

CHAPTER I

INTRODUCTION

Education and Economy : Theoretical Approaches

Expansion of Higher Education

There is a widespread belief that the educated persons (that is, Matriculates and above) suffer from an acute unemployment.¹ One of the phrases that is used to describe this situation is 'Educational Inflation.'

R.A. Gopalswami a former Director of the Institute of Applied Manpower Research in his minutes of supplementation to the Education Commission Report sums up the situation in this manner, "During the last decade the demand for higher educated manpower cohorts has been increasing from year to year at faster rate than ever before. At the same time, however, the annual turn-out of higher educated manpower cohorts from all the higher educational

¹Vide Blaug Mark.etc.The Causes of Graduate Unemployment in India (London, Allen Lane, The Penguin Press, 1969).
and
Kothari V.N. and Panchmukhi P.R. A Survey of Research in Economics of Education in India. ICSSR, New Delhi, 1975.

institutions of the country has been growing even faster than demand. As a result, the difficulty of securing higher educated employment has been increasing; and the numbers of higher educated employment seekers have grown excessively in different parts of the country. As employment becomes more difficult to secure, the pressure of demand for admission to higher educational institutions becomes intensified. Thus a process of 'higher educational inflation' has been building up. This is likely to get worse and worse because 'secondary educational inflation' has also been building up at the same time. It is now necessary to bring this inflationary pressure under control without any avoidable delay."² This observation was made as early as 1966. Since then the situation has further deteriorated.

This dissonance between demand and supply is the outcome of the twin phenomenon of the education system producing persons who cannot be employed because of limited opportunities in the economy. The problem has been summed up by the Planning Commission in the following words: "The unemployment rates in this category, specially

²Gopalswami R.A. Education Commission Report. Ministry of Education, Government of India, New Delhi, 1966.p.945.

in the youngest group (15-29) have been relatively higher for some time and an equilibrium between the growth of the educated labour force and employment opportunities has not been reached. The former is related to the demand for education which remains high because the private cost of education is low and a higher level of education is always associated with "better" employment, higher level of incomes and better status in society. Many who would like to start working after secondary school find that they are neither able to get jobs nor are they fit for self employment. Thus they continue with higher education not because of a strong academic urge but rather because there is not much else to do."

In the field of higher education, our economy does not seem to have kept pace with prolific expansion in education. It has been calculated that during 1960-70 enrolment in universities increased by 10 to 14 per cent per annum while the growth rate of the economy was 3 to 4 per cent per annum. But the gap between the annual growth rate of enrolment in higher education and economic growth became narrow in the next decade i.e. between 1970-80. The 1980-81 report of UGC shows that during the period 1971-72 to 1980-81 the annual growth rate in enrolment in

colleges was 3.5 per cent. However, it should be noted that when we examine the Faculty-wise enrolment of students we do find imbalance. It is minus in case of Science Faculty while as high as 60 per cent in case of Law. The pattern has almost remained the same over all these years and still majority of them is in Humanities. Table I(1) shows these all points. (Table I(1)^{is}/on next page).

Here lies the crux of the problem. It is no wonder that the outturn of such qualified persons has overtaken the market demand. If this is so, why in the long run the supply of educated persons does not get adjusted to the demand for it?

Returns to Education

One finds a paradoxical situation that on the one hand is vast educated unemployment and on the other hand the demand for higher education is ever increasing. The answer to the dilemma of this situation has been attempted by many authors within the human capital theory framework.³

³(i) Blaug Mark. "The Empirical Status of Human Capital Theory : A Slightly Jaundiced Survey" Journal of Economic Literature. September, 1976.

(ii) Lodha, Suresh K. "Education, Human Capital and Labour Segmentation." Unpublished paper presented at the Seminar held at the NCERT, New Delhi, November, 1977.

Table I(1)

Facultywise Enrolment of Students at University Level 1972-73 to 1977-78
(Thousands)

Faculty	1972-73	1973-74	1974-75	1975-76	1976-77	1977-78 (No. in thousands)	%	Percentage variation in 1977-78 over 1972-73
1 Humanities	1449	1527	1658	1713	1723	1817	71	25.4
Arts	963	1003	1056	1080	1079	1121	44	16.4
Commerce	319	340	390	415	430	464	18	45.4
Education	68	71	77	77	73	73	3	7.4
Law	99	113	135	141	141	159	6	60.6
2 Science Technology	708	696	697	701	695	732	29	3.4
Science	494	474	464	464	443	473	18	4.2
Engineering & Technology	83	87	91	96	100	104	4	25.3
Medicine	99	102	106	105	113	113	5	14.1
Agriculture	26	27	29	30	32	35	1	34.6
Veterinary Science	6	6	7	6	7	7	-	16.7
3 Others	11	11	12	12	14	16	1	45.4
Total	2168	2234	2367	2426	2432	2565	100	18.3

Source : Annual Reports, UGC, New Delhi.

Some studies on rates of return to education reveal that the private rates of return are higher in case of higher education while social rates of return are high in case of primary and secondary education.

So far as India is concerned, the various studies attempted⁴ on this aspect do not tread the problem in a comprehensive manner. Nallagounden, Mark Blaug and Pandit's study refer to urban India. Samuel Paul's study refers to management education. Harberger's study is

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- (iii) Schultz T.W. "Investment in Human Capital" American Economic Review, Vol.51, 1961.
 - (iv) Becker G.S. Human Capital (New York, National Bureau of Economic Research, 1964).
 - (v) Blaug M. "An Economic Interpretation of the Private demand for Education." Economica, May, 1966.
 - (vi) Fields G. "The private demand for education in relation to labour conditions in less developed countries" Economic Journal, 1974 p. 906-925.
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- (i) Kothari, V.N. "Factor Cost of Education in India" The Indian Economic Journal. Vol. XIII No.5 April-June 1966. and "Returns to Education in India" in Baljit Singh (ed) Education as Investment, (Meerut, Meenakshi Prakashan, 1967).
 - (ii) Pandit H.N. "Cost Analysis of Education in India - Private and Social Participation." Indian Educational Review, Vol.7 No.2, July, 1972.
 - (iii) Hussain I.Z. "Returns to Education in India - An Estimate" in Singh, Baljit Education as Investment, (Meerut, Minakshi Prakashan, 1967.)
 - (iv) Harberger, A.C. "Investment in Men Vs. Machines - The Case of India" in Anderson, C.A. and Bowman M.J. Education and Economic Development, (London, Frank Cass Col. Ltd., 1966.)

confined to Delhi, while Hussain's work pertains to a few cities. The main findings of these various studies are given in the following Table I(2) and Table I(3).

