Department is involved in this. Linking with and complementing this work could prove useful and result in both greater efficiency and economy.

2. Upper Volta

1.69 Very little evidence exists on the economic effects of education in Upper Volta. During a recent EDC mission, Psacharopoulos calculated rates of return on the basis of partial sets of earnings data from the public sector and a series of private sector interviews. Social rates of return calculated on the basis of 1982 data were between 15 and 20 percent. The nature of the data used for calculating these rates of return clearly points to the necessity for a coverage of education-relationships which goes well beyond the formal sector. In 1975, employment in this sector amounted to only 1.5 percent of the country's economically active population. The vast majority of, at least primary, school leavers do not enter the formal sector but are agricultural or informal sector workers, emigrants or are unemployed. At present nothing

is known about the economic performance of school graduates in Upper Volta's agricultural sector and despite an ILO study of the informal sector there is again no knowledge of the educational dimension. At the same time that the economic effects of schooling are unknown, there are plans to significantly expand primary enrollments over the next two decades.

1.70 Any consideration of the economic effects of education in Upper Volta require an acknowledgement of the importance of international migration, particularly to the Ivory Coast. It is estimated that 70,000 persons depart each year and according to the 1975 Census, the level of education is closely related to the decision to migrate. This resulting loss of educated people is not, however, regarded as totally negative. Recorded migrant remittances from abroad in 1981 amounted to nearly one-half of the country's official exports of goods and services. In addition it is estimated that perhaps a half of gross migrants return each year. To the extent those people have learned some skills in the foreign country, they contribute to the future development of the domestic economy.

1.71 There are, then, a number of good reasons for including Upper Volta in a study of the effect of education in the informal sector:

- (a) the ratio of formal sector employment to the total labor force is one of the smallest in the world,
- (b) there already exists some background work on the informal sector done by the ILO,
- (c) the country is one of the least researched in terms of education and employment,

- (d) the Bank has committed itself to a major emphasis on education in future lending,
- (e) by linking research on both the Ivory Coast and Upper Volta there is a chance of capturing the interesting effects of education on emigration and subsequent economic performance.

3. Peru

1.72 In recent years, the number of formal sector jobs has not kept pace with population increase in the urban centres of Peru. A result has been the growth of the informal sector especially in the 'pueblos juvenes'. Existing literature on this sector in Peru is mostly descriptive and anthropological (Osterling 1981, Scott MacEwen 1981, Wendorff 1979), though Webb (1977) made estimates of informal sector income for the early 1970's. The recent emphasis given to the private sector in general by the Government has widened the interest and in 1982 the Ministry of Labor, in collaboration with the ILO, launched a household - small enterprise survey of 1500 units.

1.73 Two types of questionnaires were used, one for the head of the enterprise and the other for employees. While, unfortunately, there was no education question in the latter, the educational level of workers can be found retrospectively by matching these survey results with those of the general household survey tape. This operation and the creation of a new merged tape is now underway, financed through the Bank's Research Committee's proposal-preparation funds. (RPO 672-98. See Annex 0). Two uses will be made of the merged tape:

- a) the information provided will permit the measuring of variances of the variables we are interested in for inclusion in the major study and will thus allow a more rigorous sampling,
- b) a first documentation of the relationship between education and income in the informal sector will be provided. Given the total absence of information on this front, even this small survey will be useful in getting some feel for the relationships involved.

1.74 An enlarged and more detailed survey of informal sector workers, using the criteria listed in 1.47 has recently been discussed with the Ministry of Labor. This involves two stages. First, a household survey would be conducted in Lima in those neighbourhoods expected to contain a large proportion of informal sector workers. This would collect information on age, education, employment history, occupation, sector and size of enterprise in which the individual works. The information can then be analyzed and a second, more detailed survey made of selected individuals and of enterprises in what appear to be the most important subsectors. A sample frame for the first stage is currently being prepared in Lima.

1.75 Siting part of the research project in Peru will also enable us to link with and complement a major BID-financed ECIEL research project on the role of education in rural areas (the countries involved are Peru, Brazil, Mexico and Paraguay). The specific objective of this study is an analysis of changes in productivity of small and medium sized farm units, as a result of changes in educational processes. Because of Bank interest in the results of this study, EDC is providing a small time input in monitoring its progress. Methodologically, our interest is in the contemplated use of path analysis in which the innovative function of education is treated as an intermediate variable: first, as dependent on schooling and family characteristics; second, as independent and a determinant of agricultural production.

1.76 Depending on its actual design and intent, the study will hopefully increase our knowledge of the role of education in rural

environments. This will augment the evidence we already have on farming from Jamison and Lau (1982) and to the extent that rural nonfarming activities are covered, it will be a useful adjunct to our own work.

1.77 For a research program investigating the relationship between education and informal sector activity, there are several reasons why Peru would be a useful site:

- a) because of the relatively large size of the sector in the economy. Although exact estimates do not exist, most put the proportion of urban informal sector employment in the total labor force in the range of 30 to 40 percent (Wendorff, 1980, p.3);
- b) because of existing previous work on household surveys by the Ministry of Labor, there exists a good basis for a probabilistic sampling frame;
- c) because it will link to and complement the above mentioned ECIEL project on the role of education in the rural sector of the economy,
- d) because the Government is very interested in the topic of the proposed research. The Minister of Labor has expressed his endorsement in writing and the Ministry of Education is eager to see the research carried out.

4. Indonesia

1.78 The Central Bureau of Statistics periodically mounts two types of household sample survey which are of direct relevance to this study. The SAKERNAS is a national sample survey of labor market conditions and the labor force in urban and rural areas. The SUSENAS is a national sample multipurpose household survey of socioeconomic conditions in urban and rural areas. The most recent survey in 1978 is available on tape in the Bank. The next SUSENAS survey will be conducted in 1984, which allows time for the Bank to request the addition of more questions on the

respondents' educational background and time to plan the cognitive skill testing of a sub-sample. In addition, in 1976-78 the Ministry of Education mounted a national sample tracer survey of primary, junior and senior secondary school leavers based on a sample of urban and rural schools.

1.79 Before the Jakarta Informal Sector Survey was conducted with ILO support in 1975, there were only very rudimentary estimates of the size and significance of the informal sector in that city. Sethuraman (1976) used 1971 Census data and a 1968 survey of establishments to estimate that slightly more than half a million persons, or approximately 40 percent of Jakarta's 1971 labor force, were engaged in informal sector activities. From the same data it was estimated that informal sector employment, as a percentage of total employment, varied considerably by branch of economic activity.

1.80 While the focus of the Survey was not on the relationship of education to skills, productivity or job search it does, nevertheless, constitute important ground work upon which it will be possible to profitably build. The sample was of enterprises, not individuals or households, and covered manufacturing, construction, transport, trade and services. From the Survey it is possible to make a rough estimate of the size of the informal sector in Jakarta. This can be done by extrapolating from the count of 14,028 heads of informal sector enterprises. According to the survey report (Moir, 1978) this procedure results in an estimate of over 560,000 persons. This is, of course, only heads of enterprises in the five activities listed above and excludes all other informal sector participants. The informal sector is thus seen as a major source of employment in Jakarta.

1.81 With respect to schooling, the Survey showed that 20 percent of the men and 50 percent of the women had no formal education. The informal sector participants had received fewer years of schooling than characterized the Jakarta labor force as a whole. Some had informal education in the form of learning job-related skills from neighbors, relatives or friends.

1.82 In addition to the basic assistance which the Jakarta Informal Sector Survey could provide to the research proposed, there is another reason for our desire to eventually include Indonesia as a research site. The 1980 Population Census (for which 5% use tapes are now available) included for the first time an employment status question which contains two self-employment categories. These are: (1) self-employment, and (2) self-employment assisted by family member/temporary help. Because of the existence of this question in the Census, it will be possible for us to take advantage of a very sophisticated sampling frame and to focus directly on individuals who have identified themselves in terms of self-employment. The director of the Bureau of Analysis and Development (Central Bureau of Statistics), is aware of this research proposal and has agreed to participate by making the census tapes and sampling frames available to us. The Population Council has also agreed to assist us in the survey design and the training of survey takers. The University of Indonesia's Faculty of Social Sciences has been contacted and is eager to supply graduate students as survey workers and to participate in the project as needed.

Other central contacts are the Ministry of Manpower (DG for Manpower Development) and the Ministry of Education and Culture (BP3K). Thus data availability in Indonesia allows preliminary analyses to begin early. In addition, the existence of periodic re-surveys allows an opportunity to enrich the data base by adding specially designed questions required for the study into an existing national sample framework.

5. China

1.83 China has been added to the list of potential research sites following the interest shown in joining the project by a Chinese delegation which visited the Bank in November 1982, led by Professor Yang Xin Heng of Nankai University. The city of Tianjing has been suggested as the survey site and the University of Nankai as the collaborating institution. Small scale, exploratory studies of young self-employed workers in Tianjing were made in 1981. Extensions of these could provide a very useful comparative case study for the other research sites in addition to increasing the knowledge of the precise relationships between education and the recent growth of youth unemployment (Colletta, 1982) and between education and work performance useful for Chinese educational policy.

1.84 An education mission to China in January 1983 discussed the possibilities of the proposed study with the central authorities and confirmed their interest in participating in the research project.

D. Relationship to Other Research

1.85 Over the last ten years or so a great deal of theoretical and empirical attention has been given to aspects of what has come to be widely termed the informal or unprotected sector in the urban areas of LDC's. Very little attention, however, has so far been given to the effect of formal schooling on workers in this sector.

1.86 Development models of the 1950's and early 1960's tended to view the economies of poor countries as dualistic with a large low-productivity subsistence agricultural sector and a small but growing high productivity urban industrial sector (Lewis 1958). As rural-urban migration increased it gradually became obvious that not all migrants were being employed in the wage earning 'modern' sector and that large numbers were engaged in activities generally described as trading and services. However, this whole sector tended to be generally ignored in the development literature and in government policy up to the end of the 1960s. Where it was recognized it was assessed in generally negative terms and assumed to be a purely temporary phenomenon which would disappear as the modern sector expanded.

1.87 Perhaps the first scholar to give systematic attention to such peripheral employment activities was Hart (1971) who coined the term "informal sector". From fieldwork in Ghana, Hart emphasised what he regarded as the positive role which this sector plays in providing both income generating activities and many essential city services. This was also the view of the highly influential International Labor Office study of Kenya published in 1972 (ILO, 1972). The report concluded that the

informal sector was capable of providing more jobs and growing faster than the formal sector and the recommendations were largely designed to reduce discrimination against it.

1.88 A large amount of the theoretical and empirical work which has focussed on the informal sector in the last decade has concentrated at the enterprise level and on questions of size, composition, relationships with other sectors and the potential for growth. Other work has attempted to define the profile and characteristics of informal sector workers.

1.89 Despite these efforts questions of the nature of skill acquisition and the effects of different training modes on informal sector workers have only in a few instances been tackled. One of the first scholars to survey the training background of small scale sector workers was Callaway in the 1960s in Western Nigeria (Callaway, 1964). What stood out in his research was the strength and extent of the apprenticeship system and the small numbers of people with formal schooling participating in that sector. By 1972, however, even in Northern Nigeria, an area of very low educational provision, Hinchliffe (1975) reported that 40 percent of employees/apprentices had had primary schooling.

1.90 Much of the most recent literature on skill acquisition and educational background of workers has come from studies initiated under the ILO's World Employment Programme. Some of these can be summarised quite briefly. The Nihan et. al. (1978a) study in Nouakchott, Mauritania showed that most training of informal sector workers occurs through apprenticeship with an entrepreneur in that same sector. They also found that employers trained within the informal sector ran their businesses at the same level of competence as those formerly apprenticed in the formal

sector. However, it is worth pointing out that the most successful group of entrepreneurs was the 5 percent or so who had attended courses at a vocational training institution.

1.91 In a related study by Ninan et. al. (1978b) of the informal sector in Lome, Togo apprenticeships within that sector were again shown to be the critical source of training. The same can be seen from Fowler's (1978) study of Freetown and Fapohunda's (1981) of Lagos. Outside of the ILO studies, King (1977) has also documented for Kenya the primacy of apprenticeship and on-the-job training in the direct formation of informal sector skills.

1.92 These studies tend to show low average levels of education for informal sector workers. However, what is required for a first analysis of the influence of education is a disaggregation by age group and also by activity. Electrical and mechanical repairers in their early 20's are likely to have a very different educational profile than 50 year old domestics. Arye (1976) shows, for instance, that in Kumasi, Ghana while only 13 percent of businessmen aged 46-50 years had had a middle school education, the percentage for the 20-25 years group was 80 percent. Hallak and Caillods (1981) point out another interesting feature from the above studies of Mauritania and Togo which is the educational superiority of employers compared to employees. This implies the possibility that formal education, while not being a provider of specific skills, in some way enables a transference to self employment. Why this may be so has not yet been researched.

1.93 While the large statistical surveys of the ILO have unearthed large amounts of data on the characteristics of informal sector workers there remains a large data gap on productivity and earnings differences and on the causes of these. Early studies such as Hinchliffe's (1975) of informal sector workers in Kano, Nigeria showed significant earnings differences between schooled and unschooled workers but no account was taken of individual variations other than schooling level. Activity of employment has been shown to be a major determinant of the effect of education on earnings in studies of San Salvador (PREALC 1978). The major attempt, so far, to fit earnings functions to informal sector workers has been made by Souza and Tokman (PREALC, 1978), again using data from San Salvador and also Santo Domingo. The conclusion was that while education 'explains' from 37 to 44 percent of the income variance of all workers, once the effects of employment status and size of establishment are controlled for, the effect of education is greatly reduced. Hallak and Cailloids (1981) point out, however, that it was not possible in this analysis to isolate within the informal sector those variables which are the most important in explaining incomes variations.

1.94 The results of surveys relating education, form of apprenticeship and capital assets to measures of entrepreneurial success tend to suggest that while primary schooling may be closely associated with higher productivity and earnings, the amount of capital assets is even more so. However, since education and capital accumulation are also highly correlated there remains a case for supposing that in one way or another, education plays a role in influencing the effectiveness of entrepreneurial activity.

1.95 What the statistical profiles of the informal sector labor force tend to show about worker skills is that most have been learned through an apprenticeship system, mainly in the informal sector itself but also in the formal sector, and few have resulted from specific vocationally oriented formal education programmes. These findings, however, say virtually nothing about the effects of basic education. The educational profile of informal sector recruits is increasing rapidly and that increase is the result of large amounts of expenditure. It becomes more and more important therefore to understand the effects of this expenditure. So far very little research indeed has been directly related to the issue of the effects of formal schooling on the behavior and output of informal sector workers.

1.96 Several pieces of research have confirmed that in many cases workers shift between sectors during their lifetime. While some learn skills in the formal sector and perhaps raise some capital, both of which are then put to use within the informal sector, others use part time work in the informal sector as a means of funding the search for a formal sector job. The ways in which education influences these types of behavior have again, however, received relatively little research attention. That which exists is centered around the notion of job search.

1.97 Job search models were first introduced into the development literature by Harris and Todaro (1970) and covered just two sectors - rural and urban. The result was to shift the emphasis in analysing unemployment away from demand deficiencies towards 'excess' supply resulting from restrictions to entry. Fields (1975) introduced into the

basic model what he termed the 'murky' sector and argued that the same expectational factors operated within the two urban labor markets as between the rural-urban areas. One of his conclusions was that, given that employers prefer to hire better educated workers, the education of an additional worker lowers the number of urban jobs available to the uneducated by one but reduces the uneducated labor force by more than one as a result of the downward effect on the probability of getting a job, and thereby reduces unemployment.

1.98 More recently Pinera and Selowsky (1978) have developed a more complex model of job search concentrating solely on the decision whether to remain unemployed and 'search' for a formal sector job or enter the informal sector. They argue that in the context of unemployment, wage differences between the formal and informal sectors and no barriers to entry to the latter, the wages of informal sector workers are likely to be different from the true marginal product of an additional educated worker to the labor force. Finally, Fallon's (1983) work on unemployment and search in Delhi suggests strong relationships between unemployment and household characteristics, and search and educational level.

1.99 The refinement of these tentative hypotheses and their further testing is another area in which a major study of education's role in the informal sector is required.

II. ORGANIZATION

2.01 In Peru the research will be carried out by local institutions. (See Section III, below). Beyond finance, the Bank will be involved in three functions:

- a) consultation regarding the research design;
- b) monitoring of the execution of the project;
- c) use of the generated results at two stages:

analysis of the computer data files as they are produced for answering supplementary research questions to those being conducted by the local team in the case country, and absorption and dissemination of the findings of the study.

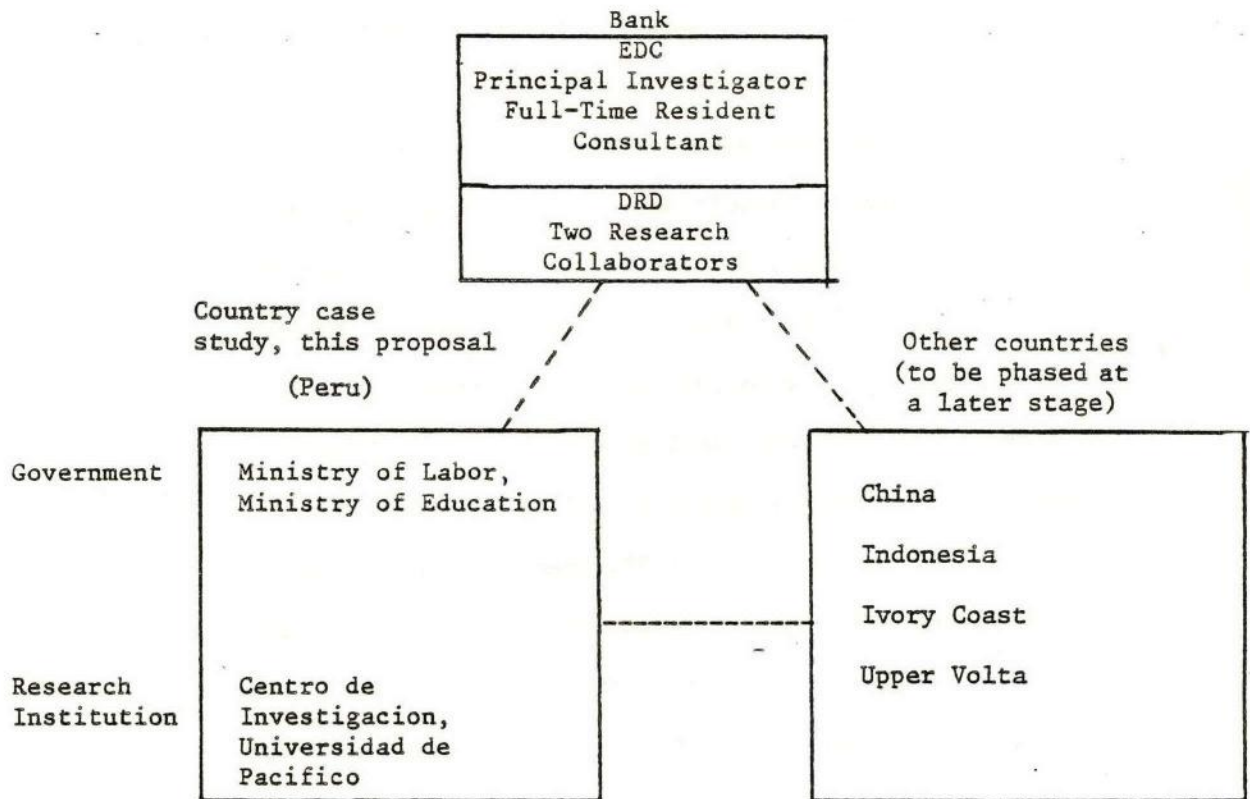
2.02 The central consultants will be two economists (Professors Hinchliffe and Fallon) and one sociologist (Professor Holsinger) (See CV's in Annex 4). Professor Hinchliffe has worked for several years on cost benefit aspects of education including comparative studies of the earnings of formal, informal and rural sector workers in Nigeria. He has additional research experience in Malaysia, Sri Lanka, Ghana and Papua New Guinea. Professor Fallon has, since 1975, been working on a major study of job search in New Delhi and, in addition, has done fieldwork in Botswana. Professor Holsinger is known, particularly, for his pathbreaking work on relationships between education and attitudinal modernity in Indonesia.

2.03 In addition to the principle investigator (G. Psacharopoulos) a second staff member joining EDC's Research Unit in June 1983, Dr. Peter Mook, will be involved in the project. Mook has worked in Nepal, Thailand, Liberia and Kenya, recently specializing on the effects of education on farm efficiency.

2.04 Because of the many parties in the Bank interested in this research proposal, it is suggested that two collaborators from Departments outside EDC be included in the working group for each country. The organization chart is shown in Table 2.1

Table 2.1

Organization Chart for Education - Informal Sector Research Project



2.05 A timetable of major events is given in Table 2.2 spanning over three financial years.

Table 2.2

TIMETABLE OF MAJOR EVENTS

Date	Event	
1983	April	Mission to Peru to prepare contracts with collaborating institutions
	May-October	Preparation of pilot instruments and sampling frame
	November-December	Pilot testing of instruments
1984	January-February	Analysis of pilot data Redesign of instruments
	March	Main field survey
	April	Coding and punching of data Clean data files
	July-December	Statistical analysis Report writing
1985	March	Seminar on synthesis of results
	June	Final report

III. COLLABORATION WITH INSTITUTIONS IN DEVELOPING COUNTRIES

3.01 Following visits by Bank Staff to candidate countries for field work in this study, the following institutions have been approached, and have shown interest in carrying out the work.

Peru

The institution identified during the mission as prime candidate for undertaking the research contract is the Centro de Investigacion of the Universidad del Pacifico. The Center has excellent computer facilities and skilled personnel in quantitative analysis. (See Annex 3 for a description of their activities).

Ivory Coast

The Office National de Formation Professionnelle (ONFP) of the Ministry of Technical and Professional Training, together with CIRES has been contacted. (Details of ONFP and their response are provided in Annex 3). Appropriate institutions in Upper Volta have also been identified, but will not now be contacted until the political situation is more clear. In the absence of a research site in Upper Volta, Voltaics will be traced in the Ivory Coast.

IV. RESOURCE REQUIREMENTS

4.01 Table 4.1 gives a summary of the overall resources anticipated to be committed to this study, spread over three fiscal years. The study will also use a full time Bank resident team to coordinate the activities, monitor progress and conduct supplementary analyses to those conducted by the local researchers and one full-time consultant located in EDC. Table 4.2 provides a more detailed analysis of the major cost items of the study.

Table 4.1

RESOURCE REQUIREMENTS, EDUCATION-INFORMAL
SECTOR STUDY

Resource	FY83	FY84	FY85	Total
A. Staff Requirements (in staff weeks)				
Principal Supervisor	2	10	3	15
Other	1	2	1	4
Total	3	12	4	19
B. Case Study - Peru (in '000 US\$)				
Contractual services	20	90	12	122
C. Headquarters (in '000 US\$)				
Contractual services	20	100	40	160
D. Data processing (Bank) (in'000 US\$)	-	10	-	10
E. OPS Resources				
Travel (number of trips)				
Principal supervisor	1	2	1	4
Others	1	2	1	4

Table 4.2

BUDGET FOR EDUCATION-INFORMAL SECTOR
RESEARCH PROJECT (\$)

Location/Item	Total Person Months	Monthly Salary/ Unit Price (in US\$)	Total
<u>Headquarters</u>			
Resident consultant	16	4,200	67,200
Research assistant	16	3,000	48,000
Other consultants	6	3,500	21,000
Consultants, trav. + per diem			24,000
Data processing			10,000
Subtotal			<u>170,200</u>
<u>Peru</u>			
Local Consultants	16	3,000	48,000
Auxiliary workers	10	800	8,000
Printing	6,000 quest.	2.00	12,000
Coding	6,000 quest.	1.30	7,800
Punching	6,000 quest.	1.30	7,800
Data processing			8,000
Overheads			10,200
Seminar			7,000
Contingencies			12,800
Subtotal			<u>121,600</u>
<u>OVERALL TOTAL,</u>			
(FY83, FY84, and FY85)			<u>291,800</u>

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AGREEMENT BETWEEN THE WORLD BANK AND THE DIRECCION
GENERAL DEL EMPLEO, MINISTERIO DE TRABAJO, PERU .

