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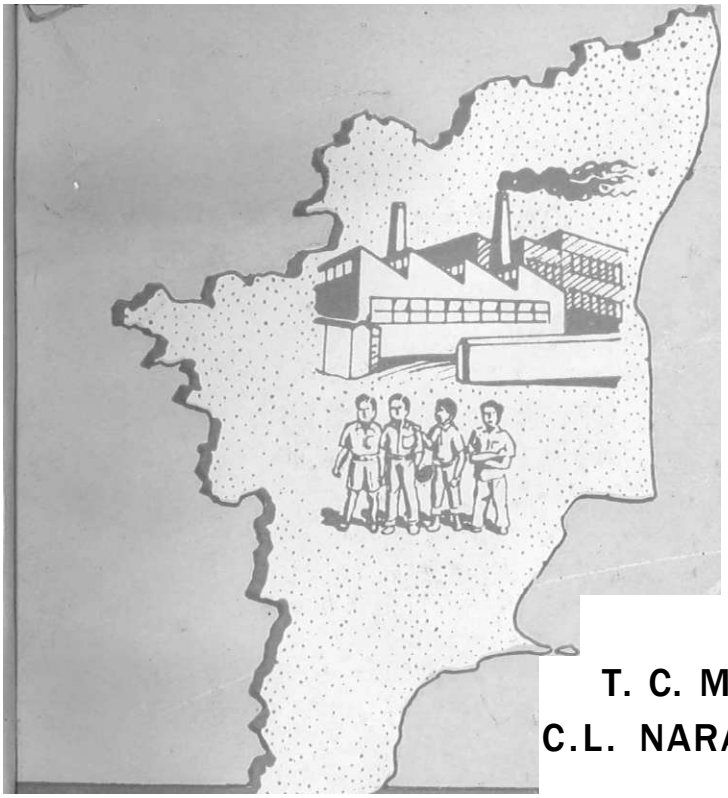
THE STATUS OF UNEMPLOYED ITI CRAFTSMEN IN TAMIL NADU



T. C. MOHAN
C.L. NARASIMHAN

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A SAMPLE SURVEY 1973

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T. C. MOHAN
and
C. L. NARASIMHAN

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PREFACE

The analysis of the problem of unemployment among ITI trainees in Tamil Nadu which is the subject of this monograph does not suffer from any of the ambiguities that characterise the treatment of problems of employment and unemployment in India and other Third World countries that have been highlighted by the Dantwala Committee in our country and by the ILO studies on Sri Lanka, Kenya and in the World Employment Programme. Here we are concerned with persons able, willing and trained to work in specific jobs but for whom there are no jobs. Their period of unemployment is not covered by their having to work anyhow even literally to the point of scratching for a living. They are overtly unemployed, and during the period of unemployment supported by their parents and/or relatives.

As on June 30, 1975, 20,000 ITI trainees in the State were unemployed, against an annual output of 7,000 trainees from its 31 Institutes. There seem to have been some perverse factors at work in this process. On June 30, 1964, there were 1,348 trainees who were unemployed, and this number had jumped to 15,677 by June 30,1972 and 20,000 by June 30,1975. At the same time, the number, intake and output of these Institutes kept expanding continuously. In 1956, there were six Institutes, which were increased to 10 by 1961 and to 31 by 1975. The intake has increased from 1,200 in 1961 to 13,112 students in 1975. The output of trained craftsmen, which was 1,107 in 1961, doubled to 2,229 in 1964 and trebled to 7000 by 1975.

This unidimensional expansion in ITI institutions' intake and output through the 20 years of their history occurred even as the unemployment of their trainees was mounting at a geometric ratio. In 1961 there were 200 trained ITI craftsmen registered with the employment exchanges, in 1964 theunemployed increased to 1,348,

but by 1972, they had grown to 15,677 and topped 20,000 in 1975. The first obvious conclusion suggested is that there was no attempt at even a rudimentary planning of the demand-supply equation in regard to trainees.