Table I(2)
Social Rates of Return to Education Over
Illiterates

Author	All Graduates	Arts & Science Graduates
A.C. Harberger	(16.9)	-
I. Z. Hussain	11	-
V.N. Kothari	(13)	(10)
A.M. Nalla Gounden	8.9 (7)	-
M. Blaug & Others	12.0 (8.9)	-
D.P. Chaudhari	11 to 22	-
H.N. Pandit	Less than 5	-

*Figures in the brackets are the returns over the previous lower stage of education.

Table I(3)
Social and Private Rates of Return to Education,
Urban India, 1960 (per cent)

Educational Level	Social	Private
1 Matric over Illiterate	12.2	14.7
2 First degree (B.A., B.Sc., B.Com.) over Illiterate	15.9	12.3

Source : M. Blaug & Others: The Causes of Graduate Unemployment in India, p. 237.

It is also found in the analysis that the social rates of return on higher education are lower than the social rates of return on material capital. This leads to over expansion of education. Due to various public subsidies the private rates of return on education are higher than the social rates of return on education and are much higher than the private rates of return on individual savings.

Prof. V.N.Kothari in his review article⁵ has observed "The dilemma of the situation is this. The social optimum rate at which the expansion of education should stop is higher than the desired private rate of return at which the individuals would cut off the demand for education but the actual private rates of return are higher than the actual social rate of return. Therefore, in countries following an 'open door' policy education tends to be over expanded." So one thing is certain and it has also been backed by research that education adds to one's income and if it ~~does~~ not immediately, it certainly does after sometime. The fact remains that a more educated person does get more income compared to

⁵ Kothari V.N. Review article on Blaug Mark etc. The Causes of Graduate Unemployment in India. Artha Vikas. Jan., 1971.

less educated person. There exists a positive link between his educational level and his earnings. Taubman* in his article has shown the difference of income between two such categories. It is true that there are other factors too besides education which are responsible for a rise in income.

Role of Education in Labour Market

However, education is responsible for one of the problems of structural imbalance. It fails to match the employment opportunities and expectations of the educated people. This is more true of a traditional educational system. Sometimes it is argued that additional education aggravates the employment problem by generating unrealistic expectations. This is not to say that the education causes unemployment but sometimes it tends to bring it to the surface. The educational expansion does not simply postpone the problem but it postpones it only to magnify it in the future.

Recent works in the field of economics of education reveal that educational planning must take into account the functioning of the labour market. The study of labour

*Vide op.cit. 14.

market shows that education does appear to be valuable to individuals even though it does not always generate employment. It appears that between any two groups of individuals of the same age and sex, the group with more education has an edge over other group from earnings point of view. This is found even in the same occupational category in the same industry.

It is true that besides education the factors like experience do add to income of a person but a person with more education starts off at a higher level and the difference between two groups-educated and less educated - will tend to widen over a period of time. This positive association between education and earnings is one of the most striking findings in the field of economics of education. It is one of the few safe generalizations one can make about labour market. It has been often argued that traditional education is irrelevant to the needs of less developed countries but it is surprising that no country has yet broken the existing pattern. So education everywhere is regarded as something which is valuable and financially rewarding. Financial consideration may not be the sole motivating factor but it is the most important.

The interesting question is why do employers pay more to better educated persons? The types of explanations which can be given are (i) education imparts vocational skills which are scarce in supply (ii) education disseminates definite social values (iii) education acts as a screening device and helps in selecting most able people for the jobs. Thus the explanations given are economic, sociological and psychological in nature.

Is it true to say that the earning differentials associated with additional education is one of those stable phenomena that has persisted in labour market over a long period of time? Perhaps answer to this question cannot be given once and for all.

The whole problem becomes more difficult because the casual observation of a labour market shows that there are imperfections of all kinds in this market. And one plausible rule-of-thumb followed is to go for more educated persons and educational qualifications are index of certain personal characteristics. Libenstein⁶ refers to this as 'skills labelling by paper qualifications'. To him this is a useful social invention since it reduces the cost of hiring in the labour market.

⁶Libenstein, Harvey, "Shortages and Surpluses in Education in Underdeveloped countries" in Anderson C.A. & Bowman M.J. Education & Economic Development. (London, Frank Cass Co. Ltd. 1966).

A great deal of work in regard to multivariate analysis of the determinants of personal earnings has been carried out largely in U.S.A. and also to some extent in underdeveloped countries like Kenya, Mexico, Thailand, Puerto Rico, Republic of Vietnam.

The broad implication of these studies is to show that education does raise earnings even if we hold constant (1) father's occupation (2) father's and mother's education (3) IQ at an early age (4) School examination records and (5) Sector and occupation of subsequent employment.

Except for age, it is education that is the most powerful single determinant of personal earnings from employment. The other factors no doubt count and affect to a certain extent but if there is any disadvantageous effect of it, perhaps it can be made up by education in the long run (like poor home background).

So one can say that mostly all three explanations given earlier hold simultaneously. Employers pay highly educated persons more even when their education has not taught them any specific skill because they are more

achievement motivated, are more self reliant, act with greater initiative, adapt easily to changing conditions, have better supervisory ability and benefit quickly from experience. They are not given higher earnings always for what they know but sometimes by keeping in view their approach to know better whenever required.

Educated Unemployment (upgrading, devaluation of degrees)

Though the doctrine that education is a type of investment and contributes to economic growth of developed and underdeveloped countries is well-known by now, how is it that poor countries are facing the acute problem of educated unemployment? India is the classic example of this. The explanations given for this are not adequate. The Indian students have become increasingly willing to accept low-paid occupations and as a result the salaries of graduates and matriculates have steadily fallen in real terms. This is the result which is predicted by economic theory in conditions of unemployment.

It is not a new problem for India of course. Even before independence official committees drew attention to the problem of educated unemployed. The fact that more than ten commissions and committees were appointed between 1927 and 1947 to study this problem speaks for itself.

In countries like India education is like the arms race, nobody gains and everybody runs in order to remain in the same place. This kind of phenomenon is known as a Hobbesian situation or the 'prisoner's dilemma'. In such a situation there is no wonder that in the labour market jobs go to the people who are more educated. This is not only true in case of India, Britain faces the same problem.