Agreement dated January 26 ,1983 between the International Bank for Reconstruction and Development (hereinafter called the Bank) and the Dirección General de Empleo (hereinafter called the DGE). The Bank represented by Mr. Elwyn Chaparro, Residente Representative; and the DGE represented by Mr. Edgar Flores B., authorized by Resolución Ministerial N°013-83-TRcelebrate the following agreement.

ARTICLE I: This agreement refers to the preparatory stage of a study on the role of education in the informal sector of the economy.

ARTICLE II: The Bank and the DGE agree in the need of creating a merged file matching information on individuals from the Encuestas de Niveles de Empleo, 1981 and 1982; and the Encuestas de Estratos No Organizados, 1982 carried out by the DGE. The variables to be included in this file shall be determined by a working team formed by the Bank and the DGE. These variables shall be of relevance for the analysis of the Urban Informal Sector behavior; and shall be part of the framework of a study on the Role of Education in the Urban Informal Sector.

ARTICLE III: A sampling design and framework for selecting a households sample in Lima Metropolitana to be applied in another study on the Role of Education in the Informal Sector of the Economy shall be constructed on the basis of the above file.


ARTICLE IV: To accomplish the purposes of this agreement, the DGE shall undertake the following tasks:

- a) Provide the working team with the information on the Encuestas de Niveles

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- de Empleo 1981 and 1982, and the Encuestas de Estratos No Organizados 1982.
- b) Employ the computer programming and computing services necessary to create a computerized merged file matching the data on individuals from the above surveys.
 - c) Assign two professionals to be members of the working team.
 - d) Design a sampling frame for selecting the households sample to be used in the future study Role of Education in the Informal Sector of the Economy. This design shall include a description of the existent sampling frame, the sample characteristics and the method of cases selection.
 - e) Furnish to the Bank Representative not later than February 21, 1983 the computerized merged file matching the information on the individuals of 1981 and 1982 surveys.
 - f) Furnish to the Bank Representative the necessary codes to read the computerized merged file.

ARTICLE V: The Bank shall:

- 
- a) Assign one professional to be member of the working team.
 - b) Pay to the DGE a fee of US\$ 5,000 (five thousand dollars) for creating a computerized merged file matching the information on the Encuestas de Niveles de Empleo and the Encuesta de Estratos No Organizados; designing the sampling frame and method to select a household survey. This fee shall be paid to the Ministerio de Trabajo y Promoción Social, DGE as follows:
 - US\$ 2,500 at the signature of this agreement.
 - US\$ 2,500 at the time the Bank receives the document on the households sampling frame design and verifies the technical quality of the computerized merged file.

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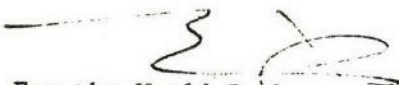
ARTICLE VI: This agreement shall operate under the study make on request modality. The attached analytical budget is part of this agreement.

ARTICLE VII: Any proposition of the DGE to modificate the analytical budget shall be communicated and approved in writing by the Bank Representative.

ARTICLE VIII: The non-consumable goods financed out of the proceeds of this agreement shall be transferred to the DGE by the Bank, at the completion of the agreement.

ARTICLE IX: Both institutions shall have the right of analyzing and publishing the results of this agreement after consulting the other one.

In recognition of this agreement, the representatives of the Bank and the DGE sign this document in the city of Lima on January 26, 1983.



For the World Bank
Mr. Elkyn Chaparro
Resident Representative
representative Mr. George
Psacharopoulos



For the Dirección General de Empleo
del Ministerio de Trabajo y Promoción
Mr. Edgar Flores Benavente

ANALYTICAL BUDGET OF THE AGREEMENT BETWEEN THE WORLD BANK AND THE MINISTERIO
DEL TRABAJO Y PROMOCION SOCIAL, DIRECCION GENERAL DE EMPLEO.

(in current USA dollars)

Items:

1) <u>Personnel.</u>	US\$1.700
-system analysts, computer programmers to prepare the merged file.	
-statisticians to prepare the sampling frame.	
-administration of agree- ment	
2) <u>Goods.</u>	US\$1.500
-computer materials	
3) <u>Services.</u>	US\$1.800
-computer services time	
4) TOTAL	<hr/> US\$5.000



Household Information *

A. Site Identification		Code	B. Survey Information	
(1)	(2)	(3)	(1)	(2)
A. 1. Province		6/ / /	B. 1. Name of Survey Taker	
A. 2. Strata		8/ / /		
A. 3. Region		10/ / /	B.2. Date of Survey	
A. 4. Municipality		12/ / /	B.3. Signature of Survey Taker	
A. 5. Village		14/ /		
A. 6. Cluster Number			B.4. Name of Supervisor	
A. 7. Building Number			B.5. Date of Supervision	
A. 8. Household Number		15/ / / /	B.6. Date of Inspection (coding)	
A. 9. Number of Household Members		18/ / /		
A. 10. Number of Household Members over 10		20/ / /	B.7. Signature of Supervisor	
A. 11. Location or address:				

BASIC QUESTIONNAIRE

* This is a skeleton household questionnaire to be adapted to the research design of this project and the particular country circumstances in which it will be administered.

D. Sources of Household Income

Codes
 Wage 1
 Account 2
 Both 3

What are the sources of income of this household?
 (Place checkmarks in the appropriate boxes.)

Sources of Income	Wage Earner	Own Account	Wage and own account	
(1)	(2)	(3)	(4)	(5)
D. 1. Agriculture	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	22 <input type="checkbox"/>
D. 2. Industry/handicraft	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	23 <input type="checkbox"/>
D. 3. Sales	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	24 <input type="checkbox"/>
D. 4. Transportation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	25 <input type="checkbox"/>
D. 5. Services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	26 <input type="checkbox"/>
D. 6. Other work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	27 <input type="checkbox"/>
D. 7. Government	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	28 <input type="checkbox"/>
D. 8. Private pension & transfer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	29 <input type="checkbox"/>

D. 9. Of the sources of income listed in column 1, which is the main source of income? Go to

D. 10. Of the sources of income listed in column 1, in the case of an own account (self employed) worker, which source represents his main source of income?

D.11

Production and Asset Accounts - Own Account Only

[These will vary considerably from activity to activity and from country to country. The following is therefore only intended as a specimen outline]

For each activity

Production Account: Activity-----

Assets

	<u>Value</u>	<u>Quantity</u> (where relevant)	<u>Quantity</u>	<u>Age</u>	<u>Value</u>
Sales					To be separately listed
<u>plus</u>					
Own Consumption					
<u>less</u>					
Inventory of unsold output at beginning of period					
<u>plus</u>					
Inventory of unsold output at end of period	_____	_____			
= <u>Gross output</u>	_____	_____			
<u>less</u>					
Intermediate inputs (to be prelisted in each case)	_____	_____			
= <u>Value added</u>					
<u>less</u>					
<u>Gross wages paid</u>					
<u>less</u>					
Depreciation (to be imputed)	_____	_____			
= <u>Operating surplus</u>	_____	_____			

F. Identification of Household Member

F1. Name of household member:..... 1 / 1/3/
 F2. Serial number of household member..... 22 / / /
 F3. Marital Status: Single - 1
 Married - 2
 Widowed or divorced -3 24 / /

G. Activities During the Past Week

Can you tell me what you have been doing for the past week, beginning yesterday....(name of day), then the day before yesterday...., 3 days ago, and so on.

G ₁ Day	G ₂ Type of activity	G ₃ Em- ployed (at least 1 hour a day)	G ₄ Employ- ed but did not go to work	G ₅ Look- ing for work	G ₆ Attend- ing school	G ₇ Taking care of the home	G ₈ Other (retired, disabled, etc.)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(7)
Yesterday,.....	/ / ..hour(s)	/ /	/ /	/ /	/ /	/ /	/ /
Day before yesterday,.....	/ / ..hour	/ /	/ /	/ /	/ /	/ /	/ /
3 days ago,.....	/ / ..	/ /	/ /	/ /	/ /	/ /	/ /
4 days ago,.....	/ / ..	/ /	/ /	/ /	/ /	/ /	/ /
5 days ago,.....	/ / ..	/ /	/ /	/ /	/ /	/ /	/ /
6 days ago,.....	/ / ..	/ /	/ /	/ /	/ /	/ /	/ /
7 days ago,.....	/ / ..	/ /	/ /	/ /	/ /	/ /	/ /
(name of day)							
Total	/ / / / hour(s)	/ /	/ /	/ /	/ /	/ /	/ /
Card Column	25-27	28	29	30	31	32	

I

J

(Block H to be asked only if there are no entries in columns 2, 3 and 4).

H. Attending School/Taking care of the house.

H₁. Have you looked for work during the past 3 months?

Yes / / No / /

33 / /

H₂. Why aren't you looking for work?

1. Taking care of the house / /
2. Attending school / /
3. Health reason / /
4. Not prepared to go to work (retired, too old, etc.) / /

34 / /

H₃. If a suitable job was available, would you accept it?

Yes / / No / /

35 / /

J.B. Employment History

J.B.1. At what age did you start working?
If I3.1 or I3.4 are ticked then to JB3

J.B.2. Have you ever been employed by anyone outside your household?
If Yes then give details of past employment history

Employer	Industry	Occupation	Dates From To	Monthly Wage	Permanent or Temporary

J.C. Training

J.C.1. Have you ever received formal training or undertaken an apprenticeship?
If Yes then give details

From	To	Description	
J.D. <u>Unemployment History</u>			
J.D.1. Have you ever been unemployed? If <u>Yes</u> then give details:			
Spell	From	To	Method of Finance
1			
2			
3			
4			
J.E. <u>Migration History</u>			
J.E.1. Have you always lived in (present town)? If <u>No</u> then please give details;			
From	Date	Rural/Urban	

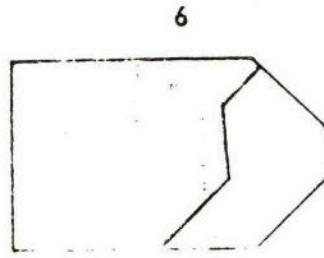
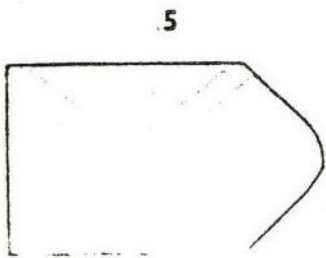
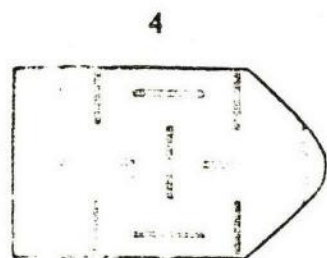
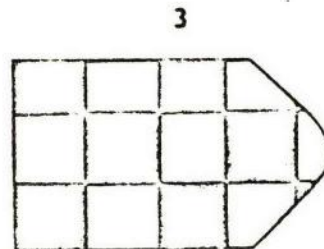
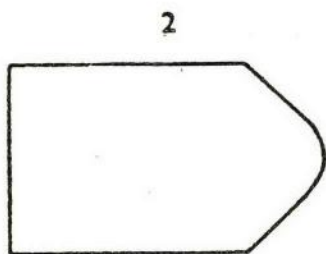
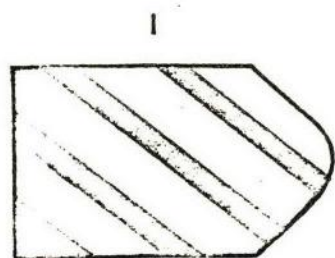
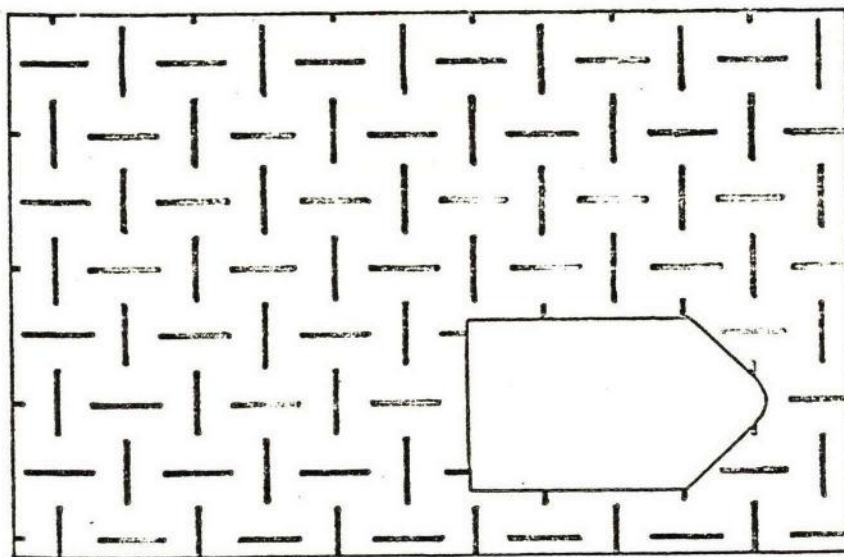
I. Employed	Card Column	J. Looking for Work	Card Column																																
I 1. Where do you work and what kind of work is your employer engaged in? At.....Type of work.....	36 <input type="checkbox"/> <input type="checkbox"/>	JA 1. How long have you been looking for work?months	64 <input type="checkbox"/> <input type="checkbox"/>																																
I 2. What position do you hold or what type of work do you do?.....	38 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	JA 2. Are you looking for full-time or part-time job? 1. Full-time <input type="checkbox"/> 2. Part-time <input type="checkbox"/>	66 <input type="checkbox"/>																																
I 3. Job status: 1. Worker or government employee <input type="checkbox"/> 2. Businessman without employees <input type="checkbox"/> 3. Employed by relative without pay <input type="checkbox"/> 4. Social worker <input type="checkbox"/>	41 <input type="checkbox"/>	JA 3. From what source have you usually received income for your daily needs during this period? 1. Work 3. Family or friends 2. Sometimes work 4. Other	67 <input type="checkbox"/>																																
I 4. How many hours did you work at this job during the past week?.....hours.	42 <input type="checkbox"/> <input type="checkbox"/>	JA 4. Have you ever worked before? Yes <input type="checkbox"/> No <input type="checkbox"/>	68 <input type="checkbox"/>																																
I 5. Is the job you held during the past week the same job you held during the last 3 months? Yes <input type="checkbox"/> No <input type="checkbox"/>	44 <input type="checkbox"/>	Other Income and Expenditures During the Past Month																																	
I 6. What was your net income from this job during the past month? (Do not include income from agriculture listed in block E, column 8.) - In cash Rp..... - In goods Rp..... - Total Rp.....	45 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> (hundreds)	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2" style="text-align: center;">Income</th> <th colspan="2" style="text-align: center;">Expenditures</th> </tr> <tr> <th style="text-align: center;">Type</th> <th style="text-align: center;">Amount Rp</th> <th style="text-align: center;">Type</th> <th style="text-align: center;">Amount Rp</th> </tr> <tr> <th style="text-align: center;">(1)</th> <th style="text-align: center;">(2)</th> <th style="text-align: center;">(3)</th> <th style="text-align: center;">(4)</th> </tr> </thead> <tbody> <tr> <td>1. Pension (Retired)</td> <td></td> <td>1. Remittances sent</td> <td></td> </tr> <tr> <td>2. Remittances received</td> <td></td> <td>2. From deposits or savings</td> <td></td> </tr> <tr> <td>3. Withdrawal from deposits or savings</td> <td></td> <td>3. Other (loans, payments, lotteries, investments, other funds)</td> <td></td> </tr> <tr> <td>4. Other, (borrowing money, etc.)</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;">Total</td> <td style="text-align: center;">.....</td> <td style="text-align: center;">Total</td> <td style="text-align: center;">.....</td> </tr> </tbody> </table>		Income		Expenditures		Type	Amount Rp	Type	Amount Rp	(1)	(2)	(3)	(4)	1. Pension (Retired)		1. Remittances sent		2. Remittances received		2. From deposits or savings		3. Withdrawal from deposits or savings		3. Other (loans, payments, lotteries, investments, other funds)		4. Other, (borrowing money, etc.)				Total	Total
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2. Remittances received		2. From deposits or savings																																	
3. Withdrawal from deposits or savings		3. Other (loans, payments, lotteries, investments, other funds)																																	
4. Other, (borrowing money, etc.)																																			
Total	Total																																
I 7. Do you have any jobs in addition to this job? Yes <input type="checkbox"/> No <input type="checkbox"/> (proceed to line I 10)	50 <input type="checkbox"/>		69 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>																																
I 8. How many hours did you work last week on all other jobs?.....hours	51 <input type="checkbox"/> <input type="checkbox"/>		74 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>																																
I 9. What was your net income from all other jobs during the past month? (Do not include income from agriculture listed in block E, column 8.) - In cash Rp..... - In goods Rp..... - Total Rp.....	53 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> (hundreds)																																		
I 10. How much income did you receive during the past month from land and house rentals and interest payments?	58 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>																																		
I 11. If you have the time available would you be willing to accept additional work? Yes <input type="checkbox"/> No <input type="checkbox"/>	63 <input type="checkbox"/>																																		

A. General Ability — Raven's Progressive Matrices Rationale

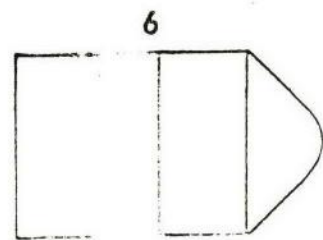
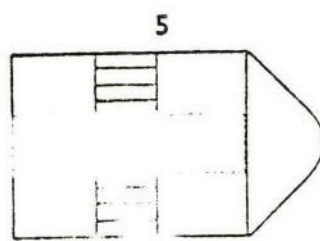
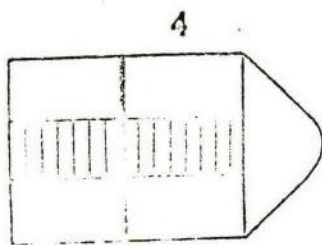
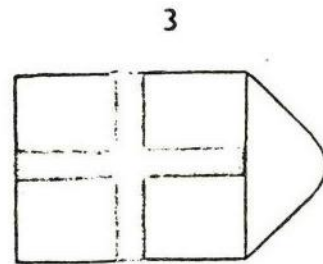
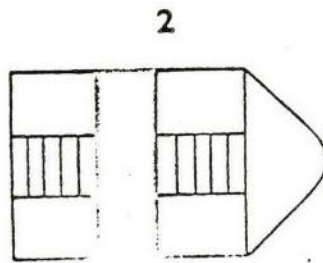
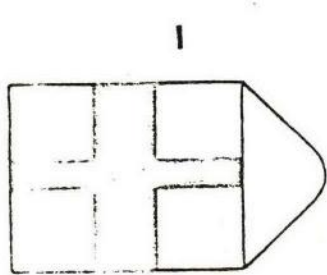
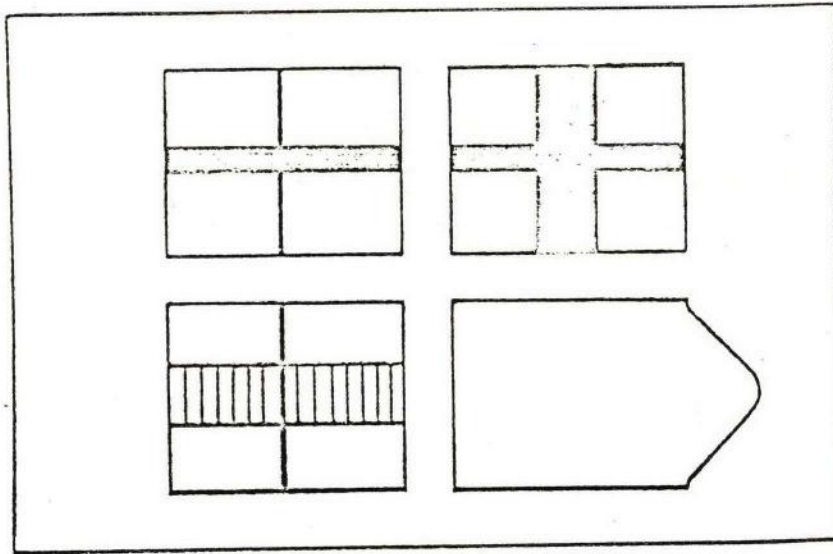
The geneology of the Raven's Progressive Matrices (or RPM) can be traced back to the investigations of Spearman into the nature of intelligence. It was his view that an undifferentiated concept of intelligence was less than adequate in describing cognitive abilities. Starting with the Standard RPM series, designed to sample the general range of ability, we will be able to provide a means to assess an adult's present ability to perceive and think clearly, irrespective of past experiences or present ability for verbal communication. The scales can be described as "tests of observation and clear thinking" and have been widely used cross-nationally with high levels of reliability.

— A —

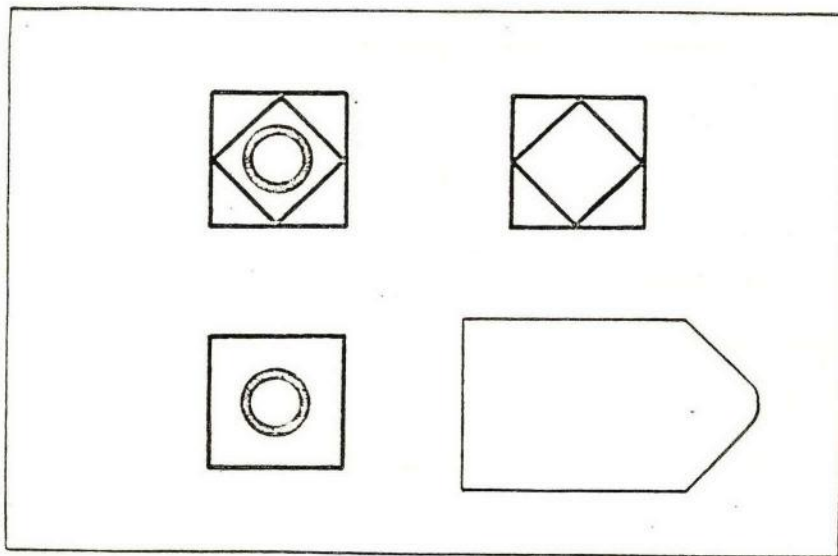
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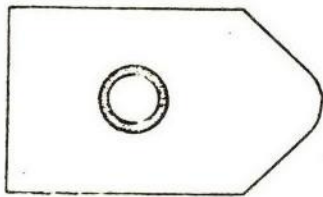
A₃ 12



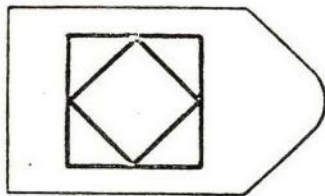
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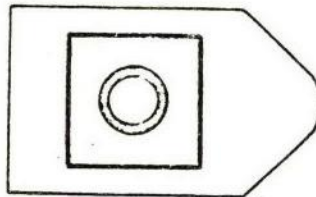
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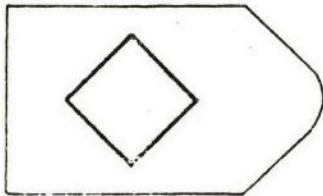
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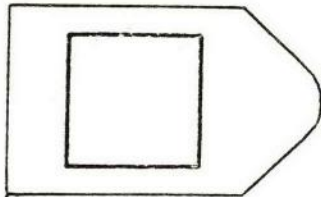
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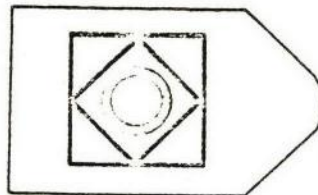
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5



6



B. Overall Modernity - the Short Form Rationale

Each of these items correlates well with the larger Overall Modernity scales in each of the six countries in the Inkeles (Harvard) study, at a highly significant level. Moreover, each of the questions was strongly correlated with the independent variables of education, urban experience and occupation. These items have been extensively incorporated in cross-cultural research. Since it is more or less inevitable that one or another question from a cross-national set may not serve well in a particular country, we have identified alternative questions for each of the above. Indeed we may ask the suggested alternate question as well, thus providing a pool of items which are theoretical equivalents, from which we may select those that are best understood and most discriminating in this particular study.