The causes for the growing and massive unemployment of trainees are multi-faceted. The primary cause is the industrial stagnation of the State economy as measured by such indicators as the increase in the number of working factories between 1961 and 1971 which was 57 per cent for India as a whole and a mere 4 per cent for the State, and the industrial production index for the State which was ahead of the all-India index at the beginning of the decade-end (sixties) but has lagged behind increasingly in the interim and so into the seventies. In some sectors like engineering industries, the last 10 years show a disturbing trend towards deceleration. Under these conditions either positive efforts had to be made to get industrial growth on to the 8-10 percent rate as planned or the intake of the trainees should have been reduced by around 25 per cent to balance supply with demand.

A second factor that explains the growth of unemployment at the macro-level is the failure to adjust training to micro-changes in trade category demands. Both the analyses of the employ, ment exchange statistics and the data of sample survey conducted among 849 ITI trainees show that the demand for craftsmen is contracting among fitters, welders, motor mechanics, turners, wiremen, while the demand for draughtsmen, electricians, blacksmiths, moulders, carpenters and sheet-metal workers is on the increase. To be more precise, the evidence is negative; the unemployment trend in the former group is positive and accelerating and in the latter negative and declining. However, no effort was made to increase the supply of trainees in those categories where the demand was on the increase while reducing the intake in those where the demand was slackening or declining.

Putting both the causes analysed together, what emerges is an educationally fossilised ITI structure, where curricula, courses of study, training specialities and admission policies are not only not responsive to market preferences but are not adjusted to reflect the secular trends of demand decline that had emerged

over a decade. If there was the problem of using the capital cost involved in the building, workshop and the teaching staff of the Institutes, it could have been ensured through programmes of retraining, of refresher courses, of restructured old courses or in new courses or in integrated inter-trade programmes instead of continuing with more of the same medicine to the ill patient.

Another factor that made for unemployment was the relative unemployability of the trainee. The training content of the ITI programme is largely theory based with some laboratory/workshop practice. Even the latter are somewhat routinised standard exercises. The ITI welding trainee knows the basic theory of welding but cannot do an actual welding job without industrial experience. One way to make the IT! trainee more employable would therefore be to change the present training programmes to a sandwich type of course where class-room teaching can alternate with industrial work. The lack of such training has made employers prefer their own trainees and apprentices to the ITI-trained craftsmen.

At this point the irrelevance of the Apprenticeship Act and the training provided under it must be referred to particularly because the 20-point programme of the Prime Minister provides for an extension of the coverage of the Act as one means of increasing employment. The evidence obtained during the survey, as also evidence recorded during studies conducted by the State Government, is that many industries satisfy the letter of the Apprenticeship Act in taking on the number of specified apprentices ; but then the apprentices are used to run errands and do odd jobs, such as fetching tea, cigarettes or are allowed to hang around the factory idly till the time out is tolled. Thus the trainees who have also had the apprenticeship drill are as unemployable as those who have not.

The analysis in the monograph summarised above indicates the broad lines for the future development of this programme. First, there should be a reduction in the overall intake by something of the order of 25 per cent. Secondly, there should be an annual stock-taking of the demand for different categories leading to the establishment of trends that can guide the categories in which there needs to be a reduction and those in which there

must be an expansion of training opportunities. Thirdly, the staff and equipment rendered surplus in such curricular restructuring should be used for refresher and retraining programmes and for inter-trade courses. Fourthly, certain trades might be phased out of the ITIs and left to the public and private sectors to fill in as they are tending to do anyway and other new ones like television mechanics, tractor mehanics, machinery and die-casting mechanics, in which there is a growing future, started. Fifthly, in these trades where the ITIs continue to function, production centres might be established as adjuncts to the campus as a means of providing the actual, practical industrial training which is lacking in the present form of class-roora teaching and also of increasing the number of employment opportunities.