The educated unemployment reduces earnings associated with additional education via the phenomenon of upgrading which in its turn accentuates the demand for additional education. So Indian labour market has been responding in the classic competitive fashion to a situation of excess supply.

Equilibrium in educated labour market is possible not by wage rate variation but by variation in the qualifications for the available jobs. So when there is over supply of educated persons, employers may prefer more qualified persons for the jobs for which lower qualifications can serve the purpose. Thus the value of education in terms of given jobs may go down with increasing rate of educational expansion.

Devaluation of Degrees

We have only one study made by P.R.Panchmukhi⁷ to quantify the degree of devaluation for different educational categories for the period 1954 to 1974. Since this study is very much relevant to our own study, it is worthwhile to discuss the concept and methodology and findings of the study.

Explaining the concept of devaluation of education P.R.Panchmukhi writes in his article "...If education earnings have to undergo any change, they have to be realized through the media of occupation or jobs. In such a situation, employers may not alter job earnings, but would alter education earnings indirectly raising the educational requirements for the given job. In other words they have considered the money value of given education as lower than in the earlier situation. This is the phenomenon of devaluation of education. This is the case when there is a strong working of what one may call as job wage illusion, meaning that job earnings may not be altered

⁷Panchmukhi, P.R. "Devaluation of Education - A Quantitative Analysis" in Journal of Higher Education Vol. I. No. 1, 1975, University Grants Commission, New Delhi.

but education earnings may be reduced. Reduction in education earnings is possible for, there is no organization of labour according to educational categories. On the other hand, labour is well organized according to occupational or job categories and hence job wage reduction would be strongly opposed."

About the methodology of quantification he has adopted he writes "The method employed for quantification is very simple. Since devaluation is based on the preferences and actions of employers with regard to the employment of educated persons, it is necessary to know the employers revealed preferences and actions. Employers' preference for a higher educated individual for a job which does not require that higher educational qualification, can be termed as the ex-ante or planned devaluation. Employers' action of employing a person with higher qualification than the job needs may be termed as ex-post or realized devaluation. In a situation of extreme excess supply of education, planned devaluation may give a lower limit and hence realized devaluation. For the employers find that there is a very large supply of people with still higher qualifications than they expected and from among them, they can employ the required number on given jobs. What we are attempting to measure below is

the planned devaluation of education, which only gives a lower limit to the actual devaluation that has taken place in our country.

How should we understand the preferences of employers for different educational qualifications vis-a-vis given jobs? It was felt that the notification by employers about the job vacancies and the stipulation about the qualification and experience, may readily give this information. The data were therefore, recorded from the vacancy registers published in the leading news paper Times of India (Bombay Edition) about the following seven items (a) Specification of the job (b) Sector of employment : name of the concern or the field of its operation (c) Location of the concern (d) Educational qualifications to be satisfied by the applicants (e) Number of years experience preferred (f) Whether the employer is giving an in service training to the selected candidates and (g) The amount of pay for which the candidates are eligible. The data about the above items were collected for all the jobs notified in three selected years viz. 1954, 1964 and 1974 (in all the months of these years) Thus - 112 jobs were covered for 1954, 379 jobs were covered for 1964 and 319 jobs were covered for 1974. Data for each year were grouped according

to the identical jobs. Thus, in 1974 as many as 11 clerical posts were notified, 35 posts of Stenographers were vacant, 48 Engineers' jobs were to be filled in and so on. A comparison of the average educational qualifications - defined in terms of average number of years of schooling for the given job for 1954, 1964 and 1974 would give us an idea about the extent of the planned devaluation of education for that job. Similarly the average number of years of experience desired for a given job and the average pay were also calculated for each job separately for these selected years."

In regard to table of coefficients of devaluation of educational categories which we have given here he notes "...Eventhough from the above analysis we could derive a general conclusion about educational devaluation, we have not identified the educational groups according to the degree of devaluation. Such an identification is a fairly difficult task for many of the job categories, specification about education is not very precise. For instance the vacancy registers state in case of some jobs that graduates in Arts and Science, Commerce etc. can apply. In case of Diplomas and Engineering graduates, the branch of Engineering is not always specified.

However, looking to the nature of concern inviting application for jobs and with additional information given in the Vacancy Registers, the following table has been constructed:

Table I(4)

Coefficients of Devaluation of Educational Categories

<u>Degree of Devaluation</u>		<u>Educational Categories</u>
1	Up to 5 %	Medicine
2	5 to 10 %	Engineering degree
3	Above 10 %	Arts, Science, Commerce Engineering Diploma, Diploma in Telephone Operating

Thus, maximum devaluation is felt in case of the educational categories of Arts, Science, Commerce, Engineering (Diploma) and Special Diplomas. Minimum devaluation is felt in case of Medicine, education of Para Medical Personnel etc. One may note that by and large devaluation is larger in educational category which has experienced larger expansion in the stock and enrolment. Thus, enrolment and stock of graduates in Science and Commerce education has increased to a very

large extent (around 400 to 500 per cent within 15 years during 1950-1965) and hence devaluation is also very large in their case.

We can also notice that the unemployment rate and the coefficient of devaluation are highly correlated. (even though the rate of growth in the number of degree holders and unemployment rate are not highly correlated particularly in case of engineering). Devaluation in education might indicate a decline in the economic contribution made by the particular type of education. So the effectiveness of educational capital and its contribution in output generation can be seen from the degree of educational devaluation.

Bhagwati⁸ describes this as the 'Over Qualification Theory' of education since jobs get upgraded in regard to educational requirements under the process captured by the theory. Same theory keeping this essence has also been developed by Fields.⁹ This very theme has been also discussed in their article by Bhagwati and Srinivasan.¹⁰

⁸Bhagwati, J. 'Over-qualification, education and Welfare A Theoretical analysis,' M.I.T. Mimeo (1972).

⁹Fields, G. 'A theory of education and labour markets in less developed countries' unpublished Ph.D.thesis, University of Michigan, Ann Arbor (1972).

¹⁰Bhagwati, J.N. and Srinivasan T.N. 'Education in a 'Job-ladder' model and the fairness in hiring rule' Journal of Public Economics, Vol. 7, No.1, February, 1977.