*Purely Attitudinal Items**

1. Have you ever (thought over so much) gotten so highly concerned (involved) regarding some public issue (such as . . .) that you really wanted to do something about it?
Frequently / Few times / Never
2. If schooling is freely available (if there were no kinds of obstacles) how much schooling (reading and writing) do you think children (the son) of people like yourself should have?
3. Two 12-year-old boys took time out from their work in the corn (rice) fields. They were trying to figure out a way to grow the same amount of corn (rice) with fewer hours of work.
The father of one boy said: "That is a good thing to think about. Tell me your thoughts about how we should change our ways of growing corn (rice)."
The father of the other boy said: "The way to grow corn (rice) is the way we have always done it. Talk about change will waste time but not help."
Which father said the wiser words?
4. What should most qualify a man to hold high office?
Coming from (right, distinguished, or high) family background
Devotion to the old and (revered) time-honored ways
Being the most popular among the people
High education and special knowledge
5. Which is most important for the future of (this country)?
The hard work of the people
Good planning on the part of the government
God's help
Good luck
6. Learned men (scholars, scientists) in the universities are studying such things as what determines whether a baby is a boy or girl and how it is that a seed turns into a plant. Do you think that these investigations (studies) are:
All very good (beneficial) / All somewhat good (beneficial)
All somewhat harmful / All very harmful
Some people say that it is necessary for a man and his wife to limit the number of children to be born so they can take better care of those they do have (already have).
Others say that it is wrong for a man and wife purposely (voluntarily) to limit the number of children to be born.
Which of these opinions do you agree with more?
7. Which one of these (following) kinds of news interests you most?
World events (happenings in other countries)
The nation
Your home town (or village)
Sports
Religious (or tribal, cultural) events (ceremonies) or festivals
8. If you were to meet a person who lives in another country a long way off (thousands of kilometers / miles away), could you understand his way of thinking?
Yes / No

9. Do you think a man can be truly good without having any religion at all?
Yes / No

Behavior-Information Items

10. Do you belong to any organization (associations, clubs), such as, for example, social clubs, unions, church organizations, political groups, or other groups? If "Yes," what are the names of all the organizations you belong to? (Scored for number of organizations.)
11. Would you tell me what are the biggest problems you see facing (your country)? (Scored for number of problems or words in answer.)
12. Where is (in what country is the city of) Washington / Moscow? (Scored correct or incorrect.)
13. How often do you (usually) get news and information from newspapers?
Everyday / Few times a week
Occasionally (rarely) / Never

Office National de Formation Professionnelle, Ivory Coast

Le développement socio-économique de la Côte d'Ivoire, comme celui de tous les pays du continent africain, passe par la formation des hommes. Celle-ci constitue pour la Côte d'Ivoire une priorité, qui se traduit, dans les faits, par l'affectation d'une part particulièrement importante du budget de l'Etat (46 % du budget de fonctionnement) aux dépenses d'éducation.

Mais quelle éducation et pour quoi faire ? "L'éducation au service du développement" tel est le mot d'ordre donné par le 7e Congrès du PDCI-RDA. Dans le contexte ivoirien, où l'homme n'est pas seulement l'artisan de la croissance économique mais aussi et surtout le premier bénéficiaire de celle-ci, mettre "l'éducation au service du développement" c'est à la fois répondre aux besoins du développement économique et aux aspirations de l'ensemble de la population.

Pour atteindre ces objectifs, la Côte d'Ivoire doit à la fois assurer un enseignement de base à tous les citoyens et une formation professionnelle à tous ceux qui en ont besoin pour exercer un emploi productif qualifié.

Des objectifs aussi ambitieux pour un pays dont les ressources financières sont limitées, nécessitent une planification rigoureuse des actions, un suivi permanent des besoins de l'économie, des réalités de l'emploi et un pilotage attentif du système de formation.

Dans le domaine de la formation professionnelle, la Côte d'Ivoire s'est doté d'un instrument original et efficace pour assumer cette tâche difficile : l'Office National de Formation Professionnelle.

X

X

X

Créé en 1966, et patronné alors par le Ministère du Plan, il est placé sous la tutelle du Ministère de l'Enseignement Technique et de la Formation Professionnelle lors de la création de ce dernier, en 1970.

.../.

Emanation de l'administration, il est en même temps en prise directe sur l'entreprise, tant par les fonctions qui lui sont dévolues, que par les modalités de son financement.

L'Office National de Formation Professionnelle est en effet un établissement public à caractère administratif qui a la particularité de tirer ses moyens d'existence, mais aussi les moyens nécessaires à la promotion de la formation, de taxes à la formation professionnelle. Celles-ci lui sont directement affectées pour assurer d'une part son fonctionnement et participer d'autre part au financement d'actions de formation. C'est ainsi que la taxe d'apprentissage (0,5 % de la masse salariale) et la taxe à la formation continue (1,5 % des salaires) viennent alimenter le budget de l'Office National de Formation Professionnelle et le Fonds National de régulation pour la formation continue qui, lui, sert essentiellement à financer la formation permanente dans les entreprises.

Le sort de l'ONFP est ainsi lié à celui des entreprises et ses moyens, directement conditionnés par le niveau d'activité de celles-ci.

X

X

X

L'Office National de Formation Professionnelle a pour tâche essentielle d'assurer un meilleur ajustement de la formation aux nécessités de l'emploi afin de faire de chaque Ivoirien, un agent actif du développement du pays. Il assume ainsi quatre fonctions primordiales :

- l'étude des relations entre la formation et l'emploi et la formulation des grandes orientations qui en découlent ;
- la programmation des actions de formation ;
- la promotion de ces actions notamment par la participation au financement et à l'encadrement de certaines d'entre elles ;

.../.

- L'évaluation des actions de formation entreprises par le Ministère de l'Enseignement Technique et de la Formation Professionnelle.

L'Office intervient aussi bien au niveau de la formation initiale qu'à celui de la formation professionnelle continue, tant en milieu urbain qu'en milieu rural. Sa souplesse de fonctionnement et son autonomie de gestion lui permettent, en évitant les lourdeurs administratives, de jouer pleinement son rôle.

X

X

X

Concrètement qu'a donc réalisé l'ONFP durant les quinze (15) premières années de son existence ?

En matière d'études, l'ONFP s'est peu à peu affirmé comme une source importante d'information aussi bien dans le domaine de l'emploi que dans le domaine de la formation. Son Centre de documentation spécialisé en la matière joue à ce niveau un rôle majeur au niveau national mais également au niveau inter-africain puisqu'il est en même temps le Centre de documentation du Centre Interafricain pour le Développement de la Formation (CIADFOR). Le champ d'étude couvert par l'ONFP n'est pas limité au seul domaine relevant de son Ministère de tutelle, mais concerne l'ensemble des problèmes posés par l'utilisation et la valorisation des ressources humaines en Côte d'Ivoire.

C'est ainsi qu'un dispositif cohérent d'études s'est peu à peu mis en place, comprenant :

- des enquêtes sur l'emploi tant dans le secteur moderne que dans le secteur informel, débouchant sur des statistiques d'emploi régulièrement mises à jour, ainsi que sur l'analyse du contenu des emplois et des modalités d'accès à ceux-ci.

- des études sur le système de formation permettant de produire régulièrement des statistiques scolaires et d'apprécier le rendement, le coût et l'efficacité de la formation.

.../.

- enfin, et sur la base de ces études, la confection d'un bilan prévisionnel emploi-formation permettant de comparer les besoins en main d'oeuvre de l'économie nationale et la "production" du système de formation.

C'est sur ce bilan que prend appui la concertation entre planificateurs, formateurs et employeurs, qui permet de dégager les orientations des actions à mener en vue d'une meilleure adéquation de la formation à l'emploi.

La programmation prend le relais de ces études pour les traduire en termes de projets ou actions de formation. Elle est en effet chargée de mettre en oeuvre les moyens permettant de concrétiser les décisions concernant les créations ou modifications des structures de formation dépendant directement du Ministère de l'Enseignement Technique et de la Formation Professionnelle. Elle assure trois (3) fonctions principales :

- la programmation générale et financière qui élabore les projets, les traduit en termes financiers et recherche les financements nécessaires à leur réalisation.

- la programmation technique et pédagogique qui précise les modalités pédagogiques du fonctionnement des structures de formation et les contraintes techniques qui en résultent.

- le suivi et le contrôle des réalisations.

Les structures, une fois mises en place, sont gérées par les Directions Centrales du Ministère de l'Enseignement Technique et de la Formation Professionnelle. Mais l'Office National de Formation Professionnelle intervient de nouveau, au niveau de l'évaluation et du contrôle de la formation.

Il est en effet chargé de vérifier que les réalisations et les résultats obtenus répondent bien aux objectifs fixés, d'identifier les causes des écarts éventuels, de proposer les correctifs nécessaires.

Des études sont donc menées systématiquement en vue de disposer en permanence de données complètes sur le système de formation et les projets de réalisation. Des enquêtes ponctuelles permettent en outre de faire, en fonction des besoins, des bilans sectoriels.

X

X

X

Ainsi l'Office National de Formation Professionnelle intervient essentiellement en amont et en aval de la formation. Il n'est pas pour autant écarté de l'action, bien au contraire. Sa fonction de promoteur et les possibilités de financement qui sont les siennes font de l'ONFP un agent actif de la formation. Quelques exemples suffiront à le montrer.

L'ONFP, dès sa création, a participé, sur ses fonds propres, à la réalisation d'établissements de formation; on peut citer notamment : le Centre Poids Lourds (devenu depuis Centre de Perfectionnement aux Métiers de l'Automobile), le Centre des Métiers du Bâtiment (devenu le Centre de Perfectionnement aux Métiers du Bâtiment), le Centre de Formation Professionnelle de San-Pédro, le Centre de Perfectionnement Audio-Visuel (CEPAV) ainsi que les Centres de Bimbresso et d'Odienné.

Il assure par ailleurs la gestion et le fonctionnement de structures de formation présentant un caractère expérimental, telles que le Lycée Professionnel Hôtelier ou, en milieu rural, les Unités Mobiles de Formation (spécialisées selon les cas dans les métiers du bâtiment ou de l'agro-mécanique).

Enfin l'Office National de Formation Professionnelle a pour charge de lancer et de gérer certaines opérations nouvelles, telles que l'apprentissage dans les entreprises, la formation professionnelle continue et d'assurer la mise en place d'établissements de formation de style nouveau, tels les 5 lycées professionnels de Jacquerville, Man, Odienné, San-Pédro et Gagnoa.

X

X

X

.../.

L'Office National de Formation Professionnelle apparaît donc comme un outil privilégié de promotion de l'emploi et de valorisation des ressources humaines nationales dans les différents secteurs de l'économie nationale.

Financé par les entreprises du secteur privé moderne, l'Office n'oublie pas pourtant que l'essentiel de la population ivoirienne exerce ses activités dans le secteur informel et particulièrement en milieu rural. L'agriculture ayant financé en grande partie le développement des secteurs secondaire et tertiaire, par un juste retour des choses, ces derniers contribuent à la promotion du monde rural. C'est ainsi que l'ONFP intervient aussi bien au niveau des formations de base que de la formation continue pour favoriser la promotion des petites entreprises et du secteur agricole.

En assurant ainsi un meilleur ajustement de la formation aux réalités de l'emploi en Côte d'Ivoire, l'Office National de Formation Professionnelle participe à la fois au développement économique du pays et à la promotion des hommes qui en sont le véritable moteur et les premiers bénéficiaires.

X

X

X

Au delà des frontières de la Côte d'Ivoire, l'Office National de Formation Professionnelle oeuvre activement pour une coopération étroite entre les pays d'Afrique dans le domaine qui est le sien. Il est en effet membre du Centre Interafricain pour le Développement de la Formation (CIADFOR), dont le Secrétaire Général est aussi le Directeur Général de l'ONFP.

Dans ce cadre une collaboration directe entre les organes de formation des différents pays d'Afrique s'est instaurée et se développe. Le CIADFOR regroupe en effet actuellement 19 pays africains et compte rassembler, à terme, l'ensemble des pays du continent, qui disposent ainsi d'un instrument indispensable pour promouvoir, ensemble, la valorisation de ce qui constitue la première richesse de notre continent : ses hommes.

JUILLET 1982

UNIVERSIDAD DEL PACIFICO

CENTRO DE INVESTIGACION

**PLAN DE
TRABAJO**
1982 - 1983

PUBLICACIONES



LA UNIVERSIDAD DEL PACIFICO

La Universidad del Pacifico es una universidad privada cuya constitución y funcionamiento se ajustan a la legislación universitaria y educativa del país.

Fue creada como respuesta a la necesidad de conformar un centro superior de nivel de excelencia que atendiese las tareas de formación universitaria, de investigación y de prestación de servicios en las áreas de las ciencias económicas, sociales y administrativas que el proceso de desarrollo del país requiere con urgencia.

El 28 de febrero de 1962 el Gobierno Peruano autorizó la fundación de la Universidad del Pacifico mediante el Decreto Supremo No. 8, por el cual se aprobaban también sus Estatutos. Un nuevo reconocimiento legal le fue extendido por el inciso (b) del artículo 167 de la Ley Orgánica de la Universidad Peruana (Decreto Ley 17437, de febrero de 1969). Actualmente desarrolla sus labores académicas a través de cuatro Programas Académicos –Economía, Contabilidad, Administración y Post-Grado en Administración– y de cinco Departamentos Académicos –Matemáticas, Humanidades, Economía, Administración y Contabilidad, y Ciencias Sociales y Políticas–.

La naturaleza y funcionamiento de la Universidad se inspiran en los siguientes principios generales:

1. La necesidad de formar profesionales y técnicos científicamente competentes y socialmente abiertos a una mentalidad justa al servicio de las necesidades y desarrollo de la comunidad peruana.
2. La importancia de fomentar la investigación científica, humanística y tecnológica dirigida a contribuir efectivamente a la solución de los problemas de la comunidad peruana.

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3. El propósito de promover un eficaz diálogo positivo entre las personas que se integran dentro de su conformación y con las personas, entidades o instituciones que componen el campo social que le circunda.
4. La finalidad de servir a las necesidades del país y como tal no perseguir fines de lucro en ninguna de sus manifestaciones.
5. La garantía de independencia en su funcionamiento y en su gobierno, que es ejercido sólo por sus miembros bajo el principio de la autonomía que le es propia y necesaria para lograr plenamente sus fines específicos, en el campo normativo, académico, pedagógico, administrativo y financiero.

El régimen diseñado por la Universidad persigue la formación integral de sus alumnos a través del seguimiento del currículo académico, así como del desarrollo de diversas actividades que se contienen en el currículo paracadémico. El currículo académico o el Plan de Estudios es elaborado de acuerdo con los requerimientos de conocimiento profesional en cada una de las áreas de formación a cargo de la Universidad.

Dentro del currículo paracadémico se comprenden aquellas actividades que la Universidad considera necesarias para proporcionar a los alumnos no sólo una formación profesional sino también una formación integral. Forman parte del currículo paracadémico, por ejemplo, las labores investigacionales en sus diversos niveles, dada la indiscutible importancia que ellas revisten para una auténtica capacitación profesional. Estas actividades pueden ser desarrolladas en el Centro de Investigación.

EL CENTRO DE INVESTIGACION

El Centro de Investigación de la Universidad del Pacífico tiene por objetivo promover, dirigir, realizar y difundir investigaciones interdisciplinarias y labores conexas enmarcadas dentro de su reglamento. Su naturaleza y funcionamiento se orientan, dentro de la búsqueda de la verdad, a la formulación de modelos que conduzcan a un orden social humano, libre y justo, mediante la consecución de los siguientes objetivos instrumentales:

- a) Reflexionar y dar a conocer la realidad nacional en sus aspectos económicos, sociales y políticos, mediante la presentación, el análisis y la evaluación crítica de su problemática.
- b) Formular nuevas categorías conceptuales que lleven a proponer evaluaciones integrales de los problemas del país, procurando la formación de una escuela de pensamiento fundada en los principios de la Universidad.
- c) Contribuir a la formación integral de los miembros de la comunidad universitaria y al desarrollo de una metodología de enseñanza acorde con los propósitos y recursos institucionales.

El Centro cuenta con un Consejo Directivo presidido por el Director del Centro e integrado por representantes de los investigadores y de los estudiantes. Dos veces al año, el Consejo Directivo se amplía también con los representantes de los Departamentos Académicos y de los alumnos de cada uno de los Programas Académicos. El Director del Centro de Investigación es el representante del Centro, preside el Consejo Directivo y ejerce la gestión administrativa. Asimismo, el Centro cuenta con los servicios de asistencia, asesoría y apoyo administrativo internos.

El Centro está integrado por profesores de diversos Departamentos Académicos de la Universidad en el área de las Ciencias Sociales, que prestan sus servicios en régimen de tiempo completo. Actualmente, integran el Centro de Investigación trece (13) profesores en calidad de miembros del mismo. Asimismo, recibe como afiliados temporales a profesores de universidades extranjeras en calidad de miembros visitantes.

El trabajo del Centro es, fundamentalmente, interdisciplinario y en él tienen cabida las perspectivas propias de las distintas Ciencias Sociales. Sus miembros son graduados en economía, sociología, ciencia política, administración, ingeniería y jurisprudencia. Sus estudios de post-gradó han sido cursados en las mismas áreas, aunque hay el caso de sociólogos e ingenieros con post-gradó en economía, y de administradores con post-gradó en economía, de economistas con post-gradó en ciencia política, y de administradores con post-gradó en sociología.

El Centro orienta sus trabajos a la formulación de modelos que conduzcan a un orden social humano, libre y justo. Para ello, dirige sus esfuerzos a reflexionar sobre los aspectos económicos, sociales y políticos de la realidad nacional, analizando críticamente su problemática y proponiendo al respecto soluciones integrales.

En el Centro se estudia la realidad nacional e internacional en sus aspectos económicos, sociales y políticos, mediante la presentación, el análisis y la evaluación crítica de su problemática, con el fin de aportar nuevos elementos científicos, tanto en sus aspectos teóricos como metodológicos.

Por otro lado, el Centro trata de orientar la formación de los miembros de la comunidad universitaria hacia un trabajo intelectual donde no solo se transmitan conocimientos teóricos y técnicos sino, sobre todo, se logre una adecuada capacitación científica y donde la investigación se oriente hacia metas del más alto nivel científico.

Además de las labores de investigación a su cargo, el Centro desarrolla una actividad plural de diálogos y seminarios con invitados especiales, así como de publicaciones. Edita regularmente dos revistas: "Apuntes" y "Estudios Andinos".

Su producción a nivel de investigaciones se ha concretado en un conjunto de publicaciones.

El Centro de Investigación tiene también como una de sus funciones —y está en condiciones ventajosas para hacerlo— la de prestar asesoría en los campos de su competencia a entidades y organizaciones públicas y privadas, nacionales, extranjeras e internacionales.

Lima, abril de 1982.



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File Title Informal Sector - Proposal Preparation - January to March 1983 - RPO 672-98		Barcode No. 30461072		
Document Date	Document Type CV / Resumé			
Correspondents / Participants				
Subject / Title CVs of James Keith Hinchliffe, Peter Robert Fallon, Donald Holsinger, Folke Kafka, Adolpho Figueroa, Francoise Achio, Aly Coulibaly, Ibrahima Guirassi, Robert Anderson, Diallo Bademba, and Achi Atsain				
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Additional Comments		The item(s) identified above has/have been removed in accordance with The World Bank Policy on Access to Information or other disclosure policies of the World Bank Group.		
		<table border="1"><tr><td>Withdrawn by Ann May</td><td>Date March 23, 2023</td></tr></table>	Withdrawn by Ann May	Date March 23, 2023
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Jan. 83

FORM NO. 75
(9-78)

THE WORLD BANK

ROUTING SLIP		DATE:
		January 6, 1982
NAME		ROOM NO.
APPROPRIATE DISPOSITION	NOTE AND RETURN	
APPROVAL	NOTE AND SEND ON	
CLEARANCE	PER OUR CONVERSATION	
COMMENT	PER YOUR REQUEST	
FOR ACTION	PREPARE REPLY	
<input checked="checked" type="checkbox"/> INFORMATION	RECOMMENDATION	
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REMARKS:		
<p>Please find attached a revised draft of the Informal Sector proposal we are circulating for supporting signatures to the Departments/Divisions concerned. Your help would be appreciated towards meeting the January 14 submission deadline of the Research Committee. Thank you.</p>		
FROM:	ROOM NO.:	EXTENSION:
George Psacharopoulos	D-1138	75827

PART III. IMPLEMENTATION

1. DATE WORK TO START: April 1983	2. DATE FIRST DRAFT EXPECTED: September 1985	3. DATE FINAL REPORT EXPECTED: December 1985
4. IMPLEMENTATION METHOD: Names		
(a) <input checked="" type="checkbox"/> Bank Staff	<u>G. Psacharopoulos, D. Mazumdar, J. van der Gaag, E. Chaparro</u>	
(b) <input checked="" type="checkbox"/> Individual Consultants	<u>Central consultants to be appointed</u>	
(c) <input checked="" type="checkbox"/> Developing Country Contractor/Institute	<u>Centro de Investigacion, Universidad de Pacifico, Lima</u> <u>Office National de Formation Professionnelle, Abidjan</u>	
(d) <input type="checkbox"/> Developed Country Contractor/Institute		
(e) <input checked="" type="checkbox"/> Conference or Seminar	<u>Lima, Abidjan</u>	
5. PROPOSED LIAISON WITH OPERATING DEPARTMENTS: Western Africa Projects and Latin America Projects DRD, Res. Mission, Lima		
6. REPORTS EXPECTED IN THE FIRST YEAR: Interim Progress Report, July 1984		

PART IV. FINANCIAL AND STAFF RESOURCES

1. DOLLAR COSTS (ESTIMATED DISBURSEMENTS BY FY):	FY 83	FY 84	FY 85	After FY	Total
(a) Consultants Fees	16,400	60,000	32,600		109,000
(b) Travel	3,600	13,200	7,200		24,000
(c) Data Processing		10,000	-		10,000
(d) Other Contractual Services	37,600	137,800	75,200		250,600
(e) Contingencies	-	-	26,800		26,800
Total	57,600	221,000	141,800		420,400
2. STAFF REQUIREMENTS (ESTIMATED STAFFWEEKS BY FY):					
(a) Professional	3	12	4		19
(b) Assistant (Included in 1 (d) above)					
3. STAFF COSTS ^{1/}					
(a) Professional	8,700	37,200	13,200		59,100
(b) Assistant					
4. TOTAL COST: (1 + 3)	66,300	258,200	155,000		479,500

^{1/} Staffweeks should be costed as follows (\$'000 per staffweek): Professional: FY83 - 2.9; FY84 - 3.1; FY85 - 3.3; FY86 - 3.6.
Assistant: FY83 - 1.3; FY84 - 1.4; FY85 - 1.5; FY86 - 1.6.

DRAFT
(Revised 1/3/83)

EDUCATION AND INFORMAL
SECTOR EMPLOYMENT

A RESEARCH PROPOSAL

(RPO 672-98)

The World Bank
Education Department
Operations Policy Staff
January 1983

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ABSTRACT

0.01 This research proposal addresses an issue of high importance for Bank operations that has not so far been analyzed in the existing literature: What is the economic performance of those graduates of the school system who are engaged in the so-called "informal sector" of the economy of developing countries.

0.02 The existing empirical evidence on the economic role of education has been based almost exclusively on samples of modern sector wage employees. This treatment would be valid if wages for similar kinds of labor were equalized across sectors by means of perfect mobility. In such a case it would be immaterial what sector is sampled in order to assess the economic effect of education. But of course even casual observation of developing country labor markets suggests that such equalization does not take place. Minimum wage and other labor legislation, unionization and other institutional factors characterize particular labor markets. Due to these restrictions to entry, wages are above those levels needed to clear these markets and there is an excess supply of labor to them. In most developing countries, however, the majority of urban labor ends up working in labor markets where these legislations and institutional factors are less binding and hence there are less restrictions to entry. This section of the labor force usually includes wage labor working in small, non-unionized and non-registered enterprises, self employed labor and those in family businesses. In these activities wages perform more of a clearing role and therefore reflect better the relative scarcity or abundance of different types of labor and hence their contribution to the economy.