All these are recommendations addressed to the supply side of the equation. There remains the action to be taken on the demand side to revive the economy in order to stimulate medium and small scale industry to grow at the 8-10 per cent forecast in the plan documents, give special incentives to labour-intensive, employment-generating industrial programmes which will increase the opportunities both for paid employment in the public and private sectors and more importantly, provide the climate for use by the ITI trainees of the many facilities for self-employment approved by the public sector banks and the State. This is really the moral of this monograph. The supply adjustments in the form of the reduced number of demand-tailored, trade and category-specific and industry-oriented trainees are a means of optimising current human and material investments in ITI training. The aim should, however, be one of maximising employment, wages, output and living levels. From that viewpoint it is the demand dimension that is crucial.

This monograph is the work of Dr. T. C. Mohan and Mr. C.L. Narasimhan who had the advice and support of the State Directorate of Employment and Training, the Employment Exchanges and the State Planning Commission to all of whom thanks are offered for their help and co-operation. Within the Institute, the monograph has profited from the statistical collaboration of some of the specialists. The responsibility for the analysis and the judgements set forth in the monograph is that of Dr. Mohan and Mr. Narasimhan.

I commend this study to the attention of the State authorities and employment specialists in the State and Country who should find in the analysis and recommendations some useful guidelines for action and further work.

CHAPTER 1
t
THE SURVEY REPORT : A SHORT SUMMARY AND PROJECT DESIGN

Comparing growth rates per capita in the State and Country, the first chapter in the monograph concludes that income trends were not satisfactory during the period under review as compared to those of other developing countries. For employment formation, the monograph has found that, while instruments for the control of supply lay in the hands of the State, demand was the aggregate of many autonomous decisions and as such outside of its direct influence. The chapter also traces the origin of the ITIs*, charged with the task of providing basic skills for the State's industrial development. Their number grew from 2 to 31 but craftsmen trained by them have not been able to find situations suited to their skills in adequate numbers during the last decade. In May 1964, 2,229 craftsmen passed out from these institutes against only 1,107 in 1961. The admission capacity of the 31 ITIs in the State as targeted for in the Fifth Plan was 13,112 per year. As against this, the output of the ITIs over the entire Fifth Five-Year Plan period is expected to be 38,560 yielding an annual turn-over, therefore, of 7,600 trainees. The 1,348 unemployed craftsmen registered with the Employment Exchanges as on June 30, 1964, was thought too small a figure to call for any action—a mere three per cent of all the 55,051 unemployed on the live registers of the Exchanges, but by 1971, the figure had increased to 15,677 and a reported 20,000 in 1975. Corrective action was also held back on the assumption that a surplus is better than a shortage. The factors leading to reduced

* ITIs: Industrial Training Institutes.

industrial activity between 1967—70 have also been enumerated in this chapter—some of the reasons or variables operating on the supply and others on the demand side. Some of the variables, especially those on the demand side, can be modified only over a period of years as they would call for varied action over a wide front by a host of agencies, official and non-official. Given the demand, it is through variation of supply and craftsmen mix that the State Government can tackle the problem of widespread unemployment among them. Other internal reforms in the ITIs with the same end in view are listed in paras 111.1 and 111.2 and renumbered in Chapter 10. Self-employment is mentioned for the first time as an innovative solution especially directed at ITI-trained craftsmen.

* * * *

In redesigning and extending the role of Employment Exchanges, the fact must be borne in mind that 309 respon dents, or 36.4 per cent of the total, secured brief spells of employment through their own efforts and only 7.4 per cent through Exchanges. Of course, this underscores the case for promoting the mediation of the *alma mater* which, under conditions peculiar to this country, are becoming growingly important agencies for the placement of technical personnel While the public sector has absorbed an increasing number of ITI craftsmen over the years, the Exchanges should specifically seek to increase the placements of ITI craftsmen in the private sector. In the modern Welfare State, the middleman and regulatory role of governments in promoting employment in the private sector can be a crucial one. In the section on Waiting for A Job, the worsening situation of employment for educated people has been further corroborated. In defining the employment status of a skilled candidate, the period of waiting between certification or graduation and his first engagement and the interregnum between the first and second situations and so on are vital measures. The Employment Exchanges have recently reported that the period of waiting based on the experience of all registrants (not just ITI craftsmen) is four years for a graduate and three years for a matriculate.