The authors argue that their present analysis differs from Fields' analysis in certain respects. The authors have noted in their article "Finally, we should note that no simple theory of education - Ours (Jobladder and fairness-in-hiring) or the Schultz-Becker (human capital) or the radical (Socialization) or Arrow-Spence (Screening) is likely to fit the entire educational system in any country. If we had to generalize at the peril of over-simplification, we would guess that the fairness-in hiring theory is likely to apply most to liberal arts education in less developed countries with developed educational systems inherited from progressive colonial governments (eg. in Asia) the screening theory most to liberal arts education in the developed countries, and the human capital doctrine to technical and scientific education in both LDCS and DCS:"

So it is essential to examine the labour market and how it functions. One thing is certain, any theory of education is different from others in certain respects. Education changes the personality of a man and he is different kind of labour with the educational background. This fact is very important. What are the changes or differences that take place? This is interesting to

examine. The traditional theory of education reveals that education confers skills which are vital for human capital formation. This has been developed by Chicago school.

An alternative view of education has been advocated by Spence¹¹ and Arrow.¹² Education according to them acts as a filter, screening and grading the educated. Arrow asserts "Higher education contributes in no way to superior economic performance, it increases neither cognition nor socialization. Instead, higher education serves as a screening device, in that it sorts out individuals of different abilities thereby conveying information to the purchasers of labour." Education does not impart training or socialization. So education in itself is not productive in the sense of imparting skills or socialization to the educated but it does manage to convey the information about ability to prospective employers. So by acquiring education, therefore, those with ability are able to secure better wages and there is private return to education. But there can be a gap between private and social rate of education.

¹¹Spence, M. 'Job market Signalling' Quarterly Journal of Economics, 87, pp.355-374, 1973.

¹²Arrow, K.J. 'Higher Education as a Filter' Journal of Public Economics, 2, 0. 193-216, 1973.

An altogether different view of education can be that it is an instrument for job competition. If the wage is sticky, an excess supply of labour at that wage cannot be cleared by lowering the wage. In such a situation, the obvious tendency on the part of an employer would be to prefer more educated person to uneducated or less educated. This seems fair as educated have put in more to obtain the job. It is possible that job does not require any education at all for satisfactory performance. The 'fairness' principle of preferring the educated in hiring thus turns education into an instrument for competition for jobs. This yields a divergence between private and social rate of education.

Thus functioning of the market for educated labour, in the traditional neo-classical writings, takes the form of a flexible wage. The excess supply of educated labour leads to a reduction in the wage until the market is cleared.

One can also say that as in standard Keynesian short run analysis if the wage is sticky, the excess supply of educated labour can result in open unemployment. It is true that the educated labour force could always seek employment in the uneducated labour market.

It can be argued that in some cases the 'fairness-in-hiring' rule may only be an indirect proxy for screening for better ability. This is however not necessarily so. This is evident to us from the fact that employers advertise for jobs, specifying lower educational requirements than they finally decide. This reflects the deteriorating value of degrees acquired.

It is also seen that when the educated labour force exceeds the jobs for which it is qualified, then the excess supply filters down to the 'next best' job in the 'job ladder'. Thus the average wage of educated labour is again cut in effect. So in such a labour market as Spence has discussed in his article, the employer does follow some 'signal' given by education of the person concerned.

In spite of limitations of the 'screening' method it is definitely helpful to the employers in selection. This concept or hypothesis of screening has been very well discussed by Stiglitz¹³ in his article. Similar type of attempt concerning screening has been made by Taubman and Wales¹⁴ also in their article.

¹³ Stiglitz, J. "The theory of 'Screening' education and the distribution of Income" American Economic Review, 1975, 65, pp.283-300.

¹⁴ Taubman P.J. and Wales T. "Higher Education, Mental ability and screening" Jn. of Political Economy, 1973, 81, pp.28-55.

Labour Market (Some Studies)

Thus the labour market for educated is worth examining especially of a country like India with all its peculiar characteristics. The important questions are, how does the labour market for educated persons function? Does it function as shown in a perfectly competitive model? What sort of imperfections are found in such a market? Some important studies made in this regard are worth noting. Out of them the most important study is by Blaug.¹⁵ Besides this study of Blaug there is another interesting study by him (ILO)¹⁶ and another ILO study almost on the similar lines by Emmerij Louis,¹⁷ Sharma and Apte¹⁸ have raised certain points which are based on 1971 census data. They have also worked out the incidence of unemployment.

Blaug and others find that there is sluggishness in the 'reaction speed' in the market of educated persons.

¹⁵ Blaug, M. Layard P.R.G. and Woodhall M. The Causes of Graduate Unemployment in India. (LSE Studies on Education) (Allen Lane, The Penguin Press, 1969)

¹⁶ Blaug, M. Education and Employment Problem in Developing Countries. ILO Office (Geneva) 1973.

¹⁷ Emmerij, Louis, 'Education and Employment - Some Preliminary findings and thoughts', International Labour Review, January, 1973.

¹⁸ Apte, G.D. and Apte, M.D. 'Graduate Unemployment in India' Economic and Political Weekly, June 19, 1976.

There are number of reasons for this sluggishness of labour market. It can be due to difficulties of changing jobs, inadequate information about jobs, preference given to older candidates in appointments etc. However, it is wrong to say that there is complete rigidity in the market. Since educated persons accept jobs of lower category the real rewards to these persons have been falling.

The present pattern of employment of graduates especially of arts, commerce and science cannot be considered optimal by any standard. There are many jobs done by graduates for which matriculation is enough. So there is a mismatch between education and employment and the 'over qualification' phenomenon is easily found especially in these categories.

The discussion done so far in view of the theoretical approaches adopted by different authors poses certain important points. Similar type of important points are also raised because of the peculiar characteristics of the labour market in a country like India and the way in which this labour market functions.

The different theoretical approaches clearly bring

out that though there are limitations of the 'screening' or 'signal' devices adopted by the employers in the labour market, it certainly helps them in selecting persons they require. Since higher educated persons are willing and available to do work even on lower wages, the employers obviously prefer them. The prevailing situation of acute educated unemployment in the labour market is advantageous to them. And it has been their experience that these higher educated persons turn out to be more useful to them in the long run if not immediately than the less educated. Out of all the criteria at their disposal for judging the potential candidates, that of education is perhaps with all its limitations more reliable and hence it is given the highest weightage by them while screening the candidates.

But when this is the attitude taken by the employers in the labour market, it is understandable that the persons who seek employment decide to go for higher education. This is the type of passport which is almost a must for them.