0.03 A previous Research Committee project on "Farmer Education and Farm Efficiency" has significantly contributed to our knowledge on the effect of education on rural productivity. A more recent Research Committee project on the "Labor Market Consequences of Educational Expansion" is generating results on the effect of education in the protected sector of the economy. The proposed project aims at filling the knowledge gap on the economic performance of the educated who are "employed" in the non-farm, non-modern sector in developing countries.

0.04 This gray area of economic activities, often referred to as the "informal sector", accounts for more than one half of total urban employment in many poor countries. The proportion of new flows of graduates who will seek first entry into the informal sector is even higher. Consequently, any educational policy based solely on labor market conditions in the modern sector of the economy will miss an important empirical dimension of the problem.

0.05 The proposal addresses one central research question, the answer to which would enhance the existing knowledge on the socio-economic role of schooling in developing country settings: Do the more educated engaged in the informal sector, other things being equal, "perform" or behave differently from the less educated? The performance test goes beyond the traditional earnings differential and extends to modernity attitudes, small enterprise efficiency and job search behaviour.

0.06 The research design is based on household survey type data so that a sufficient number of modern sector participants is included as a control group. This is important in view of addressing mobility questions between the two sectors, especially during the job search process. In addition, the intersectoral coverage will increase our knowledge on the distribution of the output of the school system into different sectors

and, hence, will permit the weighting of the effect of education in the economy as a whole.

0.07 Preparatory work has identified five potential research sites for this project: Upper Volta, Ivory Coast, Peru, Indonesia and China. The criteria used were a combination of the existence of a large informal sector in the particular country and previous work on it as to allow proper sampling; the importance of the country for Bank operations regarding human resource development; the willingness of the Government to support the research project; and the existence of local institutions for research collaboration. For timing and budgetary reasons, the present phase of the research refers only to the Ivory Coast-Upper Volta complex and Peru. Preparatory work on China and Indonesia continues so as to possibly include them at a later stage as a follow up to the proposal in hand.

I. MAIN ISSUES AND ANALYTICAL FRAMEWORK

A. Introduction

1.01 Human resource development is increasingly recognized as a strategic factor contributing to the growth and equity goals of developing countries. Investment in education is the most salient means by which "human resource development" is actually put to practice and operationalized. Both borrowers and the Bank are eager to know where the investment priorities in education lie so that investment (lending) takes place on the basis of country-specific empirical evidence rather than as a result of intuition or extrapolation of results from other countries.

1.02 Much of the information used to assess proposed education investment projects in poor countries is drawn from statistical data on formal sector wage employment. Although it is true that the most highly qualified will eventually find modern or formal sector jobs, it has become clear in recent years that a significant proportion of all individuals who have received some schooling can expect to spend at least part of their working lives outside of this sector. In rural areas this usually means farm employment and much valuable research has been undertaken by the Bank and other institutions and individual researchers on the complex relationship in rural settings between education and agricultural productivity (e.g., Lockheed, Jamison and Lau 1980 and Jamison and Lau 1982). And of course work is continuing on the effect of education among those employed by organized establishments (e.g., Knight and Sabot 1981).

The main issues

1.03 Any given recent output of the school system (ΔE , as a flow) is expected to seek first "employment" in one of the following activities/sectors:

1. Agriculture
2. The formal/organized/protected sector
3. The informal/unprotected sector

The latter could be defined as the set of economic activities where the wage rate has a market clearing function (e.g., see Harberger 1971).

1.04 If labor markets across sectors were perfect, then it would not matter from which sector one took the evidence to assess the economic effect of education: agricultural productivity differentials, formal private sector differentials or even civil service pay differentials by level of education would be equalized, hence one could sample any sector to arrive at the effect of ΔE on the economy as a whole.

1.05 Clearly, labor markets are not perfect, especially in developing countries. The incremental output of the school system is expected to be engaged in one of the three sectors (i) described above with certain probabilities (P_i) and marginal products (W_i). Hence the overall effect of investment in terminal education of a given cohort (ΔY) could be described as

$$\Delta Y = \sum_i P_i W_i (\Delta E_i)$$

1.06 The proposed project aims at supplementing our knowledge on the economic effect of education by focusing on sector 3, the educational dimension of which has not yet received attention in the empirical literature. And since education also affects people's behavior regarding the sector of initial activity and mobility between activities, the project aims at increasing our understanding on the role of education in determining the intersectoral allocation of labor.

1.07 Interest in this topic within the Bank derives from a lack of assurance on the economic performance of graduates of the school system across the whole labor market. Manpower surveys and the resulting

forecasts of skill needs in developing countries have been based largely on data representative of the urban formal sector. 1/ Similarly, cost-benefit studies have typically used data referring only to those workers employed for wages and salaries in the formal private sector and in the public sector. 2/ However, in the case of most less developed countries this population is a small fraction of the country's labor-force. In the cities alone, over one half of workers are commonly employed in the informal sector, yet little is known about the effect which schooling has on their performance in this sector. While much has been written about the effects of schooling on occupational attainment, earnings potential, job productivity and other issues, the focus has been on the formal sector. Bowman (1980, p.13) has described this situation very clearly:

"In reading the results of ... rate-of-return investigations of education ... it is important that we ... remind ourselves of the systematic bias ... against the inclusion of returns to education in nonwage activities. Most of the rate of return studies are based on data of wage and salaried persons only. No one knows how much of a contribution to growth may derive from a better educated population of independent entrepreneurs."

1.08 Clearly, as the informal sector grows and becomes the sector in which very many school leavers will seek their first job, it becomes increasingly important to analyse the economic effects of schooling in this sector if investment decisions in education are to be linked to an accurate assessment of economic returns.

1/ For example, see Government of Malaysia, (1973).

2/ See Psacharopoulos (1973), Appendix B for the earnings sources of 28 cost-benefit studies in LDC's.

Goals and Objectives

1.09 There are two main objectives of the proposed study. The first is to examine the relationship between different levels of education and training and the productivity of either informal sector individuals or the enterprises in which they are engaged. The second is to assess in detail the duration and nature of job search and the role which the informal sector might play in this by either financing or impeding search time.

1.10 (1) Productivity. Turning to the first of these, individual productivity can be proxied by labor earnings suitably measured (as explained below) while the productivity of enterprises can be measured directly. The rationale for this part of the research is straightforward. If the formal sector employs only a small proportion of the total labor force and if this sector's wage and salary structure is a poor guide to economywide differences in productivity associated with education, then any assessment of educational projects based on this information will be both unreliable and faulty. Information on earnings in the formal sector should be supplemented with comparable data for other sectors of the economy. It will, therefore, be possible to use the results of this part of the study to assess the sensitivity of existing educational cost-benefit procedures to the inclusion of earnings data from the informal sector.

1.11 The examination of the relationship between education and productivity will, however, go further than this. It is also proposed that the intervening mechanisms of the relationship e.g. attitudes, general knowledge and numerical skills, be separately investigated. This breakdown of the mechanism by which education or training raises

individual productivity should, in combination with the overall measures, yield much assistance to Bank staff both in determining the composition of desirable educational expansion and the appropriate orientation of educational curricula and training programmes.

1.12 (2) Job search. The other central objective of the study is to examine the character and mechanisms of job search and the impact of the informal sector on these. Models of job search typically compare the long run benefits of people remaining unemployed so as to be able to maximize the search for a formal sector job (presumed to result in higher earnings) with the benefits of more immediate informal sector employment. In this way, school leaver unemployment is seen to be a result of individual choice. A central assumption of these models is that the informal sector is a 'free entry' sector and that employment opportunities are always readily available, but at a lower income than in the formal sector. Whether or not this assumption is a correct one significantly affects the view taken of the seriousness and social costs of school leaver unemployment. An empirical analysis will therefore be undertaken of the role played by education and training in determining the duration and intensity of job search. Knowledge of this is vital to both an understanding of the impact of educational policy on labor markets and a refined assessment of the returns to education.

B. Analytical Framework

1.13 The empirical distinction between the urban formal and informal sectors is difficult to make. 1/ However, for analytical purposes components of the formal labor market could be defined as those in which

1/ For detailed discussion of some of the problems entailed in defining the informal sector see Harberger (1971), Sethuraman (1976) and Mazumdar (1976).

the wage rate does not perform a clearing role, i.e. at the prevailing wage rate workers of similar capabilities are interested in a job but firms, at that wage, are unwilling to hire them. The formal sector, then, comprises generally of the public sector and those private enterprises in which both relative and absolute wage rates are determined institutionally by government intervention, legislation or collective bargaining. The informal sector is the remainder of the urban economy, characterized by more perfect labor markets in the sense that the wage responds more to the relative supply of workers. Wages in the formal sector are usually assumed to be above those in the informal sector leading to an excess supply of labor.

1.14 In these circumstances, the person engaged in the informal sector can be assumed to allocate his (her) time across different activities i.e. self-employment, wage employment or job search such that the expected returns from the last hour in each are equated. If, for simplicity, one assumes that the individual has no innate preferences or tastes in favor of or against any of these activities, then the expected marginal value of an additional hour of self-employment, the net hourly wage of employees and the expected marginal value arising from an additional hour of search will all be equal.

1.15 In practice, there may be systematic differences in these values for a given individual or between apparently identical individuals for several reasons including different non-monetary or psychic costs and benefits associated with each activity (e.g. working conditions), barriers to entry, lack of information and, at the individual level, errors in

decision making. Across individuals with different characteristics the list must be lengthened. Not only will less productive workers have lower earnings but so also will those who suffer the effects of discrimination. Careful standardization is thus required before one can seriously attempt to isolate the effects of education on earnings. Similarly, the impact of education on expected returns to search and hence on search behavior must be carefully separated from the influence of other variables.

1.16 Some of the difficulties mentioned above could be avoided if it were possible to directly observe the effect of the educational or training levels of workers on the performance of the enterprises (including one person businesses) in which they are employed. One appealing approach is to directly estimate a production function of the form:

$$Q = f(K, N, H) \quad (1)$$

where Q is output, K is physical capital input, N is input of uneducated labor and H is a suitable measure of the service flow from educated labor. In agricultural studies, the Cobb-Douglas function has usually been favored (Lockheed, Jamison and Lau, 1980), although alternatives have also been proposed. 1/ The central aim of this approach is to isolate the effect of H on Q. In some studies this has been interpreted as the difference in productivity between educated and less educated labor while

1/ In aggregate production function studies, alternatives such as the single and two level CES functions have also been used.

others have seen it as the effect of education in pushing the enterprise closer to its technological frontier. Important extensions of this latter approach have examined the impact of education on the proximity that farmers achieve to their profit maximization positions (allocative efficiency) by the use of a profit function derived from a Cobb-Douglas production function (Jamison and Lau 1982).

1.17 There are, however, a number of good reasons why it would be very unwise to solely rely upon this approach to analyse education-productivity relationships in the urban informal sector. Firstly, the bulk of informal activities are concentrated in services and trading within which it is notoriously difficult to define a real output measure and to specify a production function in the normal sense. Secondly the wide spread of secondary i.e. industrial, activities in the informal sector means that any general survey will pick up a very limited number of observations in most activities. If sufficient observations were obtained in a small number of activities then the results, although interesting in themselves, could well be atypical of the informal sector as a whole.

1.18 The central focus of the research proposal is, therefore, directed towards measuring the effects of education and training and testing a number of related hypotheses with the aid of data taken from observations on individuals. To obtain a suitable random sample of individuals, the surest method is to conduct an appropriate household survey. While this does not necessarily totally rule out the application of the more direct techniques as described above, it does mean that they will assume a relatively modest role in the research programme as a whole.

1.19 A household survey will necessarily pick up individuals in both the formal and the informal sector and even possibly individuals who earn labor incomes from both. Comparable formal sector information should, however, prove extremely valuable for two reasons. Firstly, information on both sectors will provide a view of the urban labor market as a whole and will therefore be more useful as an aid to educational planning or policy making. Secondly, as explained below, there are certain comparative hypotheses regarding the two sectors that are especially interesting.

1.20 Before research on the informal sector is carried out it is vital to identify which activities are associated with it and which are not. Our definition of the informal sector as the unprotected sector clearly means that no one single empirical definition can hold internationally and that government and public sector legislation, the scope of pay regulation and the coverage of trade unions and professional associations must first be analysed. In all countries, employment in the civil service, local authorities, public utilities and normally all private employers over a given size would be excluded. Included would be all self-employed activities not regulated by government or a professional body and all wage employment of a casual or insecure nature. The exact delineation in each country, however, can only be made with the aid of greater knowledge of local conditions.

Research Design

1.21 There are then two main subsections to the empirical analysis:

- (a) the effect of education and training on observed earnings and productivity, and

(b) the relationship between educational or training qualifications and the duration and intensity of search and the duration of unemployment.

Each of these headings is discussed in some detail below.

1. The effect of education and training on observed earnings and productivity

1.22 a) Earnings Functions

The surveys will yield information on the incomes derived from three types of activity:

- (i) employment by an enterprise outside the household
- (ii) self-employment (working alone)
- (iii) employment in household enterprises.

In many cases the income reported for (iii) will not be apportionable among household members as a reward to their labor since total value added will partly reflect returns to non-human assets, and the share-out among household members (if observable) may reflect kinship loyalties as much as their respective productivities. For (ii), reported income will also sometimes contain a significant capital component and only for (i) can one attribute all income to labor services.

1.23 We will assume that an hour's labor earnings can be written as a function of the individual's education and training (E), other individual characteristics such as sex, experience and race/ethnicity (I) and relevant family characteristics such as father's education and socio-economic background (F). The family background variables are included as proxies for pre-schooling ability and a vector of learning influences at home such as parental encouragement, presence of printed materials and communications media. Thus we can write for the i^{th} individual,

$$W_i = W(\underline{E}_i, \underline{I}_i, \underline{F}_i).$$

1.24 The simplest analysis is to estimate this equation in a conventional log-linear form across hourly wage income earners (type i) as earned from informal sector activities. If \underline{E}_i is specified as a set of suitably defined education and training dummies then the corresponding coefficients reflect the proportionate differences in the hourly wage between the education and/or training groups in question and the base group after controlling for other independent determinants of wages. This will therefore provide estimates of the wage differences associated with different levels and types of education and training.

1.25 Many, if not most, informal sector participants will earn their main source of income not through wage employment but through self employment in situations in which they are the only workers (type ii). Two approaches can be adopted here. The first, and simplest, is to restrict the analysis solely to individuals engaged in activities within which capital assets other than inventories are non-existent or insignificant 1/. Although this can only be determined from a preliminary analysis of the data one would anticipate that such activities will include hawking, street vending and shoe shining. The second, and more difficult, approach is to disentangle labor income in those activities in which physical capital is a relevant input. 2/ These would include

1/ If within a given activity inventories stand in a fixed proportion to value added, proportionate hourly labor income differences may be accurately estimated without adjustment for the opportunity costs of holding them.

2/ While Mazumdar (1981) and Souza and Tokman (1978) have applied earnings functions to the self employed, in no case has adjustment for capital been made.

transport, construction, manufacturing and shopkeeping. If constant returns to scale and non-fixity of physical assets are assumed in these activities then labor income can, in principle, be separated out by subtracting imputed capital costs from value added. Imputed capital costs are calculated by multiplying the replacement value of assets by an appropriate borrowing or lending rate and adding depreciation per period. The marginal product associated with an additional hour of work is then estimated by dividing labor income by hours worked. Given the number and strength of the assumptions involved, this approach is clearly susceptible to error from various sources and possible biases. However, an earnings function can be fitted to the data obtained for all self employed individuals with this method and the results compared with those for the restricted sample of self employed discussed above.

1.26 Another area of interest is whether individuals of given characteristics have similar earnings in different activities. If they do then it is appropriate to estimate the returns to education in a straightforward way on the basis of average differences in earnings by educational level. If, however, there are certain barriers to employment such that earnings are not equalised for similar individuals then the returns to education depend upon the probabilities of a new school leaver finding work in the different activities, and how those probabilities are affected by education.

1.27 The most general way to test this is to re-specify the earnings function as,

$$W_{ij} = W(\underline{E}_i, \underline{I}_i, \underline{F}_i, \underline{d}_j, \underline{E}_i \underline{d}_j, \underline{I}_i \underline{d}_j, \underline{F}_i \underline{d}_j) \quad (2)$$

where \underline{d}_j is a set of dummy variables and $\underline{E}_i \underline{d}_j$, $\underline{I}_i \underline{d}_j$, etc. are sets of interaction terms between \underline{d}_j and other variables. In the simplest case \underline{d}_j would be an employment status dummy ie

wage-employment/self-employment, but it would be more interesting to extend the number of dummies to differentiate between different industries and occupations within the informal sector. The coefficients for d_j reflect differences in the earnings of the base group across activities while those on the interaction terms pick up the differences in the differentials by sector associated with the characteristic in question. More restricted forms of the equation will also be used, eg with $I_i d_j$ and $F_i d_j$ omitted. The overall hypothesis that different activities have identical earnings functions can be tested by fitting equation 2 to separate sub samples and then applying Chow tests.

1.28 There is another form of market segmentation that is of particular interest, namely that between the formal and informal sectors themselves. Any divergence in earnings for individuals with similar characteristics is in itself an indication of the strength of the barriers between the sectors. Formal sector earnings may reflect institutionally set salary scales and the effects of collective bargaining while it is usually argued that in the informal sector, wages and the labor component of self employment incomes are determined competitively. If d_j is replaced in equation 2 by a single formal/informal sector dummy, then an earnings function analysis can pinpoint both average sectoral earnings differences and sectoral differences associated with education and other characteristics.

b) The Nature of the Observed Link Between Education and Earnings

1.29 Why does education or training raise individual earnings? If we knew the answer to this question it might be possible to reorganize educational curricula and training programmes so as to improve their performance in this respect. As part of the surveys, short tests of both cognitive ability COG, (e.g. literacy, general knowledge and arithmetic), and attitudinal modernity, MOD, will be administered to economically

active household members. These can be used to decompose the effects of education on earnings into different parts.

1.30 An illustration of the general approach can be given with the aid of the following simple recursive model (subscripts and random error terms are omitted for convenience).

$$E = d_1 + d_2 \underline{I} + d_3 \underline{F} \quad (4)$$

$$\text{MOD} = c_1 + c_2 E + c_3 \underline{I} + c_4 \underline{F} \quad (5)$$

$$\text{COG} = b_1 + b_2 E + b_3 \underline{I} + b_4 \underline{F} \quad (6)$$

$$\log W = a_1 + a_2 \text{COG} + a_3 \text{MOD} + a_4 E + a_5 \underline{I} + a_6 \underline{F} \quad (7)$$

Although in practice education dummies will be mostly used, these are collapsed here for convenience into a single variable, E, defined as years of education. Working through the model, education is determined in (4) by certain personal characteristics (age and sex) and family characteristics. Along with education the latter also determines MOD and COG in (5) and (6). Finally, the earnings function is re-specified in (7) with MOD and COG added, E retained to pick up education effects not reflected in MOD or COG and the \underline{I} and \underline{F} vectors retained for the same reason. The variables included under personal and family characteristics may differ from equation to equation. For example, household income (net of the earnings of the individual in question) may be included in (4) but not in (7).

1.31 Estimation of equations (5) to (7) will allow us to divide the overall effect of education on earnings into three components: the effect of raising COG and hence log W, the effect of raising MOD and hence log W, and finally the direct effect of education on log W after controlling for COG and MOD. In terms of the model we can represent this as:

$$\text{Total effect} = a_4 + a_2 \cdot b_2 + a_3 \cdot c_2$$

1.32 Path analysis can also be used to examine the contribution of the above three components to the bivariate correlation between log W and E. This general approach can be extended much further. If one now brings in equation (4), it is possible to further decompose the overall effects of individual and family characteristics on earnings. (See Figure 1.1) Individual characteristics include a pre-school ability measure, or this could be used as an intervening variable between family background and education.

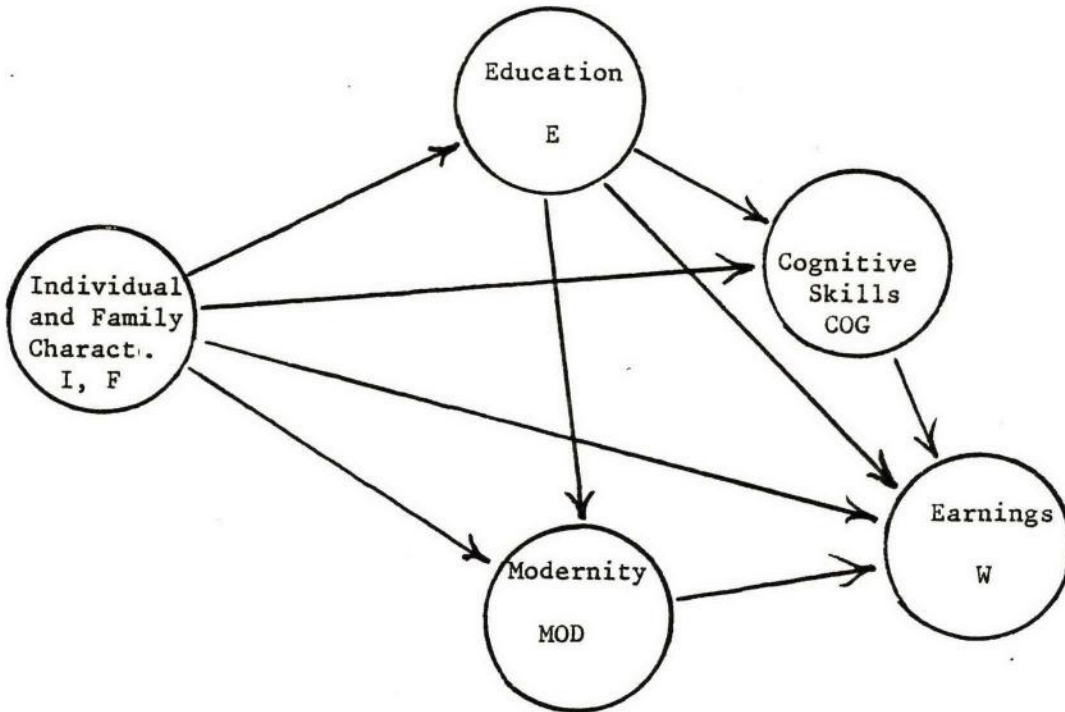


Figure 1.1. A path model of the effect of education on earnings

1.33 A particularly interesting extension will be to compare results when the analysis is applied separately to the samples of formal and informal sector workers. This will give some useful comparative insights into why particular levels and types of education or training have different impacts on earnings in the two sectors.

c) Direct Estimates of the Effects of Education and Training

1.34 As described above, one alternative approach to measuring the effect of education's productivity is via the use of production function analysis. This avoids the need to disentangle the labor component in the income of the self-employed and to assume that wages are proportional to marginal products. In the Ivory Coast and Upper Volta, secondary activities constitute a larger proportion of informal urban activities than in the other proposed research sites and these countries are, therefore, likely to provide more appropriate samples for this approach. In terms of the earlier classification, the analysis can be applied to households containing either one self-employed worker (type ii) or multiple workers engaged in a common activity (type iii). Two variants of the approach can be explored. The first treats labor in different education or skill categories as separate factors of production i.e.

$$Q = f(K, L_1, L_2 \dots L_n)$$

where L_1 is labor input of the 1th type, while the second argues that the education of the head of household is what matters and affects the enterprise by improving the technical efficiency of the establishment i.e.

$$Q = A (\underline{E}) f (K, L)$$

where A is a technical efficiency parameter, \underline{E} is a set of education and training dummies as before and L is total undifferentiated labor input. If a Cobb-Douglas production function is used the functions can be estimated in logarithmic form by ordinary least squares and if more

complex functions such as a CES are used then non-linear techniques can be applied.

1.35 Again, as mentioned above, the effect of education on allocative efficiency has been investigated in recent studies of farm behavior by employing a profit function derived from a Cobb-Douglas framework. The latter expresses profit (revenue less variable costs) as a function of a parameter reflecting both technical and allocative efficiency levels, fixed factor quantities and variable input prices. This is an excellent framework in which to explore the effects of farmer education given that land can plausibly be treated as a fixed factor and other factor prices will often vary between regions. In the urban informal sector context, however, the framework does not appear very promising given that it is not obvious that household enterprises employ fixed factors except perhaps for the workshop size in manufacturing activities. Also, given that the surveys will be carried out in only one city in each country, we are unlikely to observe much variation in input prices.