Whether it is an indication of an active preference on the part of employers for technical qualifications in disregard of general educational achievements,, it is difficult to tell; that the period of waiting is less for a matriculate than for a graduate (and so on down the line) is, however, significant. 37.5 per cent of the 849 respondents had to wait for one year for the first job, and 13.7 per cent for four years. 9 per cent had to wait for four years or more. Compared to the 15 month waiting for the first job, that a third of the ITI trainees had to wait for a year is serious and points to an absence of complementarity as between related policy elements in planning as also to serious deficiencies in man-power planning. The analysis based on the interval between jobs also revealed a marked preference on the part of em-ployers for work experience in aspirants for situations. The frictional unemployment of the latter kind traditionally dis-regarded as of not much moment could become important .and serious if it becomes extended.

» * * *

Chapter 3 on methodology outlines the objectives of the •survey and then of the monograph itself based on the former. It then explains the questionnaire which was filled through interviews with the 849 craftsmen chosen for the sample. The interviews took place mostly in the last quarter of 1973 and were conducted by the District Planning Officers of the State Planning Commission. The schedule data is assembled and analysed in Chapter 8. Both the macro-hypothesis of the study and the findings about each sector which were consi-dered its special attributes are set forth in chapters 4 to 8. Both demand and supply, macro as well as sectoral for ITI craftsmen were extracted from the schedule data as well as official sources (the sources are also enumerated) and tallied to arrive at conclusions which could lead to suitable action. Recommendations are made in the context of an argument in various chapters but are, for the sake of the readers' con-venience, re-enumerated in Chapter 9. The author, who pro-poses a special programme of self-employment projects for unemployed ITI craftsmen as his own innovative suggestion,

met officials in departments connected with this study; also employers in groups and individually. He also made a special case study of motor mechanics in Nandanam in Madras in order to verify his conclusions drawn from the sample as well as from a general view of this particular problem.

Chapter 4 has a brief para on the social returns of investment in skills formation and the relatively longer period of gestation in education. ITI training could be used to relieve supply bottle necks in a growing economy. The importance to man-power planning of ITI craftsmen getting jobs for which they are trained is touched upon in the context of unemployment among the educated which appears to be a feature peculiar to developing countries. This chapter asks the crucial question of the problem of over-supply according to perspective estimates exceeding contemporary levels of demand is not common both to the educated and the skilled job-seeker. An important element in the thesis of the monograph is that full or near-full employment for ITI craftsmen according to their skills depends ultimately upon critical rates of growth in industry both in the public and private sectors. The latter rates for the volume of industrial production in Tamil Nadu between 1950 and 1974 have been obtained from more than one source and a central agency, and a quantified correlation is hypothesized between the concomitant co-variants-industrial production and craftsmen employment. Allowance is also made for the fact that 71 per cent of craftsmen employment is accounted for by non-factory establishments. In passing, the conclusions of another survey conducted by the Department of Labour and Employment for the period 1964-67 are cited according to which 15,677 ITI-trained craftsmen had been unemployed. Even in 1967, the situation had deteriorated considerably. And then unemployment among ITI craftsmen doubled between 1964 and 1967. In 1967 employees foresaw no chances of a revival of industrial production and therefore of employment opportunities. In fact, the trend has not been reversed to this day. In short term, unemployment is the consequence of an excessive supply of craftsmen over the demand for their service. Extraneous support for the monograph thesis that generally, the country's investment in human resources tends to surge ahead of its arrangements for the production of material goods and services

js also **provided** by the peculiarly third-world phenomenon of the **brain**-drain. This hypothesis is borne out by variations in other parameters, such as enrolments in engineering colleges and polytechnics (fall in enrolment of nearly 34 per cent) between 1969-72. What was interpreted as a generalised decline in **demand** for all technical personnel **did** not evidently affect rates of admission to technical, arts and industrial schools. Either for **cross**-checking or for deducing demand for craftsmen from that for engineers, a working proportion between engineers engaged in production on the one hand and polytechnic-level technicians and craftsmen on the other is assumed. The computations based on direct demand are then checked with projections of the work force based on eight ILO occupational divisions in the economy. Assuming an eight per cent industrial growth between 1974-86, the Task Force on Human Resources and Social Change of the State Planning Commission had forecast near full-employment conditions for 1986. On the other hand, this monograph juxtaposes -supply increasing by 18,000 per year, with demand estimated at 12,000 persons in the above ways, to arrive at the conclusion that the shortage of employment opportunities seems irresistible in this sector.