Second point which clearly comes out from different theoretical approaches and the functioning of the labour market is the phenomenon of 'Over-qualification'.

This is the obvious result in the prevailing situation which is found in the educational field and the labour market. It has been noticed in a country like India that gradually the employers went on up-grading the requirement of qualification for the jobs. And in a country like India, the classic example is that of the clerical occupation in which a matriculate would serve the purpose. As such both Matriculates and Graduates are perfect substitutes of each other. But a number of higher educated persons i.e. Graduates and Post-Graduates who are as a matter of fact 'Over-qualified' for such clerical posts are willing to work on Matriculate's pay-scale because of acute unemployment. Hence the phenomenon of 'Over-qualification'.

The third point which comes out is that because of this phenomenon of 'Over-qualification' in such countries, it is the obvious result that the emoluments of these Matriculates and Graduates tend to decline. Their excess supply goes against them and keeps their emoluments lower in the labour market. And over a period of time though their monetary wages seem to be rising a little as such their real wages decline. This is because in a country like India the prices have been steadily rising all along.

These are some of the important points which come out from the different theoretical approaches and the functioning of a labour market in a country like India. We can cite many other points also but we need not raise all of them here. It would be sufficient if we can test some of the important hypotheses which are well known in this field of economics of education. It would be interesting to see whether some of the hypotheses which have been empirically tested elsewhere hold true here or not.

The clerical occupation offers enough scope, because of its peculiar characteristics, to test some of the important hypotheses developed by these different theoretical approaches. These approaches have especially developed these hypotheses from the functioning of the labour market. The clerical occupation which is a part of this labour market promises an interesting analysis not only of the peculiarities of this labour market but of the educational field too.

It would be too ambitious to examine all the important hypotheses and hence we have restricted our analysis to some of the important objectives only which we shall see little later on. It should also be noted

that it would be extremely difficult to test and examine all these important points of research at all India base or even at State level. In such an effort a number of limitations creep in, keeping in view all these points, it is decided to examine the clerical occupation only with reference to Surat city. A detailed analysis of different aspects connected with this occupation becomes feasible.

II Clerical Personnel

Nature of Clerical Occupation

Thus in the light of the theoretical approaches discussed, we propose to study the clerical personnel in Surat city. In India during last 3 to 4 decades, the education system has expanded at a very fast rate (enrolments increasing at almost 10 per cent per year at a compound rate). The economy has grown at 3.5 per cent rate. There has been an imbalance between educational expansion and economic growth, resulting not only in growing unemployment among the educated but also in "Over-qualification" or "Devaluation of Degrees."

The clerical occupations represent the largest absorbant of educated persons. They are the lowest

category among the white-collar non-technical jobs. They are the last resort of the Graduates from the "Open door" branches of Higher Education — namely Arts, Science and Commerce. As such we expect all the trends in the interaction between education and economy to be reflected here.

Clerical occupations are fairly homogeneous everywhere. They require only general education. Traditionally, clerical jobs in India used to require Matriculation Qualification (High School Graduation). But recently there has been a trend towards upgrading of qualifications. Clerical jobs are table jobs and are a natural preference of the middle classes in India. No special training except typewriting is required. Jobs consist of filing, copying, keeping records, verification work, checking, simple accounts, typing. These jobs do not require any great mental or intellectual abilities or initiative. They are routine subordinate type of jobs. The opportunities for promotion are limited. One enters as a Junior Clerk then rises to the position of a Senior Clerk, Head Clerk and finally becomes a Superintendent.

Employer Organizations and Their Requirements

Clerical occupation is ubiquitous occupation to be found at all levels — public sector, private sector, small industry, large industry, central, state and local government.

Since this occupation does not need highly trained persons we find that in most of the organizations, the minimum qualification laid down to employ a person is only matriculation. But in the last few years there has been substantial devaluation of the educational degrees and number of Graduates and Post-Graduate offer themselves to join this occupation because of acute educated unemployment. Hence we see some organizations where the minimum qualification laid down is a Graduate degree.

In our study also out of selected organizations, there are few which employ persons who have minimum qualification of matriculation while there are other organizations which do not employ matriculates, but only those who have at least a Graduate degree, it is the minimum qualification laid down. So we have both type of organizations.

Clerical Occupation in India (Some features)

In the last few years this occupation has been growing in size substantially. Unfortunately 1971 census did not provide us the data occupation-wise and hence we are unable to get the figure either at All India level or State level of total number of persons engaged in the clerical occupation.

Even if a detailed analysis is not made, there are features of this occupation which catch immediate attention.

Firstly, there is a considerable degree of 'Over qualification' in recent years, this is not to say that there are no cases of 'under-qualification'. But nowadays, one often comes across cases more of over-qualified people. This is bound to happen in any country where education has been allowed to grow at such a rate with 'open door policy' in higher education than it has capacity to absorb them in the employment market. And since, the supply remains always in excess of demand, there cannot be any other result than this. But in such a situation, it is the natural tendency on the part of the employers who adopt 'screening device' for

their candidates, to upgrade the qualifications required for their jobs or keep the lower qualification but appoint the persons who have more qualification from education point of view. This degree of over-qualification does indicate the waste of resources and many other things connected with the educational field.

But this is what has exactly happened in a country like India especially in the clerical occupation and is visible right now. The position of educated unemployed persons is naturally bad and since the job is linked with the degree, they are forced to go for higher education whether they are willing or not, in absence of which they are not qualified for jobs. So there is 'rat race' for such education. Once they are more in number in the situation of acute unemployment, they are helpless and join the clerical occupation. And once the job is available, they more or less remain there for ever. There is hardly any choice for them. This is more true in case of academically weak students.

So today we find number of graduate and post-graduate degree holders engaged in clerical occupation for which mostly a matriculation qualification is required by the employers. And there are many more unemployed,

anyday if offered they are willing to join this occupation. The obvious approach is better to have something than nothing. And this race continues.

✓ Second striking feature connected with this occupation is the inconsistency between the educational qualification of a person and the nature of work he has to perform. It has been found that in many cases there is hardly any link between the two. This is certainly an indirect waste of the talent. Many science Graduates and Post-Graduate degree holders are found engaged in the clerical occupation where they do not have to use their subject knowledge at all. This definitely develops non-job satisfaction. They are a frustrated lot. But still they consider themselves more lucky than others who have failed to get any employment. ✓ Same is found in case of Arts and Commerce Graduates also. The question many a times arises, Does clerical occupation require at all a particular type of qualification? or the basic Matriculate qualification is sufficient and thereafter some training serves the purpose? Is it at all necessary to have any link between the degree and job? This is a question which needs attention and it is revealed by any study of this occupation.