1.36 One alternative is to examine whether there is any relationship between the educational qualifications of the household head or other household members and the unit costs of the enterprise. The latter can be calculated by using the estimated earnings functions (for informal sector wages only) to impute the wage costs of household workers and then adding capital, inventory and intermediate input costs. Capital and inventory holding costs can be calculated using the method discussed earlier. This only permits us, however, to examine a modified version of the allocative efficiency concept as success in attempted cost minimisation is being investigated rather than success in profit maximization.

2. Unemployment and Job Search

1.37 A new labor market entrant who cannot gain immediate entry to the formal sector has in principle a choice of two strategies: to remain totally unemployed or, in the absence of barriers to entry, to participate in the informal sector but thereby reduce the probability of finding a formal sector job in a given period (Fields 1975, Pinera and Selowsky 1979). If the latter strategy is adopted then, in the absence of institutional constraints such as a fixed number of working hours per week, a choice of the number of hours (search intensity) of intended search must be made. The purpose of this part of the proposed project will be to

- a) examine whether in the countries considered the informal sector does play such a role,
- b) measure search intensity and experience among informal sector participants and the unemployed,
- c) estimate the effect of education on unemployment incidence and search intensity.

1.38 Obviously much of the research will be based on descriptive information obtained from the surveys. For example, search activity among informal sector workers will be directly observed and cross-tabulated with education and other characteristics. Similarly, unemployment rates will be estimated among individuals classified by a number of characteristics including the participating sector of other household members and education. The more technical part of the analysis will, however, focus on two interrelated problems: first, separating out the effect of education, training and household sector upon the incidence and duration of open unemployment and second, estimating the impact of education and training upon search intensity among those already participating in the informal sector. Clearly, in the absence of any barrier to entry in the

informal sector one can provide an integrated analysis in which open unemployment is simply a special case in which the individual chooses the upper limit of search intensity. However, given that such barriers may exist it is useful to examine the determinants of the two decisions separately as well as together.

a) The General Case

1.39 A complete analysis of the individual's optimal search path over time would be rather complicated as this needs to be integrated with the choice of an optimal consumption path given an initial asset endowment. For present purposes it is, however, sufficient to assume a static present value of income maximization model in which the individual only makes decisions one period at a time. Suppose the i^{th} individual is faced with an informal sector wage T_i and an institutionally set formal wage W_i and a probability of a formal sector offer that depends upon the number of hours searched per day $\underline{l}/$. The individual will then search more intensively: the greater the difference between W_i and T_i , the greater the probability of success for any given number of hours searched, the less the tendency for diminishing returns to hours searched to occur in terms of the job finding probability and the easier it is for the individual to finance search by means other than informal sector participation. The first two of these are determined by the arguments of the earnings function, the third is essentially technological while the last is determined by family characteristics.

1/ In practice the individual will face a distribution of formal sector wage offers but we will assume for the moment that this dispersion is small and can be ignored.

1.40 For each economically active individual not working in the formal sector we will know the number of hours devoted to search in the previous week (S). The empirical model is then:

$$S_i = S(\underline{E}_i, \underline{I}_i, \underline{F}_i) \quad (8)$$

where \underline{E} , \underline{I} and \underline{F} are defined as before. As S_i will be a limited dependent variable since many, if not most, respondents will report zero search activity, the equation will be estimated in linear form by TOBIT analysis. ^{1/}

1.41 There are two issues of particular interest here. The first is whether search intensity is positively related to education and training and if so, if this is because of higher returns to search arising from high wage differentials and a reasonable jobfinding probability, or family background variables e.g. income, social status etc. The second is whether it matters if the individual's family are informal or formal sector participants. This can be investigated by introducing one or more appropriate dummy variables. These analyses will be conducted with equation (8) applied to all economically active individuals (including the unemployed) who do not work in the formal sector.

b) The Incidence and Duration of Unemployment

1.42 This is a special version of the case above in which the individual is treated as choosing between open unemployment and informal sector participation at some fixed intensity. The analysis is then similar to that above except that an unemployment dummy UNEMP for non-formal sector participants is first defined which yields a similar equation:

^{1/} For an example of the use of TOBIT in this type of context see Fallon (1983). The TOBIT analysis may need to be extended to deal with an upper limit in this case as there may be (roughly) maximum hours of search. This does not, however, present any special problem.

$$\text{UNEMP} = U(\underline{E}, \underline{I}, \underline{F}) \quad (9)$$

As there is a dichotomous dependent variable in this equation, estimation will be by PROBIT or LOGIT analysis. Also, an effort will be made to define a more continuous employment variable among those who reported variation in the time budget question.

1.43 The observed number of unemployed depends, in a steady state, upon the number of individuals entering unemployment per period and their average completed duration of unemployment. In less developed countries a disproportionate number of the unemployed are relatively young and presumably many of them are new labor market entrants. Given that the inflow among young people is essentially determined by the age distribution and the out-turn of the educational system, the incidence of unemployment among young people is largely determined by their completed duration. An equation similar to those above can therefore be estimated by TOBIT analysis with completed unemployment duration DURUNEM as the dependent variable applied to all young people under (say) 30 years of age who have either never experienced open unemployment or who have completed an unemployment spell.

c) Search Intensity

1.44 Finally one can restrict the search intensity analysis only to those who are currently observed as participants in the informal sector. This is valid if the market is severely segmented so that some individuals have the possibility of working in the informal sector and others do not.

3. Dependent and Independent Variables

1.45 A summary of the above discussed operational variables to be measured in this project is as follows:

(a) Dependent Variables

- W hourly wage or labor income as described above

- COG continuous cognitive measure, i.e. performance in tests to be developed by the local research team.
- MOD modernity of attitudes measure: likewise to be developed by the local research team (For examples, see Annex 2).
- Q_{ij} output of the j^{th} activity in the i^{th} household (Self-employed and household enterprises only).
- C_{ij} total production costs of j^{th} activity in the i^{th} household (Self-employed and household enterprises only).
- S time (hours) per week devoted to search activities.
- DURUNEM length of completed spell of unemployment.

(b) Independent Variables

1.46 These may be subdivided into four groups: education (formal and training), individual, background and other.

a) Education

- E a set of 0 - 1 dummy variables indicating either years of schooling completed or qualifications.
- YS years of schooling: this can be used as an alternative to E in some equations.
- TR a set of 0 - 1 dummy variables indicating different levels and types of training. In the discussion above these are subsumed under E.

b) Individual

- SEX a 0 - 1 dummy variable indicating the sex of the individual.
- EXP total working experience.
- EXPEM time spent with present employer.
- AGE age
- RACE a set of 0 - 1 dummy variables denoting different racial, ethnic or tribal groups.
- DSEC a set of 0 - 1 dummy variables denoting sector of work e.g. self-employment or wage employment, different activities etc. In the discussion above this was abbreviated to d.
- ABIL measure of 'raw' or non-school created ability. (For example, see Annex 2).

- MIGR a 0-1 dummy variable indicating the person is a migrant to the present residence.
- ORIGIN geographic origin of migrant.
- RES length of residence of migrants in the present city.

c) Background

i) Earnings Functions

- FATHED Education of father in years.
- FATHOCC Father's occupation: a set of 0 - 1 dummy variables.

ii) Search and Unemployment

FATHED and FATHOCC as above plus the following:

- INC Household income per adult equivalent member.
- FATHINC Father's income (an alternative to INC)
- DEPENDS Number of dependents in household
- HINF 0 - 1 dummy denoting household members in the informal sector
- FSELF Father self-employed (an alternative to HINF).

d) Other (analysis of household enterprises only)

- K value of assets used in activity.
- L_i labor time of i^{th} type used in activity.

c. Sampling

1.47 Since the main concern of the research focusses on the role of education in the urban informal sector, this immediately delineates the area of investigation. In addition, concern is more with the recent output of the school system, say those aged 30 or under. Putting these restrictions together, the target area of the investigation can be identified as the intersection of the three circles in Figure 1.2. Of course, a control group of non-educated engaged in the same sector, will be included.

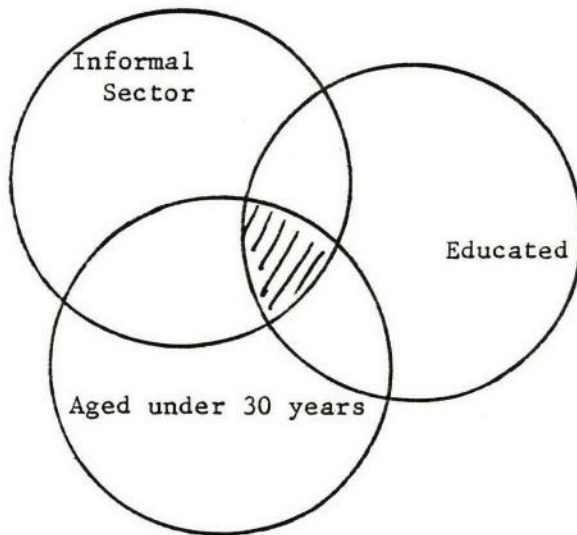


Figure 1.2. The target group for the investigation (shaded area).

1.48 In order to arrive at such an intersection it is necessary to sample individuals in household units in areas which are a priori known to contain a large proportion of the target group. (A basic questionnaire is in Annex 1). Obviously this approach requires some simplifying assumptions in order to be workable. For example, while average earnings in the informal sector appear to be universally inferior to those of the formal sector, it is not entirely justifiable to construct a sample of urban poor in the intent of finding a larger concentration of individuals in the informal sector. Obviously, the "urban poor" and the "informal sector" are not coterminous; the poor and the better off exist in both sectors.

1.49 However, concentrating the sample in areas that are relatively poor, contain relatively more recent migrants, fewer schools and large-scale production activities, we should increase the probability of

capturing the full range of economic activity in this sector. Beyond this we do not wish to narrow the criteria too closely in our sample design. Definitions in this sector are imprecise. And we will attempt to avoid introducing our own biases in the form of strict definitions in a field that has achieved little consensus. By choosing a household survey rather than a survey of establishments, data will inevitably be drawn from a universe larger than the informal sector itself (but certainly containing it). The essential advantages of this approach are that it leaves open the possibility of analyzing the data at a more disaggregated level, it provides for the definition of the informal sector in empirical terms as wide or narrow as we wish, and it permits us the economy of utilizing extant sampling frames.

1.50 Although it would be useful to survey the urban areas as a whole of each country, it is unlikely to be practical given the escalation in costs involved. We therefore propose to concentrate on the capital cities: Lima and Abidjan. Given the approximate informal sector population in the two cities we suggest working samples of 4,000 households in each city. (See Section C below describing research sites).

1.51 The main surveys will be preceded by a short but indepth pilot. Apart from testing the applicability of the questionnaire this will also be used to obtain vital local information regarding fixed assets and intermediate inputs used by the main activities.

C. Country Case Studies

1.52 Five countries have been identified as potential research sites for this project: Ivory Coast, Upper Volta, Peru, Indonesia and China. The criteria used for identifying these countries have been a combination of the following:

- a) importance of the country in terms of Bank lending for education,
- b) willingness of the government to support the research project,
- c) available previous work on the informal sector as a basis for rigorous sampling,
- d) existing local institutions identified for research collaboration,
- d) preparatory work already done by EDC towards the inclusion of a particular country.

1.53 Missions have already visited Ivory Coast, Upper Volta and Peru in preparation for this project. Government support has been secured in all countries and local research institutions have been identified and contacted. As a result, this particular research proposal is limited to the Ivory Coast-Upper Volta complex and Peru. Further missions are planned to China and Indonesia in early 1983 to negotiate with the governments and local institutions. These countries may then be included in a follow-up proposal when the preparatory work is completed. A recent visit by a Chinese delegation to the Bank expressed a strong interest in participating in this study.

1.54 Support for the research proposal had been received from the government of Upper Volta prior to the coup in November 1982. The position of the present government is not yet known. In this proposal, therefore, we shall refer to the "Ivory Coast-Upper Volta complex". As is described below there is a significant amount of emigration from Upper Volta to the Ivory Coast, particularly of people with schooling. In the absence of fieldwork being undertaken in Upper Volta - as appears probable - some of the economic effects of education will still be captured by

surveys in the Ivory Coast. For that reason, a description of Upper Volta as a 'research site' is included below.

1. Ivory Coast

1.55 The Ivory Coast is included among the countries to be investigated for a number of reasons. First of all it has a sizeable and rapidly growing informal sector within which the labor force is distributed over a number of activities. Table 1.1 below shows the most recent estimate of the overall distribution of the labor force.

Table 1.1 Ivory Coast. Employment by Economic Activity and Type of Sector, 1980

<u>Economic Activity</u>	<u>Type of Sector</u>		<u>Total</u>
	<u>Modern</u>	<u>Traditional</u>	
Agriculture	71,000	2,000,000	2,071,000
Non Agriculture	357,000	430,000	787,000
Total	428,000	2,430,000	2,858,000

Source: Based on information supplied by the Office National de Formation Professionnelle.

We can imply from this that the urban informal sector in the country as a whole has an importance in terms of employment equal to that of the formal sector.

1.56 More detailed information is known about the labor force in Abidjan resulting from ILO survey work in the early 1970s' (Joshi, Lubell and Mouly, 1974). It was estimated that in 1970, around 47,000 individuals in this city worked in the informal sector out of a total of 153,000 and that this sector's share had risen from 28 percent in 1965 to 31 percent in 1970. Table 1.2 presents the breakdown of informal sector employment in Abidjan by sector and labor force status.

Table 1.2 Percentage Distribution of Informal Sector Employment in Abidjan by Sector and Labor Force Status, 1970

<u>Economic Activity</u>	<u>Wage and Salary Earners</u>	<u>Self-Employed and Unpaid Household Workers</u>	<u>Total</u>
Agriculture, Forestry, Fishing and Hunting	3.2	3.2	6.4
Manufacturing, Handicrafts, Power and Construction	14.4	17.6	32.0
Trade and Services	28.7	33.0	61.7
All Sectors	<u>46.3</u>	<u>53.8</u>	<u>100.0</u>
Number (000's)	21.76	25.25	47.0

Source: Joshi, Lubell and Mouly (1974), Table 2.5, page 2-17.

In general the urban informal sector is less dominated by self-employed petty traders than is the case in most other developing countries: industrial activities employ about a third of the informal sector labor force and almost a half earn wages or salaries. This may be contrasted with the situation in, say, Jakarta where the great bulk of the informal sector is self-employed. Although the proportion of self-employed workers was roughly constant between 1965 and 1970, there appears to have been a shift away from informal services towards informal manufacturing: the share of services in informal employment falling from 65.5 percent in 1965 to 61.7 percent in 1970 while the share of manufacturing rose from 27.6 percent to 32.0 percent over the same period. Informal industry in Abidjan is spread over many activities among which textiles, wood products, vehicle repair and construction are particularly important.

1.57 There is very little information on differences in wage rates between the formal and informal sectors although one rough proxy is the ratio of value added per worker in the two sectors in the same industry. In 1970 this varied between 0.11 and 0.95 in different manufacturing industries and was 0.23 for manufacturing, handicrafts and construction as a whole.

1.58 Like many other developing countries the Ivory Coast has experienced very high rates of open unemployment in its urban areas. In 1970 it was estimated that out of a total urban labor force of 490,000 some 115,000 were economically active and without work resulting in an overall unemployment rate of 23.5 percent. For Abidjan alone, the corresponding rate was 20.0 percent. Such high rates guarantee that a random household survey will pick up plenty of data on unemployment and search. They also suggest that the informal sector may not be as accessible for unemployed workers as much theoretical literature suggests. (e.g., Fields, 1975)

1.59 A third reason for selecting the Ivory Coast is that there should be a reasonable distribution of educational attainment within the informal sector labor force. Although direct data on this is lacking, one may note that while the illiteracy rate among persons aged 15 years or older was 58.8 percent for the overall Ivory Coast population in 1980 (UNESCO, 1981), in recent years primary school enrolments have almost achieved universality.

1.60 Fourthly, there is at the moment a household survey being planned in the Ivory Coast and the Bank's Development Research Department is involved in this. Linking with and complementing this work could prove useful and result in both greater efficiency and economy.

2. Upper Volta

1.61. Very little evidence exists on the economic effects of education in Upper Volta. During a recent EDC mission, Psacharopoulos calculated rates of return on the basis of partial sets of earnings data from the public sector and a series of private sector interviews. Social rates of return calculated on the basis of 1982 data were between 15 and 20 percent. The nature of the data used for calculating these rates of return clearly points to the necessity for a coverage of education-relationships which goes well beyond the formal sector. In 1975, employment in this sector amounted to only 1.5 percent of the country's economically active population. The vast majority of, at least primary, school leavers do not enter the formal sector but are agricultural or informal sector workers, emigrants or are unemployed. At present nothing is known about the economic performance of school graduates in Upper Volta's agricultural sector and despite an ILO study of the informal sector there is again no knowledge of the educational dimension. At the same time that the economic effects of schooling are unknown, there are plans to significantly expand primary enrollments over the next two decades.

1.62 Any consideration of the economic effects of education in Upper Volta require an acknowledgement of the importance of international migration, particularly to the Ivory Coast. It is estimated that 70,000 persons depart each year and according to the 1975 Census, the level of education is closely related to the decision to migrate. This resulting loss of educated people is not, however, regarded as totally negative. Recorded migrant remittances from abroad in 1981 amounted to nearly one-half of the country's official exports of goods and services. In addition it is estimated that perhaps a half of gross migrants return each year. To the extent those people have learned some skills in the foreign country, they contribute to the future development of the domestic economy.

1.63 There are, then, a number of good reasons for including Upper Volta in a study of the effect of education in the informal sector:

- (a) the ratio of formal sector employment to the total labor force is one of the smallest in the world,
- (b) there already exists some background work on the informal sector done by the ILO,
- (c) the country is one of the least researched in terms of education and employment,
- (d) the Bank has committed itself to a major emphasis on education in future lending,
- (e) by linking research on both the Ivory Coast and Upper Volta there is a chance of capturing the interesting effects of education on emigration and subsequent economic performance.

3. Peru

1.64 In recent years, the number of formal sector jobs has not kept pace with population increase in the urban centres of Peru. A result has been the growth of the informal sector especially in the 'pueblos juvenes'. Existing literature on this sector in Peru is mostly descriptive and anthropological (Osterling 1981, Scott MacEwen 1981, Wendorff 1979), though Webb (1977) made estimates of informal sector income for the early 1970's. The recent emphasis given to the private sector in general by the Government has widened the interest and in 1981 the Ministry of Labor, in collaboration with the ILO, launched a household - small enterprise survey of 1500 units.

1.65 Two types of questionnaires were used, one for the head of the enterprise and the other for employees. While, unfortunately, there was no education question in the latter, the educational level of workers can be found retrospectively by matching these survey results with those of the general household survey tape. This operation and the creation of a new merged tape is now underway, financed through the Bank's Research Committee's proposal-preparation funds. Two uses will be made of the merged tape:

- a) the information provided will permit the measuring of variances of the variables we are interested in for inclusion in the major study and will thus allow a more rigorous sampling,
- b) a first documentation of the relationship between education and income in the informal sector will be provided. Given the total absence of information on this front, even this small survey will be useful in getting some feel for the relationships involved.

1.66 Siting part of the research project in Peru will also enable us to link with and complement a major BID-financed ECIEL research project on the role of education in rural areas (the countries involved are Peru, Brazil, Mexico and Paraguay). The specific objective of this study is an analysis of changes in productivity of small and medium sized farm units, as a result of changes in educational processes. Because of Bank interest in the results of this study, EDC is providing a small time input in monitoring its progress. Methodologically, our interest is in the contemplated use of path analysis in which the innovative function of education is treated as an intermediate variable: first, as dependent on schooling and family characteristics; second, as independent and a determinant of agricultural production.

1.67 Depending on its actual design and intent, the study will hopefully increase our knowledge of the role of education in rural environments. This will augment the evidence we already have on farming from Jamison and Lau (1982) and to the extent that rural nonfarming activities are covered, it will be a useful adjunct to our own work.

1.68 For a research program investigating the relationship between education and informal sector activity, there are several reasons why Peru would be a useful site:

- a) because of the relatively large size of the sector in the economy. Although exact estimates do not exist, most put the proportion of urban informal sector employment in the total labor force in the range of 30 to 40 percent (Wendorff, 1980, p.3);

- b) because of existing previous work on household surveys by the Ministry of Labor, there exists a good basis for a probabilistic sampling frame;
- c) because it will link to and complement the above mentioned ECIEL project on the role of education in the rural sector of the economy,
- d) because the Government is very interested in the topic of the proposed research. The Minister of Labor has expressed his endorsement in writing and the Ministry of Education is eager to see the research carried out.

4. Indonesia

1.69 Before the Jakarta Informal Sector Survey was conducted in 1975, there were only very rudimentary estimates of the size and significance of the informal sector in that city. Sethuraman (1976) used 1971 Census data and a 1968 survey of establishments to estimate that slightly more than half a million persons, or approximately 40 percent of Jakarta's 1971 labor force, were engaged in informal sector activities. From the same data it was estimated that informal sector employment, as a percentage of total employment, varied considerably by branch of economic activity.

1.70 While the focus of the Jakarta Informal Sector Survey was not on the relationship of education to skills, productivity or job search it does, nevertheless, constitute important ground work upon which it will be possible to profitably build. The sample was of enterprises, not individuals or households, and covered manufacturing, construction, transport, trade and services. From the Survey it is possible to make a rough estimate of the size of the informal sector in Jakarta. This can be done by extrapolating from the count of 14,028 heads of informal sector enterprises. According to the survey report (Moir, 1978) this procedure results in an estimate of over 560,000 persons. This is, of course, only heads of enterprises in the five activities listed above and excludes all other informal sector participants. The informal sector is thus seen as a major source of employment in Jakarta.

1.71 With respect to schooling, the Survey showed that 20 percent of the men and 50 percent of the women had no formal education. The informal sector participants had received fewer years of schooling than characterized the Jakarta labor force as a whole. Some had informal education in the form of learning job-related skills from neighbors, relatives or friends.

1.72 In addition to the basic assistance which the Jakarta Informal Sector Survey could provide to the research proposed, there is another reason for our desire to eventually include Jakarta as a research site. The 1980 Population Census (for which 5% use tapes are now available) included for the first time an employment status question which contains two self-employment categories. These are: (1) self-employment, and (2) self-employment assisted by family member/temporary help. Because of the existence of this question in the Census, it will be possible for us to take advantage of a very sophisticated sampling frame and to focus directly on individuals who have identified themselves in terms of self-employment. The director of the Bureau of Analysis and Development (Central Bureau of Statistics), is aware of this research proposal and has agreed to participate by making the census tapes and sampling frames available to us. The Population Council has also agreed to assist us in the survey design and the training of survey takers. The University of Indonesia's Faculty of Social Sciences has been contacted and is eager to supply graduate students as survey workers and to participate in the project as needed.

5. China

1.73 China has been added to the list of potential research sites following the interest shown in joining the project by a Chinese delegation which visited the Bank in November 1982, led by Professor Yang

Xin Heng of Nankai University. The city of Tianjing has been suggested as the survey site and the University of Nankai as the collaborating institution. Small scale, exploratory studies of young self-employed workers in Tianjing were made in 1981. Extensions of these could provide a very useful comparative case study for the other research sites in addition to increasing the knowledge of the precise relationships between education and the recent growth of youth unemployment (Colletta, 1982) and between education and work performance useful for Chinese educational policy.

1.74 An education mission to China in January 1983 intends to discuss the possibilities and logistics of the proposal further.

D. Relationship to Other Research

1.75 Over the last ten years or so a great deal of theoretical and empirical attention has been given to aspects of what has come to be widely termed the informal or unprotected sector in the urban areas of LDC's. Very little attention, however, has so far been given to the effect of formal schooling on workers in this sector.

1.76 Development models of the 1950's and early 1960's tended to view the economies of poor countries as dualistic with a large low-productivity subsistence agricultural sector and a small but growing high productivity urban industrial sector (Lewis 1958). As rural-urban migration increased it gradually became obvious that not all migrants were being employed in the wage earning 'modern' sector and that large numbers were engaged in activities generally described as trading and services. However, this whole sector tended to be generally ignored in the development literature and in government policy up to the end of the 1960s. Where it was recognized it was assessed in generally negative terms and assumed to be a purely temporary phenomenon which would disappear as the modern sector expanded.