Chapter 5

A table compares the output of ITIs over the period 1964-67, the number of craftsmen on the live registers of the Employment Exchanges in a given year and the number absorbed in jobs during the same year. Some trades had participated in the surging demand during 1965 while others did not. The growth rate of opportunities in some trades were governed by internal forces, ^uch as the supply of and demand for craftsmen in that trade. Others were determined by declining overall investment in industry during 1964-67 as well as the sectoral demand for their services and products. As a macro-economic cause, industrial activity was the lowest in 1967 and the highest during 1964. During the period in its entirety, however, contemporary demand for craftsmen was unable to cope with the supply. In 1967, it looked as if no amount of industrial revival in coming years could mop up the surplus of unemployed technicians. Discussing the relation between unemployment among ITI craftsmen and macro-unemployment, the monograph finds that the permissible levels of it

which could be taken care of through welfare action by the state had progressively increased in western societies whereas educated unemployment appeared to be a specifically third-world problem. The human problem of ITI craftsmen who had never held a situation amidst their waiting for ten years for a job is also touched upon; but this section like others deals less with human problems than with the unfeasibility in the present context of taking welfare action especially to ameliorate the lot of the unemployed- The monograph argues that the income criterion (or man-days of work supplied and demanded in the sector) should be an additional measure of employment to take into the reckoning the cases of those who obtain only short spells of employment or work only part time. In developed welfare economies, this is already being done to some extent in choosing the beneficiaries of welfare benefits and the quantum of transfer payments. The supply of ITI trained craftsmen in Tamil Nadu doubled between 1961-64. A survey by the Department of Labour and Training undertaken to assess the status of the unemployed ITI-trained craftsmen registered with the Employment Exchanges in Tamil Nadu during 1964 is briefly summarized. It sought to measure the imperfection of Exchange registration figures as an index of unemployment among a sample of 1259 craftsmen and found that (i) some registrants who had obtained jobs had not reported them to the Exchanges ; (ii) some were self-employed ; (iii) some were engaged in part-time work (43), and (iv) some (65) were working as apprentices (apprenticeship prolongs training and entry into the market). These figures had to be deducted from the overall figure for the unemployed. Although the survey claimed to be exploratory rather than exhaustive, it found that the rate of unemployment among craftsmen in 1964 was of the order of only 1.1 per cent. It declared ". . . . . the continuance of present technologies being assured, there need hardly be any fear of unemployment for craftsmen at all" *(p.13 A Survey of Passed out Trainees, etc.).* In the circumstances, it did not find any remedial action necessary. Although within the data-frame available for this study and the remedial measures being implemented by the Government and its agencies, it now appears difficult to confirm that the hopeful prospects visualised for ITI craftsmen by 1986, the monograph recommends re-adjustment of

supply °f trainees in individual trades without a reduction in the overall output. Both these remedies have been suggested in more than one chapter as occasion demands. In 1974, after the monograph had been largely completed, there were nearly 16,000 craftsmen registered with the Employment Exchanges. And these are being added to at the rate of 2,500 per year. An annual intake by manufacturing establishments of 9,000 trainees might just cope with current levels of supply and wipe out arrears in less than three years.