✓ Third, noteworthy feature of this occupation is wage differentials. Of course, one can say that this is not the story only of this occupation but ^{of} others also in our country. It certainly speaks of irrational wage policy which has created tremendous frustration due to injustice caused to certain sections of the employees. These salary differences are found between different type of institutions and sometimes within the same institution also. In clerical occupation, it is seen that persons with same qualification but employed in two different institutions draw different salaries and benefits. The situation becomes a sorry state of affairs when a better qualified person draws less than a person engaged in ^a different institution with less qualification. Sometimes it seems that it is more of accident that one is in one institution while other is in a different institution. One can today easily see in case ^{of} clerks working in Banks, LIC, Private concerns etc. compared to clerks working in other institutions. Especially, when a Graduate or a Post-Graduate degree holder finds hardly any difference from salary point of view between him and a Matriculate there is every reason that not only he starts doubting educational system but also gets frustrated.

Other Important Points

Apart from these three salient features, there are many other interesting points worth examining connected with this clerical occupation. What sort of family background they have? Does it in any way affect the education and employment of a person? What sort of academic record do they have? Is there any difference found between bright students and weak students in getting employment? What is the difference in their emoluments? What is their experience background? What is their past employment history? What sort of mobility is found whether it is vertical or horizontal?

So it is worthwhile examining their personal data, academic data, employment data and employment history. Such a study can certainly throw much light on the situation and can come out with some important findings and guidelines which become useful from policy point of view. It is not to say that any attempt in some form has not been made to study these important different aspects. But any study confined to one place is a worth study. Hence we have taken Surat city as a case study for research.

Objectives

Some of the important objectives of the present study are as follows:

- (1) Is it true in case of clerical occupation that there is a positive link between education and earnings of a person? Do earnings differ with the different qualifications? Is it true to say that better qualified persons have better earnings in this occupation? Do earnings tend to widen as the time passes by? So testing of these all points is the first objective of the study.
- (2) What sort of differences are found between the clerks engaged in the organized sector and the unorganized sector? Thus a comparative analysis of these two sectors is the second purpose of the study.
- (3) ✓ 'Screening' hypothesis in the labour market by now is well known. Does it hold true in this occupation also? Testing of this is the third objective of the study.
- (4) In a country like India in these years it is obviously found that there is a substantial degree of 'Over qualification'. It is also seen that there is much inconsistency between the degree and the work the

persons have to perform. And there are wage differentials between various organizations in the organized sector. How far these all three features are found in the clerical occupation? Examining the nature and extent of them in detail is the fourth objective of the study.

(5) The fifth basic objective of the study is to examine the personal data, academic data, employment data and employment history in great detail. This is bound to throw much light on many issues. In view of this, we propose to study further the following objectives also.

Personal Data

(i) What sort of family background do they have from parents' education, occupation, income point of view? Since this is low paying occupation, Is it true to say that majority of them come with a weak background? Does this background matter? Because it has already been found that apart from education which is of course very important, there are other factors which also affect earnings of a person, and out of them one is family background. How far it is true here?

(ii) Is it true to say that as the years pass by the family background's nature also gets changed? Does the social mobility change?

(iii) What are the profiles of poverty of these persons? i.e. What is the average family size, average income of the family etc. Is it true that they have a poor background in this regard?

Academic Data

(iv) Since this is not the occupation of a high order, is it that the persons here engaged have poor academic record? Are there any differences found between different organizations? Is it true to say that better organizations attract better qualified people in this occupation?

(v) Is it true to say that as the years pass by the earnings differentials widen between different organizations? What are the differences found in emoluments and other benefits between them? Do better qualified people get more than less qualified?

Employment Data and Employment History

(vi) Can it be said that persons with better academic background is in a better position to switch over from one organization to another?

(vii) What was their average waiting period to get their first job? Is it true to say that more educated

persons have to wait for a lesser period than less educated?

(viii) If this present job is not their first job, how many times have they changed their jobs? Why did they leave their past jobs? Do better qualified people change concerns more often? Are they more mobile than others?

(ix) What are their prospects in the present job? Do better qualified people have an edge over less qualified in getting better prospects? How about horizontal and vertical mobility in this occupation?

(x) What were their sources of getting employment? These are the basic objectives of the study. When examined in great detail there would certainly arise certain important issues from education, labour market and employment policy point of view. Answers to some of the vital questions can be found here (e.g. why there is this much rush for higher education with this much educated unemployment etc.) This is the significance of the study that by examining these objectives in detail, it would be able to throw light not only on this occupation but also on various issues connected with it. In last few years some basic characteristics have been found in the labour market, educational field etc. and

since this occupation employs a large number of educated persons, a research study of this occupation carries a lot of significance in a country like India.

Methodology

The present study attempts to study the clerical occupation of Surat city in detail. The study covers both the organized sector and unorganized sector. In the organized sector eleven organizations have been selected and they have been selected in such a way that they become representative. They are from Municipal Corporation, State Government, Central Government, Semi-Government, Zilla Panchayat, Banks, Life Insurance Corporation, Private Sector, Academic etc. The organizations which have been selected for the study are (1) Surat Municipal Corporation Office (2) Collector Office (State Government) (3) Income-Tax Office (Central Government) (4) Zilla Panchayat Office (5) Bank of Baroda Main office (Lead Bank in this area) (6) District Co-operative Bank (Leading Co-operative Bank in this area) (7) Life Insurance Corporation Divisional Office (8) South Gujarat University Office (9) Baroda Rayon (Private concern) (10) Navin Flourine (Private concern) (11) Surat Electricity Co. Ltd. (Private concern). The main purpose of

selecting various organizations different in nature is to have a comparative picture.

A detailed questionnaire was prepared in which persons engaged in this occupation in these eleven organizations were personally interviewed and were asked to supply their Personal data, Academic data, Employment data and Employment history. This covers their family background, academic record, their salary and other benefits, experience background, change of jobs and reasons for that, extra work if they are doing, the period for which they had to remain unemployed, the sources through which they could get their jobs etc.