1.77 Perhaps the first scholar to give systematic attention to such peripheral employment activities was Hart (1971) who coined the term "informal sector". From fieldwork in Ghana, Hart emphasised what he regarded as the positive role which this sector plays in providing both income generating activities and many essential city services. This was also the view of the highly influential International Labor Office study of Kenya published in 1972 (ILO, 1972). The report concluded that the informal sector was capable of providing more jobs and growing faster than the formal sector and the recommendations were largely designed to reduce discrimination against it.

1.78 A large amount of the theoretical and empirical work which has focussed on the informal sector in the last decade has concentrated at the enterprise level and on questions of size, composition, relationships with other sectors and the potential for growth. Other work has attempted to define the profile and characteristics of informal sector workers.

1.79 Despite these efforts questions of the nature of skill acquisition and the effects of different training modes on informal sector workers have only in a few instances been tackled. One of the first scholars to survey the training background of small scale sector workers was Callaway in the 1960s in Western Nigeria (Callaway, 1964). What stood out in his research was the strength and extent of the apprenticeship system and the small numbers of people with formal schooling participating in that sector. By 1972, however, even in Northern Nigeria, an area of very low educational provision, Hinchliffe (1975) reported that 40 percent of employees/apprentices had had primary schooling.

1.80 Much of the most recent literature on skill acquisition and educational background of workers has come from studies initiated under the ILO's World Employment Programme. Some of these can be summarised quite briefly. The Nihan et. al. (1978a) study in Nouakchott, Mauritania showed that most training of informal sector workers occurs through apprenticeship with an entrepreneur in that same sector. They also found that employers trained within the informal sector ran their businesses at the same level of competence as those formerly apprenticed in the formal sector. However, it is worth pointing out that the most successful group of entrepreneurs was the 5 percent or so who had attended courses at a vocational training institution.

1.81 In a related study by Nihan et. al. (1978b) of the informal sector in Lome, Togo apprenticeships within that sector were again shown to be the critical source of training. The same can be seen from Fowler's (1978) study of Freetown and Fapohunda's (1981) of Lagos. Outside of the ILO studies, King (1977) has also documented for Kenya the primacy of apprenticeship and on-the-job training in the direct formation of informal sector skills.

1.82 These studies tend to show low average levels of education for informal sector workers. However, what is required for a first analysis of the influence of education is a disaggregation by age group and also by activity. Electrical and mechanical repairers in their early 20's are likely to have a very different educational profile than 50 year old domestics. Arye (1976) shows, for instance, that in Kumasi, Ghana while

only 13 percent of businessmen aged 46-50 years had had a middle school education, the percentage for the 20-25 years group was 80 percent. Hallak and Caillods (1981) point out another interesting feature from the above studies of Mauritania and Togo which is the educational superiority of employers compared to employees. This implies the possibility that formal education, while not being a provider of specific skills, in some way enables a transference to self employment. Why this may be so has not yet been researched.

1.83 While the large statistical surveys of the ILO have unearthed large amounts of data on the characteristics of informal sector workers there remains a large data gap on productivity and earnings differences and on the causes of these. Early studies such as Hinchliffe's (1975) of informal sector workers in Kano, Nigeria showed significant earnings differences between schooled and unschooled workers but no account was taken of individual variations other than schooling level. Activity of employment has been shown to be a major determinant of the effect of education on earnings in studies of San Salvador (PREALC 1978). The major attempt, so far, to fit earnings functions to informal sector workers has been made by Souza and Tokman (PREALC, 1978), again using data from San Salvador and also Santo Domingo. The conclusion was that while education 'explains' from 37 to 44 percent of the income variance of all workers, once the effects of employment status and size of establishment are controlled for, the effect of education is greatly reduced. Hallak and Caillods (1981) point out, however, that it was not possible in this analysis to isolate within the informal sector those variables which are the most important in explaining incomes variations.

1.84 The results of surveys relating education, form of apprenticeship and capital assets to measures of entrepreneurial success tend to suggest

that while primary schooling may be closely associated with higher productivity and earnings, the amount of capital assets is even more so. However, since education and capital accumulation are also highly correlated there remains a case for supposing that in one way or another, education plays a role in influencing the effectiveness of entrepreneurial activity.

1.85 What the statistical profiles of the informal sector labor force tend to show about worker skills is that most have been learned through an apprenticeship system, mainly in the informal sector itself but also in the formal sector, and few have resulted from specific vocationally oriented formal education programmes. These findings, however, say virtually nothing about the effects of basic education. The educational profile of informal sector recruits is increasing rapidly and that increase is the result of large amounts of expenditure. It becomes more and more important therefore to understand the effects of this expenditure. So far very little research indeed has been directly related to the issue of the effects of formal schooling on the behavior and output of informal sector workers.

1.86 Several pieces of research have confirmed that in many cases workers shift between sectors during their lifetime. While some learn skills in the formal sector and perhaps raise some capital, both of which are then put to use within the informal sector, others use part time work in the informal sector as a means of funding the search for a formal sector job. The ways in which education influences these types of behavior have again, however, received relatively little research attention. That which exists is centered around the notion of job search.

1.87 Job search models were first introduced into the development literature by Harris and Todaro (1970) and covered just two sectors - rural and urban. The result was to shift the emphasis in analysing unemployment away from demand deficiencies towards 'excess' supply resulting from restrictions to entry. Fields (1975) introduced into the basic model what he termed the 'murky' sector and argued that the same expectational factors operated within the two urban labor markets as between the rural-urban areas. One of his conclusions was that, given that employers prefer to hire better educated workers, the education of an additional worker lowers the number of urban jobs available to the uneducated by one but reduces the uneducated labor force by more than one as a result of the downward effect on the probability of getting a job, and thereby reduces unemployment.

1.88 More recently Pinera and Selowsky (1978) have developed a more complex model of job search concentrating solely on the decision whether to remain unemployed and 'search' for a formal sector job or enter the informal sector. They argue that in the context of unemployment, wage differences between the formal and informal sectors and no barriers to entry to the latter, the wages of informal sector workers are likely to be different from the true marginal product of an additional educated worker to the labor force. Finally, Fallon's (1983) work on unemployment and search in Delhi suggests strong relationships between unemployment and household characteristics, and search and educational level.

1.89 The refinement of these tentative hypotheses and their further testing is another area in which a major study of education's role in the informal sector is required.

II. ORGANIZATION

2.01 In both Peru and the Ivory Coast - Upper Volta complex, the research will be carried out by local institutions. Beyond finance, the Bank will be involved in three functions:

- (a) consultation regarding the research design;
- (b) monitoring of the execution of the project;
- (c) use of the generated results at two stages:
 - analysis of the computer data files as they are produced for answering supplementary research questions to those being conducted by the local team in the case country, and
 - absorption and dissemination of the findings of the study.

2.02 Because of the many parties in the Bank interested in this research proposal, it is suggested that two collaborators from Departments outside EDC are included in the working group for each country. The organization chart is shown in Table 2.1.

2.03 A timetable of major events is given in Table 2.2 spanning over three financial years.

Table 2.1

Organization Chart for Education -
Informal Sector Research Project

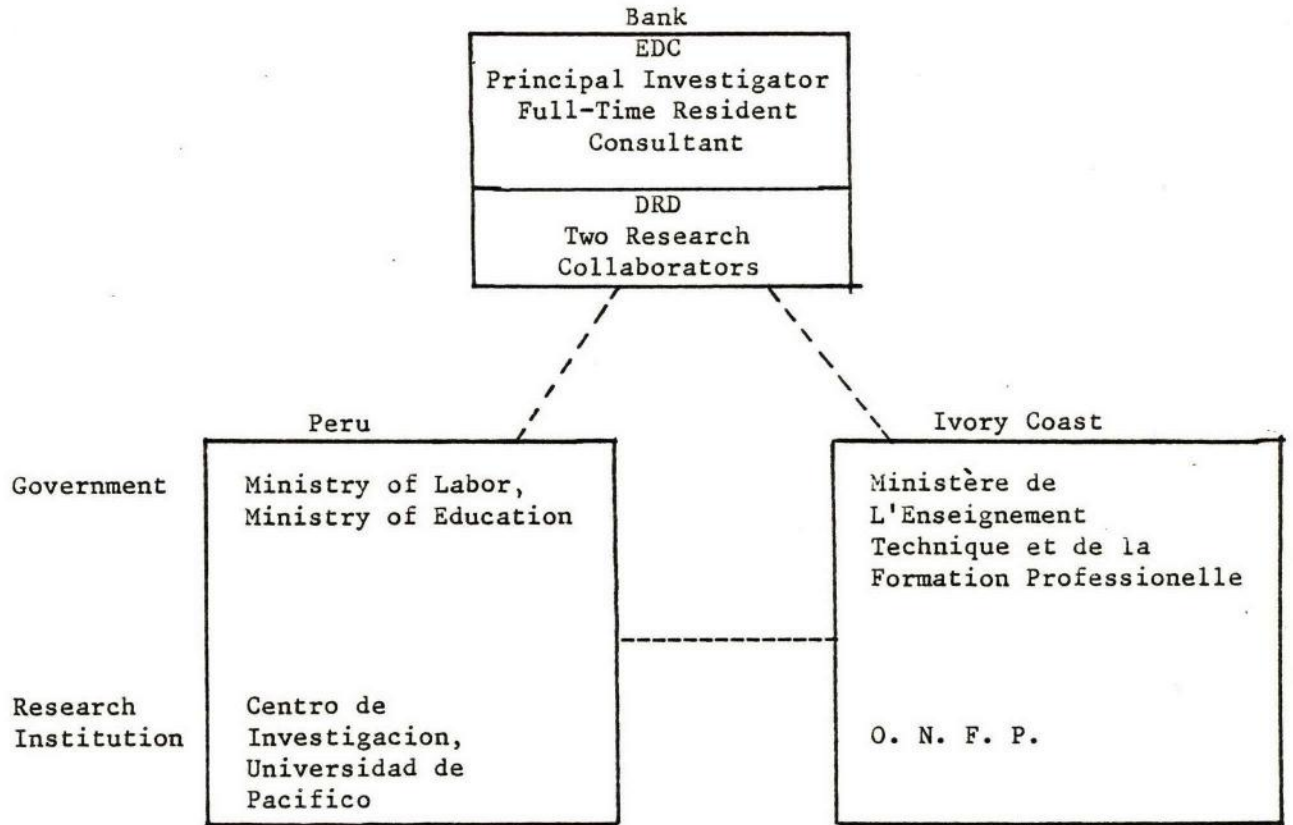


Table 2.2

TIMETABLE OF MAJOR EVENTS

	<u>Date</u>	<u>Event</u>
1983	April	Missions to Peru and Ivory Coast to prepare contracts with collaborating institutions.
	May-October	Preparation of instruments and sampling frame.
	November-December	Pilot testing of instruments
1984	January-February	Main field survey
	March-June	Coding and punching of data Clean data files
	July-December	Statistical analysis Report writing
1985	March	Seminar on synthesis of results.
	June	Final report

III. COLLABORATION WITH INSTITUTIONS IN DEVELOPING COUNTRIES

3.01 Following visits by Bank Staff to the two countries that will participate in the first stage of this study, the following institutions have been approached, and have shown interest in carrying out the work.

Ivory Coast

The Office National de Formation Professionnelle (ONFP) of the Ministry for Technical and Professional Training, together with CIRES has been contacted. (Details of ONFP and their response are provided in Annex 3). Appropriate institutions in Upper Volta have also been identified, but will not now be contacted until the political situation is more clear. In the absence of a research site in Upper Volta, Voltaics will be traced in the Ivory Coast.

Peru

Three institutions were identified during the mission as candidates for undertaking the research contract.

- (a) The Centro de Investigacion of the Universidad del Pacifico. (See Annex 3 for a description of their activities).
- (b) INIDE, the Ministry of Education's research department.
- (c) The Centro de Investigacion y Propeccion Educativa (CIPE), a non-profit research institution.

3.02 Each institution has its own advantages and weaknesses. The Center at the University of the Pacific has excellent computer facilities and skilled personnel in quantitative analyses. INIDE and CIPE, on the other hand, have more experience with educational issues. Given the small size of these possible local research collaborators, it is proposed that each will be used to carry out selective tasks related to its expertise.

IV. RESOURCE REQUIREMENTS

4.01 Table 4.1 gives a summary of the overall resources anticipated to be committed to this study, spread over three fiscal years. The study will also use a full time Bank resident team to coordinate the activities, monitor progress and conduct supplementary analyses to those conducted by the local researchers and one full-time consultant located in EDC. Table 4.2 provides a more detailed analysis of the major cost items of the study.

Table 4.1

RESOURCE REQUIREMENTS, EDUCATION-INFORMAL
SECTOR STUDY

Resource	FY83	FY84	FY85	Total
A. Staff Requirements (in staff weeks)				
Principal Supervisor	2	10	3	15
Other	1	2	1	4
Total	3	12	4	19
B. Case Study - Peru (in 000 US\$)				
Contractual services	20	74	40	134
C. Case Study - Ivory Coast (in '000 US\$)				
Contractual services	22	79	43	144
D. Headquarters (in '000 US\$)				
Contractual services	21	79	43	143
E. Data Processing (Bank) (in '000 US\$)	-	10	-	10
F. OPS Resources				
Travel (number of trips per country)				
Principal supervisor	1	2	1	4
Others	1	2	1	4

Table 4.2

BUDGET FOR EDUCATION-INFORMAL SECTOR
RESEARCH PROJECT (\$)

Headquarters	Total Person Months	Monthly Salary/ Unit Price (in US\$)	Total
Resident consultant	16	3,500	56,000
Research assistant	16	2,000	32,000
Other consultants	6	3,500	21,000
Consultants, trav + per diem			24,000
Data processing			<u>10,000</u>
Subtotal			143,000
 <u>Ivory Coast</u>			
Director	10	3,200	32,000
Local consultants	16	2,200	35,200
Auxiliary workers	10	1,000	10,000
Printing	4,000 quest.	2.25	9,000
Coding	4,000 quest.	1.50	6,000
Punching	4,000 quest.	1.50	6,000
Data processing			10,000
Overheads			11,600
Seminar			10,000
Contingencies			<u>14,000</u>
Subtotal			143,800
 <u>Peru</u>			
Director	10	2,800	28,000
Local Consultants	16	2,000	32,000
Auxiliary workers	10	800	8,000
Printing	6,000 quest.	2.00	12,000
Coding	6,000 quest.	1.30	7,800
Punching	6,000 quest.	1.30	7,800
Data processing			8,000
Overheads			10,200
Seminar			7,000
Contingencies			<u>12,800</u>
Subtotal			133,600
 <u>OVERALL TOTAL, (FY83, FY84, and FY85)</u>			<u>420,400</u>

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1 / / /

3 / /

5 / / /

Household Survey*

A. Site Identification		Code	B. Survey Information	
(1)	(2)	(3)	(1)	(2)
A. 1. Province		6 / / /	B. 1. Name of Survey Taker	
A. 2. Strata		8 / / /		
A. 3. Region		10 / / /	B. 2. Date of Survey	
A. 4. Municipality		12 / / /	B. 3. Signature of Survey Taker	
A. 5. Village		14 / /		
A. 6. Cluster Number			B. 4. Name of Supervisor	
A. 7. Building Number			B. 5. Date of Supervision	
A. 8. Household Number		15 / / / /	B. 6. Date of Inspection (coding)	
A. 9. Number of Household Members		18 / / /		
A. 10. Number of Household Members over 10		20 / / /	B. 7. Signature of Supervisor	
A. 11. Location or address:				

* This is a skeleton household questionnaire to be adapted to the research design of this project and the particular country circumstances in which it will be administered.

D. Sources of Household Income

Codes
 Wage 1
 Account 2
 Both 3

What are the sources of income of this household?
 (Place checkmarks in the appropriate boxes.)

Sources of Income	Wage Earner	Own Account	Wage and own account	
(1)	(2)	(3)	(4)	(5)
D. 1. Agriculture	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	22 <input type="checkbox"/>
D. 2. Industry/handicraft	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	23 <input type="checkbox"/>
D. 3. Sales	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	24 <input type="checkbox"/>
D. 4. Transportation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	25 <input type="checkbox"/>
D. 5. Services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	26 <input type="checkbox"/>
D. 6. Other work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	27 <input type="checkbox"/>
D. 7. Government	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	28 <input type="checkbox"/>
D. 8. Private pension & transfer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	29 <input type="checkbox"/>

D. 9. Of the sources of income listed in column 1, which is the main source of income? Go to

D. 10. Of the sources of income listed in column 1, in the case of an own account (self employed) worker, which source represents his main source of income?

F. Identification of Household Member

F1. Name of household member:..... 1 / 13 /
 F2. Serial number of household member..... 22 / /
 F3. Marital Status: Single - 1
 Married - 2
 Widowed or divorced -3 24 /

G. Activities During the Past Week

Can you tell me what you have been doing for the past week, beginning yesterday....(name of day), then the day before yesterday....., 3 days ago, and so on.

G ₁ Day	G ₂ Type of activity	G ₃ Em- ployed (at least 1 hour a day)	G ₄ Employ- ed but did not go to work	G ₅ Look- ing for work	G ₆ Attend- ing school	G ₇ Taking care of the home	G ₈ Other (retired disabled etc.)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	
Yesterday,.....	<u> </u> ...hour(s)	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
Day before yesterday.....	<u> </u> ...hour	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
3 days ago.....	<u> </u> ...	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
4 days ago.....	<u> </u> ...	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
5 days ago.....	<u> </u> ...	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
6 days ago.....	<u> </u> ...	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
7 days ago.....	<u> </u> ...	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
(name of day)							
Total	<u> </u> / <u> </u> / <u> </u> / <u> </u> / hour(s)	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
Card Column	25-27	28	29	30	31	32	

I

J

(Block H to be asked only if there are no entries in columns 2, 3 and 4).

H. Attending School/Taking care of the house.

H₁. Have you looked for work during the past 3 months?

Yes No 33

H₂. Why aren't you looking for work?

1. Taking care of the house
2. Attending school /
3. Health reason / 34
4. Not prepared to go to work (retired, too old, etc.)

H₃. If a suitable job was available, would you accept it?

Yes No 35

I. Employed	Card Column
I 1. Where do you work and what kind of work is your employer engaged in? At.....Type of work.....	36 <u> </u> / <u> </u> / <u> </u>
I 2. What position do you hold or what type of work do you do?.....	38 <u> </u> / <u> </u> / <u> </u> / <u> </u>
I 3. Job status: 1. Worker or government employee <input type="checkbox"/> 2. Businessman without employees <input type="checkbox"/> 3. Employed by relative without pay <input type="checkbox"/> 4. Social worker <input type="checkbox"/>	41 <u> </u> / <u> </u>
I 4. How many hours did you work at this job during the past week?.....hours.	42 <u> </u> / <u> </u> / <u> </u>
I 5. Is the job you held during the past week the same job you held during the last 3 months? Yes <input type="checkbox"/> No <input type="checkbox"/>	44 <u> </u> / <u> </u>
I 6. What was your net income from this job during the past month? (Do not include income from agriculture listed in block E, column 8.) - In cash Rp..... - In goods Rp..... - Total Rp.....	45 <u> </u> / <u> </u> / <u> </u> / <u> </u> / <u> </u> / <u> </u> (hundreds)
I 7. Do you have any jobs in addition to this job? Yes <input type="checkbox"/> No <input type="checkbox"/> (proceed to line I 10)	50 <u> </u> / <u> </u>
I 8. How many hours did you work last week on all other jobs?.....hours	51 <u> </u> / <u> </u> / <u> </u>
I 9. What was you net income from all other jobs during the past month? (Do not include income from agriculture listed in block E, column 8.) - In cash Rp..... - In goods Rp..... - Total Rp.....	53 <u> </u> / <u> </u> / <u> </u> / <u> </u> / <u> </u> / <u> </u> (hundreds)

J. Looking for Work	Card Column
J 1. How long have you been looking for work?months	64 <u> </u> / <u> </u> / <u> </u>
J 2. Are you looking for full-time or part-time job? 1. Full-time <input type="checkbox"/> 2. Part-time <input type="checkbox"/>	66 <u> </u> / <u> </u>
J 3. From what source have you usually received income for your daily needs during this period? 1. Work 3. Family or friends 2. Sometimes work 4. Other	67 <u> </u> / <u> </u>
J 4. Have you ever worked before? Yes <input type="checkbox"/> No <input type="checkbox"/>	68 <u> </u> / <u> </u>

Other Income and Expenditures During the Past Month			
Income		Expenditures	
Type	Amount Rp	Type	Amount Rp.
(1)	(2)	(3)	(4)
1. Pension (Retired)		1. Remittances sent	
2. Remittances received		2. From deposits or savings	
3. Withdrawal from deposits or savings		3. Other (loans, payments, lotteries, investments, other funds)	
4. Other, (borrowing money, etc.)			
Total	Total
			69 <u> </u> / <u> </u> / <u> </u> / <u> </u> / <u> </u> / <u> </u>
			74 <u> </u> / <u> </u> / <u> </u> / <u> </u> / <u> </u> / <u> </u>

I 10. How much income did you receive during the past month from land and house rentals and interest payments?	58 <u> </u> / <u> </u> / <u> </u> / <u> </u> / <u> </u> / <u> </u>
I 11. If you have the time available would you be willing to accept additional work? Yes <input type="checkbox"/> No <input type="checkbox"/>	63 <u> </u> / <u> </u>

Data on Household Social and Cultural Affairs

1 /1/4/

K. Mass Media and Athletic Equipment in the Household				
1. Does this household have a radio?	Yes <input type="checkbox"/>	No <input type="checkbox"/>		22 <input type="checkbox"/>
2. Does this household have a television set?	Yes <input type="checkbox"/>	No <input type="checkbox"/>		23 <input type="checkbox"/>
3. Does this household receive newspapers (daily, weekly) or magazines on a regular basis?	Yes <input type="checkbox"/>	No <input type="checkbox"/>		24 <input type="checkbox"/>
4. Does this household have any athletic equipment such as raquets, volley balls, soccer, etc.?	Yes <input type="checkbox"/>	No <input type="checkbox"/>		25 <input type="checkbox"/>
L. Social Problems in the Household				
Has your household experienced any of the following problems during the year?				
	<u>Yes</u>	<u>No</u>	<u>Method of Handling Problems</u>	
- Accident, natural disaster, other	1 <input type="checkbox"/>	<input type="checkbox"/>	26 <input type="checkbox"/>
- Physical disability (e.g. blindness)	2 <input type="checkbox"/>	<input type="checkbox"/>	
- Illness preventing work	4 <input type="checkbox"/>	<input type="checkbox"/>	
- Aging/senility	8 <input type="checkbox"/>	<input type="checkbox"/>	
- Employment of children under 10	16 <input type="checkbox"/>	<input type="checkbox"/>	
- Other	32 <input type="checkbox"/>	<input type="checkbox"/>	

M. Social and Cultural Activities of Household Member Age 10 or Older

Name of selected respondent.....			
Serial number in block C, column 1.....		29	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
1 a. Have you listened to the radio in the past week? Yes <input type="checkbox"/> No <input type="checkbox"/>		31	<input type="checkbox"/>
b. If "yes", what type of programs are you interested in?			
- News 1 <input type="checkbox"/>	- Science 8 <input type="checkbox"/>		
- Entertainment or arts 2 <input type="checkbox"/>	- Language 16 <input type="checkbox"/>	32	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
- Sports 3 <input type="checkbox"/>	- Other 32 <input type="checkbox"/>		
2 a. Have you watched the television during the past week? Yes <input type="checkbox"/> No <input type="checkbox"/>		34	<input type="checkbox"/>
b. If "yes", what type of films are you interested in?			
- News 1 <input type="checkbox"/>	- Science 8 <input type="checkbox"/>		
- Entertainment 2 <input type="checkbox"/>	- Religion 16 <input type="checkbox"/>	35	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
- Sports/arts 4 <input type="checkbox"/>	- Other 32 <input type="checkbox"/>		
3 a. Did you go to the cinema during the past week? Yes <input type="checkbox"/> No <input type="checkbox"/>		37	<input type="checkbox"/>
b. If "yes", what type of films are you interested in?			
- War or history 1 <input type="checkbox"/>	- Drama 8 <input type="checkbox"/>		
- Detective 2 <input type="checkbox"/>	- Comedy 16 <input type="checkbox"/>	38	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
- Martial arts 4 <input type="checkbox"/>	- Other 32 <input type="checkbox"/>		
4 a. Have you watched any sports competitions during the last 3 months? Yes <input type="checkbox"/> No <input type="checkbox"/>		40	<input type="checkbox"/>
b. If "yes", what type of sports are you interested in?			
- Track and field 1 <input type="checkbox"/>	- Badminton 8 <input type="checkbox"/>		
- Swimming 2 <input type="checkbox"/>	- Volley Ball 16 <input type="checkbox"/>	41	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
- Soccer 4 <input type="checkbox"/>	- Other 32 <input type="checkbox"/>		