Chapter 6

A beginning in man-power planning in India made with the Five-Year Plan was frustrated by the marked decline in industrial output beginning with 1965. In the case of ITI-trained craftsmen, the impact of the slowing down of growth was felt most among fitters, welders, machinists, turners, blacksmiths, instrument mechanics, moulders, sheet-metal workers and grinders. Other chapters have made the point that the supply in these trades, how ever, continued at old levels without restrictions or variations of skill-mix. The ITIs should have fallen into step with changes induced by market preferences : internal checks on the tradewise efficiency of expenditure are necessary and the overall criterion for admission and course strength should be the contribution each category of craftsmen makes to the economy in terms of employability and increasing productivity. A certain measure of agreement, between the officials in the Government in charge of this programme and the author of this survey, was arrived at in the evaluation of the training courses in the course of personal meetings. It was felt that the practical work in these courses was not adequate for the purposes of job-level skill formations. Apprenticeship, on-the-job training and sandwich courses, it was agreed, could serve to upgrade and update training. Mandatory training provided under the Apprenticeship Act did not seem to secure employability-enhancing work-experience. If the evidence is admissible that apprentices were mis-used, then the law is bound sooner or later to make the employment of apprentices compul-sory even for the smaller firms which they cannot at present afford. Other deficiencies have also come to light. ITI-trained welders need further training before they can pull their weight in a modern fertiliser plant for instance. The authorities admit that

it is likely that the number ITIs are currently training may be excessive. By recommending both courses, the monograph is leaving the issue of numbers trained open: straightforward restrictions of admission strength and alternatively, the starting of new courses such as refrigeration, tractor mechanics, television servicing and repair and the re-distribution of applicants as between different trades according to a mix determined afresh from time to time. Because, while many trades have evidenced steadily declining demand, that for tool and die-makers for instance has been steadily increasing which lends support to the thesis of this monograph that the movement of sectoral demands and the overall demand do not always point in the same directions. The recommendations which were endorsed in the meeting with officials have been recounted in Chapter 10 and the recommendations are not repeated here. The chapter also discusses means of effectuating the recommendation about redistributing admission capacities and instituting new courses, such as those mentioned above.

Chapter 7

A fairly randmized sample of 849 craftsmen who were trained by ITIs and who were unemployed at the time of the survey towards the end of 1973 were chosen and they were asked to respond to a questionnaire (See Annex IV). The frequency of their distribution according to their trade and to the districts from which they hail is set forth in a table with a view to determining the disaggregated and special conditions of over-supply. That Tiruchirapalli has the highest number of unemployed at 3006 is surprising and difficult to square with empirical facts; this is probably because over-supply occurs where the demand is also the keenest. This finding puts a different complexion on the over-supply and it may now be possible to remedy the situation through redistribution. This explanation is borne out by the fact that Madras and Madurai occupy the second and third ranking according to the number of ITI unemployed. Tradewise the maximum number of unemployed are to be found among general fitters, welders, motor mechanics and turners. While disaggregating the sample of the ITI unemployed in terms of their domiciliary, cultural or sociological background, (urban/rural), it was found

tbat craftsmen of rural origin predominated among the unemployed in most trades except the following: blacksmithing, the trades of the electrician, the fitter, the motor mechanic, the draughtsman, the turner and sheet-metal worker, No simple but overall explanation would fit all trades. More motor mechanics are required in urban areas which is also where the over-supply occurs. While blacksmithing is a hoary village occupation, more ITI blacksmiths seek work in the urban areas with the result that more of them are unemployed there. The minimum educational qualification for the 16 integrated trade courses in the ITIs is the ninth standard while an initial pass from the tenth class is necessary for training as electricians, mechanics, draughtsmen or as tool and die-makers. Evidently more S.S.L.C.-holders applied for these courses and were given preference in admissions, in relation to others who had just the prescribed, qualifications for S.S.L.C.-holders preponderate both among the pass-outs and the unemployed. Positive evidence to establish a greater intensity of correlation between higher general qualification and greater employability is wanting although 611 out of the 849 unemployed in the sample were S.S.L.C.-holders. Here again, sectoral figures appear to be more significant than overall ones. Also such an assertion would be difficult to make in the face of the knowledge tha employers pick up unskilled hands and prefer to shape them to their requirements probably also because of the terms they are able to enforce. But, on the other hand, a great number of unemployed among the educated would be odd, wasteful and reflect adversely on selection procedures. The section on past and present employment status (before 1973 and end of 1973) of the respondents yields two conclusions; that at least 20 per cent of the registrants on the live lists do not report the fact of any new situations obtained to the Exchanges as against the many unemployed who must surely remain unregistered (not in the sample though). The latter fact deserves to be emphasized because it is not noted in departmental surveys referred to in this volume. This section reveals a serious increase in unemployment of nearly 24 per cent in one year, and the increase was marked among fitters, welders, motor mechanics, turners and wiremen, being particularly conspicuous only among the first two. In the section on the age-wise distribution of