A uniform sample of 10 per cent was taken from each organization and with this 163 persons engaged in this occupation in these eleven organizations were interviewed with the help of ^{the} questionnaire prepared. Thus it is a random sample survey of 163 persons from the organized sector. This field work was carried out in the year 1977-78 and the position in each office was taken as on 1st April, 77.

In order to have a comparative picture of the organized sector and the unorganized sector, it was

decided to interview few persons in the unorganized sector also with the help of same questionnaire. There is a wide disparity between these two sectors in India and hence it was felt worthwhile to study it.

But no sampling method was adopted for the unorganized sector and at random 25 persons were interviewed. The number was kept limited because a larger number would not serve much purpose. Even a limited number can represent the picture. And secondly, the employers are always very reluctant in this sector to provide information and even the employees in this sector are also very much hesitant to give such information out of fear of their employers. It is indeed difficult to get information from this sector. Today over all also we can see that in India we have very limited information about this unorganised sector where 90 per cent of India's labour force is employed. So in order to study the similarities and dissimilarities between these two sectors, it was felt necessary to study few persons engaged in this sector.

Thus in all $163 + 25 = 188$ persons from both the organized sector's organizations and the units of unorganized sector were interviewed with the help of a prepared questionnaire.

Scheme of Chapters

The present study has been divided into six chapters.

(I) Introductory chapter which we have already dealt with.

(II) Analysis of the organizations in the organized sector in Surat city. This chapter attempts to analyse the Personal data, Academic data, Employment data, Employment history of selected 163 clerks in detail. (III) This third chapter deals with the further analysis of the organizations in the organized sector. As such the analysis of the organizations of the organized sector has been divided in two chapters i.e. II and III. It is more convenient to do so because a detailed analysis of this sector involves so many points and it is better to keep them in two chapters rather than one. (IV) This fourth chapter covers the units of the unorganized sector and analysis of the personal data, Academic data, Employment data and employment history of selected 25 clerks from this sector. We have also examined some peculiarities of this unorganized sector. (V) This fifth chapter attempts a comparative picture of the organized sector and the unorganized sector. It tries to find out the similarities and dissimilarities in clerical occupation between these two sectors. (VI) The sixth and the final chapter is a concluding chapter. It tries to examine the

various issues that take place from the study and certain policy issues. In the beginning, it notes the summary and important conclusions -- findings of the foregoing analysis of the study.

Surat City

The Census data reveal that the total population of the city in the year 1961 was 2,88,026, in the year 1971 it was 4,71,656 and the latest 1981 Census data show that it is almost 9 lakhs at present. This speaks of the growth of population of the city in last two decades. So within two decades the total population has increased by four times which shows that how rapidly this city has been growing.

In Gujarat State population wise it is the second biggest city. It is next to Ahmedabad. At present, the city is well known all over the country for its two leading unique industries. One is diamond industry and other is art silk industry. The migration of workers from different areas of the country to the city delineates the growth of the city in last few years from economic point of view which has created more employment and business opportunities.

The industrial development opportunities have been rapidly rising in last few years and this process has given more employment opportunities. It can be seen from the 1971 census data that the percentage of labour force engaged in manufacturing was 19.3 per cent which was second in the Gujarat State, next to Ahmedabad where it was 31.2 per cent. The second rank of Surat city in this regard speaks for itself.

Since this is the second largest city of the state, it is obvious that city has many Central Government Offices, State Government Offices, Semi-Government Offices. Banks, Private Organizations, Autonomous Bodies and the number of them has been naturally growing in last few years because of the growth of city. But then it speaks of the development of the city which has been expanding with more opportunities both from business and employment point of view. It is true that city does not have big Public Sector Complexes like Baroda but then the recent Fertilizer Complex is the beginning which would throw many opportunities. The city might get few more in near future.

It is the peculiarity of the city that it does not have big government or private industrial concerns

like Ahmedabad and Baroda but it has a large number of small units in the unorganized sector especially in Art Silk industry and in diamond industry. So it is a city of small but thriving industries.

Data Limitation

Unfortunately, we do not have systematic and latest data on different aspects of big cities. These cities have been growing very fast in last few years. It appears that a good deal of research is needed in this direction which can provide us systematic data on the growth of these big cities and also the profiles of these big cities need to be examined in great detail. This is not to say that no attempts have been made by their corporation authorities or State Governments but the attempts are very much limited in nature and hence provide information about these cities which appears to be insufficient.

True, census carried out every decade in the country, they provide very useful data and provide substantial data on different aspects. But then it is quite possible because of the limitations of their attempts, they are not able to provide data which are

exactly required by a researcher and this becomes the handicap for a researcher.

Since 1971 census data did not have classification of persons occupation-wise, we are not in a position to get the idea of number of persons engaged in clerical occupation in Surat city in the organized sector. If this is the situation of the organized sector then one can't be hopeful about the unorganized sector about which we have very limited official information. Unfortunately, very few attempts have been made to collect useful data regarding various important aspects of the unorganized sector in the country. A good deal of research is required in this direction so that we can have a better picture of this sector which employs 90 per cent of India's labour force.

Hence because of this limitation we are not in a position to have figures of total number of persons engaged in clerical occupation in Surat city both in the organized sector and unorganized sector.

As stated earlier for our present study we have interviewed in all 188 persons, 163 from the organizations of the organized sector and 25 from the units of the unorganized sector.

Selected Organizations in the Organized Sector

As stated earlier, we have selected eleven organizations from this sector. Let us now have a look at them and see briefly what sort of organizations they are.

(i) Surat Municipal Corporation

Since it deals with number of affairs of the city it is obviously a very big organization. It can be seen from the figures which have been given later on that it employs the highest number of clerks amongst eleven organizations we have selected. This is obvious looking to the activities it has to carry out.

(ii) District Collector Office is the second organization that we have taken. This is a State Government Office and a very important office since collector is in charge of the entire District and deals with many important aspects of the Surat District.

(iii) Income-Tax Office is the third one which we have taken. This is the Central Government concern and it is one of the most important offices of the Central Government.

(iv) Because of the decentralization concept adopted in the country, we have below state, District Panchayats

also and each district has one Panchayat Office known as Zilla Panchayat Office. It deals with all panchayats of all Talukas which are below District and hence becomes an important office which deals with many important aspects in different fields of the talukas covered by it. So we have taken it for our study.