M. (continued)			
5a. Have you attended an artistic performance during the last 3 months?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	43 <input type="checkbox"/>
b. If "yes", which of the arts are you interested in?			
- Dance 1 <input type="checkbox"/>	- Drama 4 <input type="checkbox"/>		
- Music 2 <input type="checkbox"/>	- Other 8 <input type="checkbox"/>		44 <input type="checkbox"/>
6a. Have you participated in sports during the past week?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	46 <input type="checkbox"/>
b. If "yes", what type of sport do you frequently engage in?			
- Track and field 1 <input type="checkbox"/>	- Badminton 8 <input type="checkbox"/>		
- Swimming 2 <input type="checkbox"/>	- Volley ball 16 <input type="checkbox"/>		47 <input type="checkbox"/>
- Soccer 4 <input type="checkbox"/>	- Other 32 <input type="checkbox"/>		
7a. Have you engaged in artistic activities during the past week?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	49 <input type="checkbox"/>
b. If "yes", what type of activities do you frequently engage in?			
- Dancing 1 <input type="checkbox"/>	- Painting, sculpting 8 <input type="checkbox"/>		
- Music 2 <input type="checkbox"/>	- Other 16 <input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>
- Acting 4 <input type="checkbox"/>			50 <input type="checkbox"/>

M (continued)					
8 a.	Have you read a newspaper during the past week?		Yes <input type="checkbox"/>	No <input type="checkbox"/>	52 <input type="checkbox"/>
b.	If "yes", what type of articles are you interested in?				
	- News reports	1 <input type="checkbox"/>	- Sport, art, culture	8 <input type="checkbox"/>	
	- Science	2 <input type="checkbox"/>	- Novels	16 <input type="checkbox"/>	
	- Editorial	4 <input type="checkbox"/>	- Other	32 <input type="checkbox"/>	53 <input type="checkbox"/>
9 a.	Have you read a magazine during the past week?		Yes <input type="checkbox"/>	No <input type="checkbox"/>	55 <input type="checkbox"/>
b.	- News reports	1 <input type="checkbox"/>	- Sport, art, culture	8 <input type="checkbox"/>	
	- Science	2 <input type="checkbox"/>	- Novels	16 <input type="checkbox"/>	
	- Editorial	4 <input type="checkbox"/>	- Other	32 <input type="checkbox"/>	56 <input type="checkbox"/>
10 a.	Have you engaged in recreational activities during the past 3 months?		Yes <input type="checkbox"/>	No <input type="checkbox"/>	
b.	If "yes", did this recreational activity take place in home or outside the home?				58 <input type="checkbox"/>
	- in the home	<input type="checkbox"/>	- outside the home	<input type="checkbox"/>	59 <input type="checkbox"/>
c.	What type of recreational activities do you frequently engage in?				
	- spectator activities	1 <input type="checkbox"/>	- sport	4 <input type="checkbox"/>	
	- outings, picnics	2 <input type="checkbox"/>	- other	8 <input type="checkbox"/>	60 <input type="checkbox"/>
11 a.	Are you a member of an association?		Yes <input type="checkbox"/>	No <input type="checkbox"/>	62 <input type="checkbox"/>
b.	If "yes", which type of association?				
	- social	1 <input type="checkbox"/>	- funeral assoc.,	4 <input type="checkbox"/>	
	- art or sport	2 <input type="checkbox"/>	spiritual, lottery	8 <input type="checkbox"/>	
			- other		63 <input type="checkbox"/>

Data on Health of Household Members

1 /1/5/

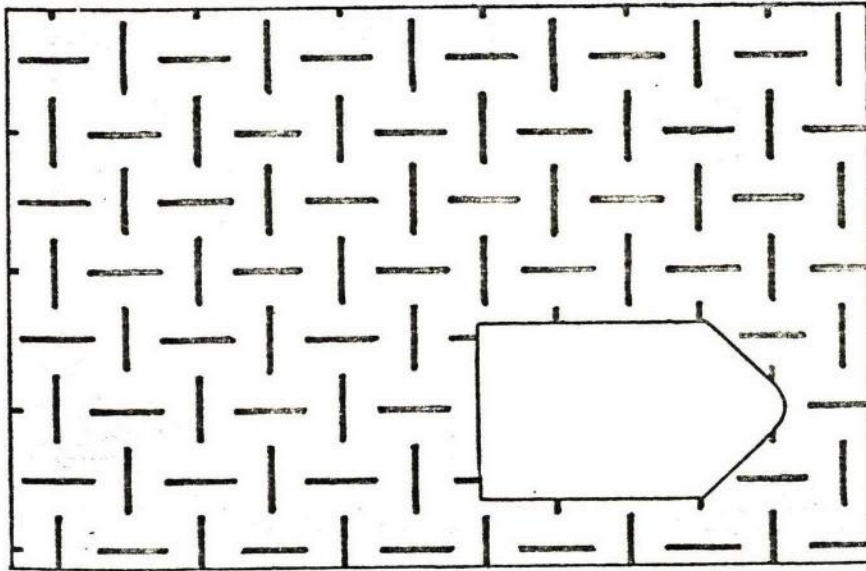
N. Housing Data		
1. Area of occupied floor space:.....m ²		22 <u> </u> / <u> </u> / <u> </u> / <u> </u> / <u> </u> / <u> </u>
2. Numbers of rooms:.....		25 <u> </u> / <u> </u> / <u> </u> / <u> </u> / <u> </u> / <u> </u>
3. Main type of material used in outer wall construction:		
1. Masonry <u> </u> / <u> </u>	3. Bamboo <u> </u> / <u> </u>	5. Other <u> </u> / <u> </u>
2. Lumber <u> </u> / <u> </u>	4. Earth <u> </u> / <u> </u>	
4. Main type of material used for flooring:		27 <u> </u> / <u> </u> / <u> </u> / <u> </u> / <u> </u> / <u> </u>
1. Tile <u> </u> / <u> </u>	3. Lumber <u> </u> / <u> </u>	5. Earth <u> </u> / <u> </u>
2. Concrete <u> </u> / <u> </u>	4. Bamboo <u> </u> / <u> </u>	6. Other <u> </u> / <u> </u>
5. Main type material used in roof construction:		28 <u> </u> / <u> </u> / <u> </u> / <u> </u> / <u> </u> / <u> </u>
1. Concrete <u> </u> / <u> </u>	3. Galvanized iron <u> </u> / <u> </u>	5. Thatch <u> </u> / <u> </u>
2. Lumber <u> </u> / <u> </u>	4. Tile <u> </u> / <u> </u>	6. Other <u> </u> / <u> </u>
6. Type of illumination:		29 <u> </u> / <u> </u> / <u> </u> / <u> </u> / <u> </u> / <u> </u>
1. Electric light <u> </u> / <u> </u>	3. Oil lamp <u> </u> / <u> </u>	
2. Pump lantern <u> </u> / <u> </u>	4. Other <u> </u> / <u> </u>	
7. Type of fuel used for cooking:		30 <u> </u> / <u> </u> / <u> </u> / <u> </u> / <u> </u> / <u> </u>
1. Electricity <u> </u> / <u> </u>	3. Kerosene <u> </u> / <u> </u>	5. Other (charcoal, etc.) <u> </u> / <u> </u>
2. Gas <u> </u> / <u> </u>	4. Firewood <u> </u> / <u> </u>	
		31 <u> </u> / <u> </u> / <u> </u> / <u> </u> / <u> </u> / <u> </u>

A. General Ability — Raven's Progressive Matrices Rationale

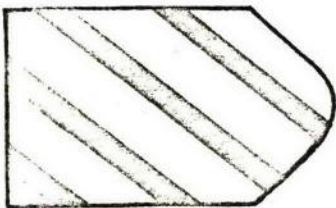
The geneology of the Raven's Progressive Matrices (or RPM) can be traced back to the investigations of Spearman into the nature of intelligence. It was his view that an undifferentiated concept of intelligence was less than adequate in describing cognitive abilities. Starting with the Standard RPM series, designed to sample the general range of ability, we will be able to provide a means to assess an adult's present ability to perceive and think clearly, irrespective of past experiences or present ability for verbal communication. The scales can be described as "tests of observation and clear thinking" and have been widely used cross-nationally with high levels of reliability.

— A —

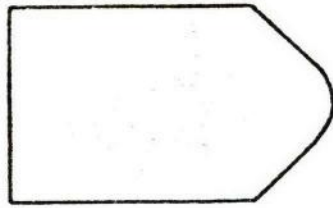
A |



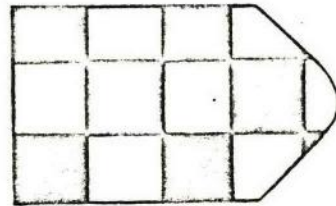
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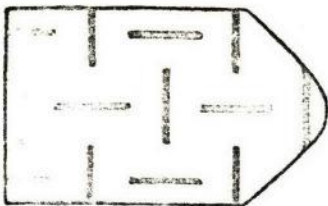
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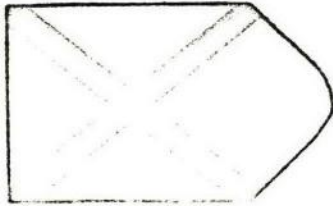
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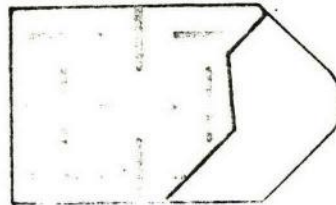
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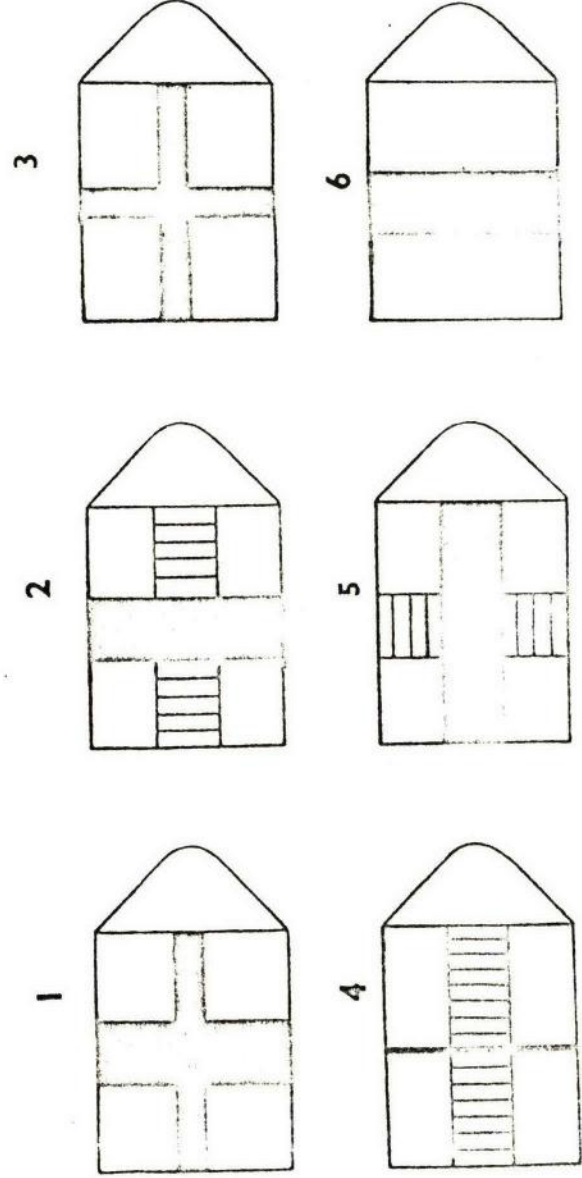
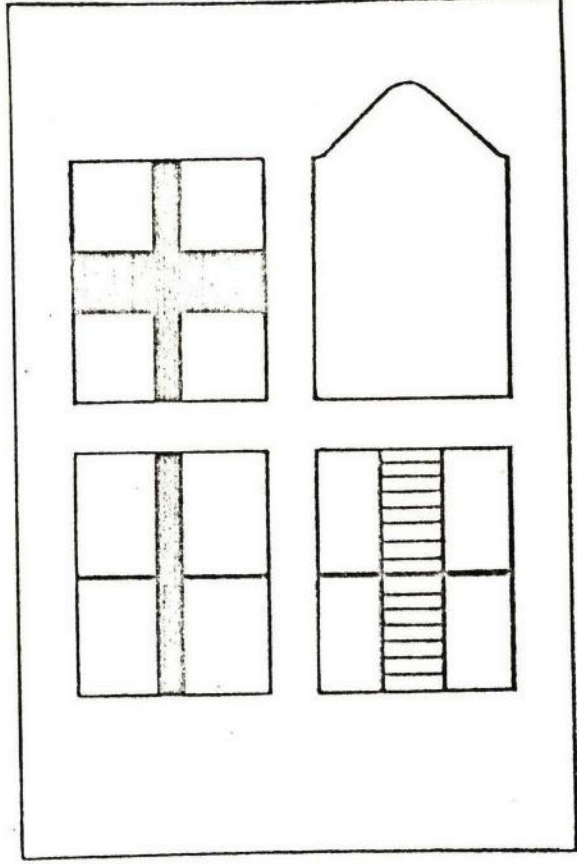
5



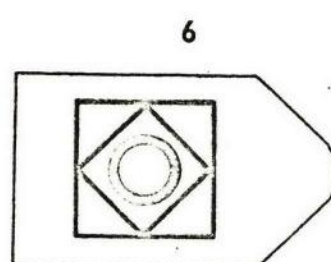
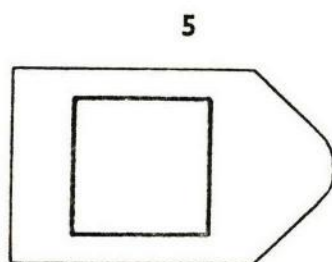
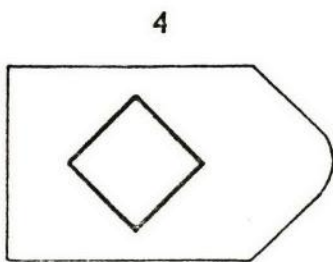
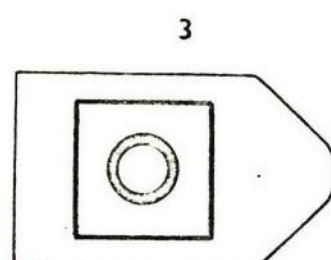
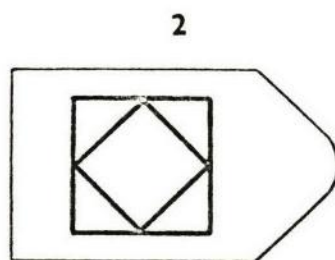
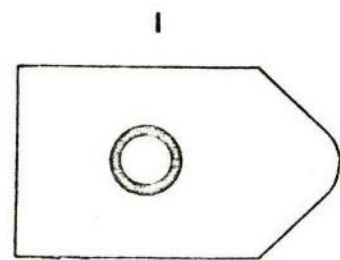
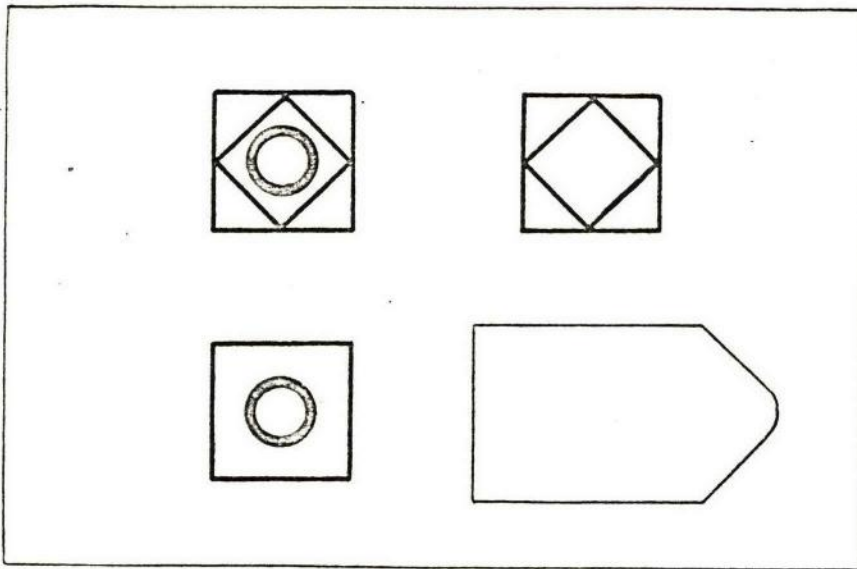
6



A3 12



B 12



B. Overall Modernity - the Short Form Rationale

Each of these items correlates well with the larger Overall Modernity scales in each of the six countries in the Inkeles (Harvard) study, at a highly significant level. Moreover, each of the questions was strongly correlated with the independent variables of education, urban experience and occupation. These items have been extensively incorporated in cross-cultural research. Since it is more or less inevitable that one or another question from a cross-national set may not serve well in a particular country, we have identified alternative questions for each of the above. Indeed we may ask the suggested alternate question as well, thus providing a pool of items which are theoretical equivalents, from which we may select those that are best understood and most discriminating in this particular study.

Purely Attitudinal Items^a

1. Have you ever (thought over so much) gotten so highly concerned (involved) regarding some public issue (such as . . .) that you really wanted to do something about it?
Frequently / Few times / Never
2. If schooling is freely available (if there were no kinds of obstacles) how much schooling (reading and writing) do you think children (the son) of people like yourself should have?
3. Two 12-year-old boys took time out from their work in the corn (rice) fields. They were trying to figure out a way to grow the same amount of corn (rice) with fewer hours of work.
The father of one boy said: "That is a good thing to think about. Tell me your thoughts about how we should change our ways of growing corn (rice)."
The father of the other boy said: "The way to grow corn (rice) is the way we have always done it. Talk about change will waste time but not help."
Which father said the wiser words?
4. What should most qualify a man to hold high office?
Coming from (right, distinguished, or high) family background
Devotion to the old and (revered) time-honored ways
Being the most popular among the people
High education and special knowledge
5. Which is most important for the future of (this country)?
The hard work of the people
Good planning on the part of the government
God's help
Good luck
6. Learned men (scholars, scientists) in the universities are studying such things as what determines whether a baby is a boy or girl and how it is that a seed turns into a plant. Do you think that these investigations (studies) are:
All very good (beneficial) / All somewhat good (beneficial)
All somewhat harmful / All very harmful
Some people say that it is necessary for a man and his wife to limit the number of children to be born so they can take better care of those they do have (already have).
Others say that it is wrong for a man and wife purposely (voluntarily) to limit the number of children to be born.
Which of these opinions do you agree with more?
7. Which one of these (following) kinds of news interests you most?
World events (happenings in other countries)
The nation
Your home town (or village)
Sports
Religious (or tribal, cultural) events (ceremonies) or festivals
8. If you were to meet a person who lives in another country a long way off (thousands of kilometers / miles away), could you understand his way of thinking?
Yes / No

9. Do you think a man can be truly good without having any religion at all?
Yes / No

Behavior-Information Items

10. Do you belong to any organization (associations, clubs), such as, for example, social clubs, unions, church organizations, political groups, or other groups? If "Yes," what are the names of all the organizations you belong to? (Scored for number of organizations.)
11. Would you tell me what are the biggest problems you see facing (your country)? (Scored for number of problems or words in answer.)
12. Where is (in what country is the city of) Washington / Moscow? (Scored correct or incorrect.)
13. How often do you (usually) get news and information from newspapers?
Everyday / Few times a week
Occasionally (rarely) / Never

Le développement socio-économique de la Côte d'Ivoire, comme celui de tous les pays du continent africain, passe par la formation des hommes. Celle-ci constitue pour la Côte d'Ivoire une priorité, qui se traduit, dans les faits, par l'affectation d'une part particulièrement importante du budget de l'Etat (46 % du budget de fonctionnement) aux dépenses d'éducation.

Mais quelle éducation et pour quoi faire ? "L'éducation au service du développement" tel est le mot d'ordre donné par le 7e Congrès du PDCI-RDA. Dans le contexte ivoirien, où l'homme n'est pas seulement l'artisan de la croissance économique mais aussi et surtout le premier bénéficiaire de celle-ci, mettre "l'éducation au service du développement" c'est à la fois répondre aux besoins du développement économique et aux aspirations de l'ensemble de la population.

Pour atteindre ces objectifs, la Côte d'Ivoire doit à la fois assurer un enseignement de base à tous les citoyens et une formation professionnelle à tous ceux qui en ont besoin pour exercer un emploi productif qualifié.

Des objectifs aussi ambitieux pour un pays dont les ressources financières sont limitées, nécessitent une planification rigoureuse des actions, un suivi permanent des besoins de l'économie, des réalités de l'emploi et un pilotage attentif du système de formation.

Dans le domaine de la formation professionnelle, la Côte d'Ivoire s'est doté d'un instrument original et efficace pour assumer cette tâche difficile : l'Office National de Formation Professionnelle.

X

X

X

Créé en 1966, et patronné alors par le Ministère du Plan, il est placé sous la tutelle du Ministère de l'Enseignement Technique et de la Formation Professionnelle lors de la création de ce dernier, en 1970.

.../.

Emanation de l'administration, il est en même temps en prise directe sur l'entreprise, tant par les fonctions qui lui sont dévolues, que par les modalités de son financement.

L'Office National de Formation Professionnelle est en effet un établissement public à caractère administratif qui a la particularité de tirer ses moyens d'existence, mais aussi les moyens nécessaires à la promotion de la formation, de taxes à la formation professionnelle. Celles-ci lui sont directement affectées pour assurer d'une part son fonctionnement et participer d'autre part au financement d'actions de formation. C'est ainsi que la taxe d'apprentissage (0,5 % de la masse salariale) et la taxe à la formation continue (1,5 % des salaires) viennent alimenter le budget de l'Office National de Formation Professionnelle et le Fonds National de régulation pour la formation continue qui, lui, sert essentiellement à financer la formation permanente dans les entreprises.

Le sort de l'ONFP est ainsi lié à celui des entreprises et ses moyens, directement conditionnés par le niveau d'activité de celles-ci.

X

X

X

L'Office National de Formation Professionnelle a pour tâche essentielle d'assurer un meilleur ajustement de la formation aux nécessités de l'emploi afin de faire de chaque Ivoirien, un agent actif du développement du pays. Il assume ainsi quatre fonctions primordiales :

- l'étude des relations entre la formation et l'emploi et la formulation des grandes orientations qui en découlent ;
- la programmation des actions de formation ;
- la promotion de ces actions notamment par la participation au financement et à l'encadrement de certaines d'entre elles ;

.../.

- L'évaluation des actions de formation entreprises par le Ministère de l'Enseignement Technique et de la Formation Professionnelle.

L'Office intervient aussi bien au niveau de la formation initiale qu'à celui de la formation professionnelle continue, tant en milieu urbain qu'en milieu rural. Sa souplesse de fonctionnement et son autonomie de gestion lui permettent, en évitant les lourdeurs administratives, de jouer pleinement son rôle.

X

X

X

Concrètement qu'a donc réalisé l'ONFP durant les quinze (15) premières années de son existence ?

En matière d'études, l'ONFP s'est peu à peu affirmé comme une source importante d'information aussi bien dans le domaine de l'emploi que dans le domaine de la formation. Son Centre de documentation spécialisé en la matière joue à ce niveau un rôle majeur au niveau national mais également au niveau inter-africain puisqu'il est en même temps le Centre de documentation du Centre Interafricain pour le Développement de la Formation (CIADFOR). Le champ d'étude couvert par l'ONFP n'est pas limité au seul domaine relevant de son Ministère de tutelle, mais concerne l'ensemble des problèmes posés par l'utilisation et la valorisation des ressources humaines en Côte d'Ivoire.

C'est ainsi qu'un dispositif cohérent d'études s'est peu à peu mis en place, comprenant :

- des enquêtes sur l'emploi tant dans le secteur moderne que dans le secteur informel, débouchant sur des statistiques d'emploi régulièrement mises à jour, ainsi que sur l'analyse du contenu des emplois et des modalités d'accès à ceux-ci.

- des études sur le système de formation permettant de produire régulièrement des statistiques scolaires et d'apprécier le rendement, le coût et l'efficacité de la formation.

.../.

- enfin, et sur la base de ces études, la confection d'un bilan prévisionnel emploi-formation permettant de comparer les besoins en main d'oeuvre de l'économie nationale et la "production" du système de formation.

C'est sur ce bilan que prend appui la concertation entre planificateurs, formateurs et employeurs, qui permet de dégager les orientations des actions à mener en vue d'une meilleure adéquation de la formation à l'emploi.

La programmation prend le relais de ces études pour les traduire en termes de projets ou actions de formation. Elle est en effet chargée de mettre en oeuvre les moyens permettant de concrétiser les décisions concernant les créations ou modifications des structures de formation dépendant directement du Ministère de l'Enseignement Technique et de la Formation Professionnelle. Elle assure trois (3) fonctions principales :

- la programmation générale et financière qui élabore les projets, les traduit en termes financiers et recherche les financements nécessaires à leur réalisation.

- la programmation technique et pédagogique qui précise les modalités pédagogiques du fonctionnement des structures de formation et les contraintes techniques qui en résultent.

- le suivi et le contrôle des réalisations.

Les structures, une fois mises en place, sont gérées par les Directions Centrales du Ministère de l'Enseignement Technique et de la Formation Professionnelle. Mais l'Office National de Formation Professionnelle intervient de nouveau, au niveau de l'évaluation et du contrôle de la formation.

Il est en effet chargé de vérifier que les réalisations et les résultats obtenus répondent bien aux objectifs fixés, d'identifier les causes des écarts éventuels, de proposer les correctifs nécessaires.

.../.

Des études sont donc menées systématiquement en vue de disposer en permanence de données complètes sur le système de formation et les projets de réalisation. Des enquêtes ponctuelles permettent en outre de faire, en fonction des besoins, des bilans sectoriels.

X

X

X

Ainsi l'Office National de Formation Professionnelle intervient essentiellement en amont et en aval de la formation. Il n'est pas pour autant écarté de l'action, bien au contraire. Sa fonction de promoteur et les possibilités de financement qui sont les siennes font de l'ONFP un agent actif de la formation. Quelques exemples suffiront à le montrer.

L'ONFP, dès sa création, a participé, sur ses fonds propres, à la réalisation d'établissements de formation; on peut citer notamment : le Centre Poids Lourds (devenu depuis Centre de Perfectionnement aux Métiers de l'Automobile), le Centre des Métiers du Bâtiment (devenu le Centre de Perfectionnement aux Métiers du Bâtiment), le Centre de Formation Professionnelle de San-Pédro, le Centre de Perfectionnement Audio-Visuel (CEPAV) ainsi que les Centres de Bimbresso et d'Odienné.

Il assure par ailleurs la gestion et le fonctionnement de structures de formation présentant un caractère expérimental, telles que le Lycée Professionnel Hôtelier ou, en milieu rural, les Unités Mobiles de Formation (spécialisées selon les cas dans les métiers du bâtiment ou de l'agro-mécanique).

Enfin l'Office National de Formation Professionnelle a pour charge de lancer et de gérer certaines opérations nouvelles, telles que l'apprentissage dans les entreprises, la formation professionnelle continue et d'assurer la mise en place d'établissements de formation de style nouveau, tels les 5 lycées professionnels de Jacquerville, Man, Odienné, San-Pédro et Gagnoa.

X

X

X

.../.

L'Office National de Formation Professionnelle apparaît donc comme un outil privilégié de promotion de l'emploi et de valorisation des ressources humaines nationales dans les différents secteurs de l'économie nationale.

Financé par les entreprises du secteur privé moderne, l'Office n'oublie pas pourtant que l'essentiel de la population ivoirienne exerce ses activités dans le secteur informel et particulièrement en milieu rural. L'agriculture ayant financé en grande partie le développement des secteurs secondaire et tertiaire, par un juste retour des choses, ces derniers contribuent à la promotion du monde rural. C'est ainsi que l'ONFP intervient aussi bien au niveau des formations de base que de la formation continue pour favoriser la promotion des petites entreprises et du secteur agricole.

En assurant ainsi un meilleur ajustement de la formation aux réalités de l'emploi en Côte d'Ivoire, l'Office National de Formation Professionnelle participe à la fois au développement économique du pays et à la promotion des hommes qui en sont le véritable moteur et les premiers bénéficiaires.

X

X

X

Au delà des frontières de la Côte d'Ivoire, l'Office National de Formation Professionnelle oeuvre activement pour une coopération étroite entre les pays d'Afrique dans le domaine qui est le sien. Il est en effet membre du Centre Interafricain pour le Développement de la Formation (CIADFOR), dont le Secrétaire Général est aussi le Directeur Général de l'ONFP.

Dans ce cadre une collaboration directe entre les organes de formation des différents pays d'Afrique s'est instaurée et se développe. Le CIADFOR regroupe en effet actuellement 19 pays africains et compte rassembler, à terme, l'ensemble des pays du continent, qui disposent ainsi d'un instrument indispensable pour promouvoir, ensemble, la valorisation de ce qui constitue la première richesse de notre continent : ses hommes.

JUILLET 1982

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CENTRO DE INVESTIGACION

PLAN DE
TRABAJO
1982 - 1983

PUBLICACIONES



LA UNIVERSIDAD DEL PACIFICO

La Universidad del Pacífico es una universidad privada cuya constitución y funcionamiento se ajustan a la legislación universitaria y educativa del país.

Fue creada como respuesta a la necesidad de conformar un centro superior de nivel de excelencia que atendiese las tareas de formación universitaria, de investigación y de prestación de servicios en las áreas de las ciencias económicas, sociales y administrativas que el proceso de desarrollo del país requiere con urgencia.

El 28 de febrero de 1962 el Gobierno Peruano autorizó la fundación de la Universidad del Pacífico mediante el Decreto Supremo No. 8, por el cual se aprobaban también sus Estatutos. Un nuevo reconocimiento legal le fue extendido por el inciso (b) del artículo 167 de la Ley Orgánica de la Universidad Peruana (Decreto Ley 17437, de febrero de 1969). Actualmente desarrolla sus labores académicas a través de cuatro Programas Académicos –Economía, Contabilidad, Administración y Post-Grado en Administración– y de cinco Departamentos Académicos –Matemáticas, Humanidades, Economía, Administración y Contabilidad, y Ciencias Sociales y Políticas–.

La naturaleza y funcionamiento de la Universidad se inspiran en los siguientes principios generales:

1. La necesidad de formar profesionales y técnicos científicamente competentes y socialmente abiertos a una mentalidad justa al servicio de las necesidades y desarrollo de la comunidad peruana.
2. La importancia de fomentar la investigación científica, humanística y tecnológica dirigida a contribuir efectivamente a la solución de los problemas de la comunidad peruana.

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3. El propósito de promover un eficaz diálogo positivo entre las personas que se integran dentro de su conformación y con las personas, entidades o instituciones que componen el campo social que le circunda.
4. La finalidad de servir a las necesidades del país y como tal no perseguir fines de lucro en ninguna de sus manifestaciones.
5. La garantía de independencia en su funcionamiento y en su gobierno, que es ejercido sólo por sus miembros bajo el principio de la autonomía que le es propia y necesaria para lograr plenamente sus fines específicos, en el campo normativo, académico, pedagógico, administrativo y financiero.

El régimen diseñado por la Universidad persigue la formación integral de sus alumnos a través del seguimiento del currículo académico, así como del desarrollo de diversas actividades que se contienen en el currículo paracadémico. El currículo académico o el Plan de Estudios es elaborado de acuerdo con los requerimientos de conocimiento profesional en cada una de las áreas de formación a cargo de la Universidad.

Dentro del currículo paracadémico se comprenden aquellas actividades que la Universidad considera necesarias para proporcionar a los alumnos no sólo una formación profesional sino también una formación integral. Forman parte del currículo paracadémico, por ejemplo, las labores investigacionales en sus diversos niveles, dada la indiscutible importancia que ellas revisten para una auténtica capacitación profesional. Estas actividades pueden ser desarrolladas en el Centro de Investigación.

EL CENTRO DE INVESTIGACION

El Centro de Investigación de la Universidad del Pacífico tiene por objetivo promover, dirigir, realizar y difundir investigaciones interdisciplinarias y labores conexas enmarcadas dentro de su reglamento. Su naturaleza y funcionamiento se orientan, dentro de la búsqueda de la verdad, a la formulación de modelos que conduzcan a un orden social humano, libre y justo, mediante la consecución de los siguientes objetivos instrumentales:

- a) Reflexionar y dar a conocer la realidad nacional en sus aspectos económicos, sociales y políticos, mediante la presentación, el análisis y la evaluación crítica de su problemática.
- b) Formular nuevas categorías conceptuales que lleven a proponer evaluaciones integrales de los problemas del país, procurando la formación de una escuela de pensamiento fundada en los principios de la Universidad.
- c) Contribuir a la formación integral de los miembros de la comunidad universitaria y al desarrollo de una metodología de enseñanza acorde con los propósitos y recursos institucionales.

El Centro cuenta con un Consejo Directivo presidido por el Director del Centro e integrado por representantes de los investigadores y de los estudiantes. Dos veces al año, el Consejo Directivo se amplía también con los representantes de los Departamentos Académicos y de los alumnos de cada uno de los Programas Académicos. El Director del Centro de Investigación es el representante del Centro, preside el Consejo Directivo y ejerce la gestión administrativa. Asimismo, el Centro cuenta con los servicios de asistencia, asesoría y apoyo administrativo internos.

El Centro está integrado por profesores de diversos Departamentos Académicos de la Universidad en el área de las Ciencias Sociales, que prestan sus servicios en régimen de tiempo completo. Actualmente, integran el Centro de Investigación trece (13) profesores en calidad de miembros del mismo. Asimismo, recibe como afiliados temporales a profesores de universidades extranjeras en calidad de miembros visitantes.

El trabajo del Centro es, fundamentalmente, interdisciplinario y en él tienen cabida las perspectivas propias de las distintas Ciencias Sociales. Sus miembros son graduados en economía, sociología, ciencia política, administración, ingeniería y jurisprudencia. Sus estudios de post-gradó han sido cursados en las mismas áreas, aunque hay el caso de sociólogos e ingenieros con post-gradó en economía, y de administradores con post-gradó en economía, de economistas con post-gradó en ciencia política, y de administradores con post-gradó en sociología.

El Centro orienta sus trabajos a la formulación de modelos que conduzcan a un orden social humano, libre y justo. Para ello, dirige sus esfuerzos a reflexionar sobre los aspectos económicos, sociales y políticos de la realidad nacional, analizando críticamente su problemática y proponiendo al respecto soluciones integrales.

En el Centro se estudia la realidad nacional e internacional en sus aspectos económicos, sociales y políticos, mediante la presentación, el análisis y la evaluación crítica de su problemática, con el fin de aportar nuevos elementos científicos, tanto en sus aspectos teóricos como metodológicos.

Por otro lado, el Centro trata de orientar la formación de los miembros de la comunidad universitaria hacia un trabajo intelectual donde no solo se transmitan conocimientos teóricos y técnicos sino, sobre todo, se logre una adecuada capacitación científica y donde la investigación se oriente hacia metas del más alto nivel científico.

Además de las labores de investigación a su cargo, el Centro desarrolla una actividad plural de diálogos y seminarios con invitados especiales, así como de publicaciones. Edita regularmente dos revistas: "Apuntes" y "Estudios Andinos".

Su producción a nivel de investigaciones se ha concretado en un conjunto de publicaciones.

El Centro de Investigación tiene también como una de sus funciones —y está en condiciones ventajosas para hacerlo— la de prestar asesoría en los campos de su competencia a entidades y organizaciones públicas y privadas, nacionales, extranjeras e internacionales.

Lima, abril de 1982.

EXPERIMENTACION DE UN PROGRAMA PSICOPE-
DAGOGICO DE APRESTAMIENTO Y NIVELACION
PARA EDUCANDOS DE PRIMARIA EN AREAS
URBANO MARGINAL Y RURAL

SANCHEZ/ VARGAS/ REYES/ SALAZAR.

El objetivo es validar un Programa Psicopedagógico de aprestamiento y nivelación, que sirva de complemento a los educandos de primer y segundo grado de primaria de áreas urbano marginales y rurales, considerando que son estos niños los que han tenido menos oportunidades para participar en los programas de Educación Inicial.

El Programa Experimental tiene como eje fundamental los procesos psicológicos y los contenidos matemáticos básicos. Además se experimentará una guía metodológica, instrumentos de evaluación y un módulo de material didáctico. Los productos y resultados de la investigación podrán ser usados en las Direcciones Técnico-Normativas para reajustar el currículum dirigido a los ámbitos urbano marginal y rural.

ORGANIZACION DE UN SISTEMA DE PREPARACION PRODUCCION Y DISTRIBUCION DE LIBROS DE TEXTO (SUB PROYECTO)

Dirección de Investigaciones/ Sub Dirección de Publicaciones y Material Educativo.

Participarán los Especialistas: UZATEGUI/ DASSO/ ZAVALLA.

La Dirección de Investigaciones en este Sub-Proyecto, se encargará de tres tareas concretas:

- Determinar cuántos prototipos de cada texto escolar deben producirse para cubrir la diversidad sociocultural del país; cuáles serán los tirajes necesarios; a qué centros educativos serán distribuidos cada prototipo.
- Analizar la información sobre los usuarios de los textos (educandos y docentes) que se requiere para el diseño de cada uno de los libros que se han de producir.
- Diseñar un sistema de seguimiento y evaluación del funcionamiento de todas las actividades con el fin de adoptar medidas correctivas.

INVESTIGACION TECNOLOGICA SOBRE ALFABETIZACION Y METODOLOGIA DE EDUCACION PRIMARIA DE ADULTOS

VALER/ AMAYA/ HIDALGO/ TASA/ SANCHEZ/ MONTALVA.

El objetivo general es validar el currículum y materiales educativos para la alfabetización, así como ejecutar estudios sobre aspectos metodológicos de la educación primaria de adultos, vinculados preferentemente a los problemas de las áreas rurales.

Para el trabajo de campo se seleccionarán tres lugares diferenciados del país (Costa, Sierra, Selva), teniéndose prevista la ejecución de Seminarios con docentes de Educación Primaria de Adultos, para sistematizar las experiencias sobre metodología de enseñanza-aprendizaje, que puedan contribuir al desarrollo de la educación de adultos en el país.

MÉTODOS Y TÉCNICAS DE AUTOEDUCACION PARA PROGRAMAS NO ESCOLARIZADOS Y CENTROS EDUCATIVOS UNITARIOS CEU

BULLON/ LOPEZ/ RIVAS/ MARCELO.

Es una investigación aplicada encaminada a proporcionar orientaciones metodológicas para propiciar la autoeducación —dentro de un marco de desarrollo de una conducta creativa y de autodisciplina— como uno de los recursos para solucionar la problemática de las escuelas primarias en las áreas rurales de nuestro país, con seis grados y un solo docente con muy limitada formación profesional y sin suficientes recursos didácticos.

Se lleva a cabo en dos fases: 1º) Trabajo de campo para caracterizar al educando, al educador de los CEU y a la realidad educativa y socio económico cultural en la que están inmersos y 2º) Diseño de Métodos, Técnicas y procedimientos adecuados para un proceso de autoeducación en las realidades estudiadas.



PROYECTOS
DE
INVESTIGACION
1983



Objetivos y Actividades del INIDE

El Instituto Nacional de Investigación y Desarrollo de la Educación es un órgano de ejecución del Ministerio de Educación que dirige, promueve, coordina, supervisa, ejecuta y evalúa:

- Proyectos de Investigaciones
- Producción de Publicaciones y Material Educativo.
- Programas de Profesionalización y Perfeccionamiento del Magisterio.
- Servicios de Documentación e Información Educativa.

Funciones de la Dirección de Investigaciones

La Dirección de Investigaciones forma parte del INIDE y contribuye al desarrollo de sus objetivos ejecutando proyectos de investigación educativa a nivel nacional, preferentemente sobre métodos, técnicas y materiales didácticos, presentando alternativas de acuerdo con las necesidades del docente, el educando y el desarrollo de las regiones del país.

Para su cometido está organizado en equipos multidisciplinarios de investigación, pues cuenta con el concurso de economistas, sociólogos, psicólogos, estadísticos, antropólogos, lingüistas y el aporte fundamental de docentes.

La Dirección de Investigaciones desde 1973 ha publicado más de 80 productos de investigación, cubriendo las siguientes áreas de trabajo:

- Estudios sobre el contexto socio-económico relacionados con el fenómeno educativo.
- Investigaciones básicas sobre el educando peruano.
- Estudios sobre currículum y tecnología educativa.
- Investigaciones sobre el docente peruano.
- Estudios sobre formación profesional y mercado ocupacional.
- Proyectos integrales de carácter experimental.

Vinculada a la política educativa del sector, la Dirección de Investigaciones del INIDE, cubre las necesidades del Ministerio, Regiones, Zonas Educativas y Organismos Descentralizados. Realiza también investigaciones en coordinación con otros países a través de convenios internacionales.

Programa Experimental de Estimulación Temprana con Base en la Familia

PROGRAMA EXPERIMENTAL DE ESTIMULACIÓN TEMPRANA CON BASE EN LA FAMILIA

ARELLANO/ ALCANTARA/ OLIVERA/ INGA/ ESPINOZA.

El Proyecto de investigación se propone experimentar y validar un programa de estimulación para niños de 0 a 3 años en zonas urbano-marginales de Lima, Tacna, Tumbes y Piura. El Programa funciona con una metodología de trabajo en los propios hogares, a través de la cual los padres realizan actividades educativas con sus hijos, orientados por animadoras previamente capacitadas y supervisadas por docentes de Educación Inicial.

Se evaluará los logros de los niños, padres y animadoras, así como el funcionamiento del programa en cuanto al proceso de enseñanza en el hogar y la utilización de documentos como: Estructura Curricular del Programa Experimental, Lista de Objetivos para niños y padres de familia, Fichas de Actividades, Manual de Nutrición, Higiene y Cuidados Permanentes del Niño.

LAS IMÁGENES DEL HOMBRE Y LA MUJER EN LOS TEXTOS ESCOLARES Y EN LA LITERATURA INFANTIL

UNESCO/ INIDE
ANDERSON/ HERENCIA.

El estudio explorará las imágenes de los dos sexos que son transmitidas a niños en la escuela primaria a través de textos y otros materiales de lectura usados en el aula. Se hará un análisis del contenido de los libros a fin de calificarlos según variables relevantes a los roles sexuales así como a los estereotipos de características atribuidas a cada sexo. A nivel de los docentes se estudiará el uso de textos y cuentos en el aula, y la concordancia entre su concepción de roles y atributos del hombre y la mujer, y el mensaje que es transmitido por los materiales de lectura. A nivel de los alumnos se evaluará el peso que puede asignarse a los libros de texto y cuentos infantiles en la formación de sus imágenes de los dos sexos, y los factores que determinan su mayor o menor asimilación. Parte importante del estudio serán las recomendaciones respecto a acciones concretas a fin de propiciar una mayor igualdad en la percepción del hombre y la mujer.

ESTUDIO SOBRE PERFILES DE FORMACIÓN Y CAPACITACIÓN DE DOCENTES EN EDUCACIÓN PRIMARIA, SECUNDARIA TÉCNICA Y SUPERIOR TECNOLÓGICA

BERAMENDI / CANALES/ CANDELA/ CHIROQUE/ BERMUDEZ.

El Proyecto estudia los perfiles de formación y capacitación de maestros de Educación Primaria, Educación Secundaria en áreas técnicas y Educación Superior Tecnológica. Se asumen como criterios de investigación: los intereses académicos y profesionales del maestro, las funciones asignadas en su escuela, la formación recibida, los requerimientos para el desarrollo educativo en áreas diversificadas, etc. Los perfiles también estarán referidos a los administradores y supervisores educativos.

Se sistematizan los estudios y antecedentes sobre el magisterio nacional, precisando, en 8 departamentos seleccionados y en áreas urbanas, rurales y suburbanas, las características regionales que permitirán elaborar perfiles básicos de docentes e informes sobre distintas realidades sociales, económicas, laborales, de formación y capacitación profesional.

PROYECTO EXPERIMENTAL DE EDUCACIÓN BILINGÜE - PUNO CONVENIO PERU - REPUBLICA FEDERAL ALEMANA

CASTELLARES/ ARANDA/ ROSALES/ VILLAVICENCIO/ OYARCE/ CUBA/ DIAZ/ KOMAREK/ BUTTNER/ VALDIVIA/ LOPEZ/ STACK.

El propósito final es elaborar, validar e implementar un modelo de Educación Bilingüe, acorde con las características socio-culturales y lingüísticas de las zonas rurales de Puno, con una población predominantemente monolingüe (quechua o aymara).

Se viene trabajando desde 1977 y están en proceso de elaboración y experimentación la adecuación de la estructura curricular de Educación Bilingüe a las condiciones socio-económicas y culturales de Puno, métodos y técnicas de enseñanza-aprendizaje, módulos de materiales educativos en quechua, aymara y castellano. La aplicación del modelo se realiza en una muestra de cerca de 100 centros educativos a cargo de docentes especialmente capacitados. Entre los materiales educativos producidos y en proceso de experimentación, tenemos los de aprestamiento, de Lenguaje en quechua, aymara y castellano como segunda lengua, para el 1º, 2º, y 3º. de Primaria, así como el de Matemática para el 1er. año. El Proyecto se desarrollará hasta abril de 1984.



1.- DESCRIPCION DE LA INSTITUCION

El Centro de Investigación y Promoción Educativa - CIPE - es una asociación civil, sin fines de lucro, inscrita con el N° 4084 en los Registros Públicos y reconocida por el Ministerio de Educación (R.M. N° 2501-78-ED), fundada en Diciembre de 1978 por un grupo de educadores y especialistas en las diversas áreas que hoy abarca la educación con la finalidad de contribuir de manera eficaz y concreta a la educación peruana.

El CIPE está inscrito con el N° 08382. Res. N° 232-79 EF/74-20 - como entidad perceptora de asignaciones cívicas deducibles, lo que faculta a recibir donaciones deducibles del impuesto a la renta para el cumplimiento de sus fines.

El CIPE cuenta en su estructura con un Concejo Consultivo, un Directorio y una Presidencia Ejecutiva, integrados por las siguientes - personas :

CONSEJO CONSULTIVO :

Rolland Paulston	- Universidad de Pittsburg
Sidney Grant	- Univesidad de Tallahassee, Florida
Patricio Rojas	- ex-Presidente de la CEPICIECC (OEA).
Mirian Tannahuser	- Asesora de Educación Especial
Horacio Rimoldi	- Director del Centro Interdisciplinario de Investigaciones en Psicología Matemática y Experimental -- (CIIPME). Universidad de Buenos -- Aires.
Luis Alberto Ratto	- Universidad Nacional Agraria-Lima

DIRECTORIO :

Francisco Miro Quesada Cantuarias
Hugo Díaz Díaz
Rolando Andrade Talledo
Raúl Vargas Vega
Oscar Valdivia Gutierrez

PRESIDENTE EJECUTIVO :

Luz Landazuri de Mautua



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File Title Informal Sector - Proposal Preparation - January to March 1983 - RPO 672-98		Barcode No. 30461072		
Document Date	Document Type CV / Resumé			
Correspondents / Participants				
Subject / Title CVs of Folke Kafka, Adolpho Figueroa, Victor Hugo Diaz Diaz, Juis Muelle Lopez, Francoise Achio, Aly Coulibaly, Ibrahima Guirassi, Robert Anderson, Diallo Bademba, and Achi Atsain				
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