(v) Bank of Baroda (Main Office) : This is one of the leading nationalised banks of the country and is a lead Bank in Surat area. So we have taken it for our study. The banking industry in the country has been recruiting a sizeable number of educated persons as clerks. Since compared to other organizations, it offers a little better salary, other pecuniary benefits and long run better advantages, it has attracted better qualified persons in this occupation. And hence it becomes interesting to examine one of the bank's offices.

(vi) Surat District Co-operative Bank : The country a few years back adopted the concept of co-operative movement in many fields. Banking was one of them. This concept has certainly succeeded well in certain areas in certain fields. Surat area can boast that it is one of the most successful areas in this regard, in banking field. Hence we have selected this bank which is the most

successful co-operative Bank in this area. It can also give a comparative picture with a nationalised bank.

(vii) Life Insurance Corporation of India (Divisional Office)

This monopoly concern of Government of India has grown fast since 1956 after nationalization of all the insurance companies and converted into one big Corporation managed by Government of India. It is one of the very important Corporations of the Government and has acquired a great degree of significance. Banks, and this concern are in forefront and well known for better salaries, other benefits etc. and hence educated persons are extremely eager to join them and consider themselves lucky if they succeed in getting a job even as a clerk. Since it also employs a large number of clerks and also all educated, it is worthwhile to take it up as a study case. This concern has also become nowadays controversial one and one of envy for others. It is considered to be a 'wage island' to a certain extent. For this reason also and to have a comparative picture with other concerns, it was felt essential to take it.

(viii) Baroda Rayon (Private concern) : It is true that Surat does not have big private concerns. Yet this is one

of the leading Rayon Plants in the country and is the biggest private concern in Surat city. So it has been taken up for the study. The private concerns, especially leading ones are known for giving better salaries, other benefits, working conditions etc. This is one of them. And hence educated persons in the city are very much eager to join it. It is always interesting to compare a private concern with a non-private concern and study the difference between them. This is also the reason to take up a private concern for the study. Another reason is that it also employs educated persons of good quality because normally the private concerns are more conscious of quality of persons, returns etc.

(ix) Navin Flourine (Private concern) : This is one of the leading chemical plants in this area. And in private concerns, it is next to Baroda Rayon and hence it has been taken up for the study. Apart from a comparative picture of a private concern with a non-private concern, it is sometimes also interesting to have a comparative picture of two private concerns. This is one of the reasons for taking it for a study.

(x) Surat Electricity Co. Ltd. (Private concern) : This is one of the leading private concerns in the city and

also a very old concern. It is interesting to note that electricity management is done by a private concern which is generally not the case with other cities in the state. There it is managed by Gujarat Electricity Board which is not a private concern. This company is also known for its better benefits, salary, working conditions etc. and hence has attracted a good number of educated persons in the city and from outside. So from this point of view, it was felt necessary to select it for a study.

(xi) South Gujarat University Office : This is another organization which employs a good number of educated persons as clerks. Its all conditions are almost on line of the State Government and hence these educated persons are willing to join. Another advantage like some other concerns is that a job here is not transferable and this is given lot of consideration by them. Thus this is the eleventh and the last selected from the organized sector in Surat city.

It can be seen from the selection of these eleven concerns that they are concerns from different sectors and they are various in nature. Because of varieties, it becomes interesting to study them and compare them. So care has been taken to see that it serves the basic

purposes of the study and covers important organizations of the city.

Selected Organizations and Clerks

As stated earlier, 163 persons have been selected who are working as clerks in various cadres in these organizations. A uniform 10 per cent sample has been taken from all of them. With these, the details of the cases taken are as follows which have been given in a tabular form. The table below gives these figures.

Table I(5)

Organizations, Total Number of Clerks and
Number of Clerks Considered

Organization	Total number of clerks in the organi- zation	Selected number of the persons (10 % sample of the total)
1	2	3
1 Surat Municipal Corporation	555	56
2 District Collector Office	53	5
3 Income Tax Office	112	11
4 Zilla Panchayat Office	84	8
5 Bank of Baroda	78	8

Table I(5) Contd.

1	2	3
6	Surat District Co-operative Bank	59 16
7	Life Insurance Corporation of India	313 31
8	Baroda Rayon Corporation	105 10
9	Navin Flourine	37 4
10	Surat Electricity Co.Ltd.	127 13
11	South Gujarat University Office	111 11
Total		1634 163

Questionnaire and its Purpose

The detailed analysis which follows in Chapter II and III is a consolidated analysis of the eleven organizations selected from the organized sector and give us an aggregate picture of them. It is based on the information received from these clerks with the help of a prepared questionnaire. Each person was personally interviewed and was asked to give data in the said canvassed questionnaire. The questionnaire has tried to cover almost all important information pertaining to this type of cadre. It gets information about their age-group, family background, income, educational level, social

status of the family etc. It has been proved in many studies that this type of background does play an important role in one's career apart from the type of qualification one possesses.

It also attempts to get information regarding the individual concerned his/her academic career both at the school/college level, the type of qualification acquired, income, any other extra skill possessed by the person which adds to his income. It also tries to get the picture of employment data and employment history. What was the waiting period for these educated persons to get their first job? How many of them had to remain unemployed and how many of them had not to. Is it correct to say that a better qualified person has comparatively less waiting period to obtain the first job? i.e. the waiting period of a graduate is less than a matriculate. Similarly, is it true to say that an average earning of a better qualified person is more than a less qualified person? True such studies have been attempted in the past in India and abroad both. Apart from some of the points mentioned above, it also tries to see how far there is over-qualification amongst these persons, whether there is any inconsistency between the degree they possess and the type of work they

are doing. And also what sort of disparity prevails in their emoluments and perquisites between these persons working as clerks in different type of organizations.

So broadly it can be said that the questionnaire attempts to cover (1) Personal data (2) Academic data (3) Employment data and (4) Employment history.

It is true that most of the points related to this clerical occupation are much discussed and well known. But here is an attempt to see that how far this belief is correct and whether we are able to establish such known points empirically.

Naturally, the other purpose is to know the exact plights of these educated persons who have been working in the clerical occupation for quite sometime or who have recently joined. One thing is certain that over all it is not a happy lot. And because of certain peculiar characteristics of labour market and educational field in such countries, some problems are connected with these persons who are the products of the system. What are their plights? What has gone wrong so far? Are there any remedies to correct the prevailing situation? These are some of the questions which need to be answered.

More often than not they are mentioned but very few attempts are made to examine them empirically. The data collected from these 163 persons from different type of organizations does help in establishing certain hypotheses empirically. The following is the detailed analysis.

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