the 849 unemployed in the sample, 564 are accounted for by the 18-25 age-group, forming an unemployment percentage of 66.4 per cent. This is partly a reflection of the frequency of the working age-group size-classes in the universe. India has more younger people than older ones unlike in many developed countries. This size-class also reflects intensively the dis-equilibrium between supply and demand caused by the initial impulse of a decline in demand beginning from 1967. It has thus been possible to test over-supply in some cases by more than one criterion. The duration of unemployment could in individual cases vary from one to five years. The monograph recommends both control in the supply of ITI output and augmentation and differentiation of course content. The unemployed in the 26-30 age-group make up 30 per cent of the sample. As it is likely that some of them have never held a situation since their certification, the monograph has recommended that their employment as a group be accorded high priority by the authorities concerned. It is the unemployed in the 31-40 age-group who constitute the smallest group. The monograph concludes that there is discernible a marked general preference in the culture of Tamil Nadu for older (and therefore more mature) people for vacant situations as a feature of the employment situation. The monograph accordingly notes the fact that ITI unemployed in the 31-40 age-group are particularly amenable to self-employment through special projects aimed at their rehabilitation.

That a very large number of trainees take up jobs quite unrelated to their training must be upsetting to the man-power planner. When ITI craftsmen or any other skilled personnel for that matter take up such jobs, the contribution they make total employment is fortuitous, indeterminate and unpredictable. Such situations may be treated as a reserve labour force in waiting which does not go wholly unrewarded. According to the *Quarterly Review of Employment in Tamil Nadu,* not even 5 per cent of the currently available ITI craftsmen or 1,500 persons could be absorbed by industry. During March-June 1974, 1,483 indents were made by employers, but placements did not exceed 846, but this was better than the 446 craftsmen found jobs in the previous quarter. In the quarter ended

September 1974, indents were higher at 1883, but placements at 659 actually represented an absolute decrease over the previous **quarter.** The prospect for the 70,000 unemployed craftsmen, the backlog, looked bleak indeed. The output of the 31 ITIs at a steady 7,800 per annum would add to the number and complicate any projected solution. In this context, the monograph is obliged to repeat the recommendation that constant adaptive research must be fed back into the curriculum content of the ITIs without making technologies that are taught in them unduly labour-saving. Why do not unemployed craftsmen avail themselves of credit and counselling facilities available to all self-employed entrepreneurs? Asked this question, most respondents said they had not bestowed any thought on taking recourse to this amenity which they did not treat cyn ically as an offer without substance. In the prevailing climate of sceptical opinion, this must itself be treated as progress. Only 55 of the total 849 unemployed had set up as small-scale practitioners of their respective crafts. That is to say, only 6 per cent of the respondents could be taken as self-employed. 501 of the 849 replied that they are aware of the credit facilities offered by term-lending institutions and the nationalised banks, while 304 had not even heard of them. All the 849 were specifically asked the question but only 18 were willing to invest between Rs. 1,000 and Rs. 5,000 or more. *A priori,* a good deal can be achieved by the integrated provision of information, motivation and re-training exercises, the organisation of credit and assistance facilities through a single agency, preferably a voluntary body. A special case study of three motor mechanics is appended at the end of the chapters and was undertaken as a cross-check on the responses obtained through the fuller question-naire to the larger sample, (vide Ch. 7, para III)

CHAPTER 2

INTRODUCTION

I. Tamil Nadu has, during the past decade or so, fulfilled many plan targets in agriculture, industry, trade, transport or services both in the public and private sectors of enterprise. An overall indicator of growth of the State economy over the decade from 1961 to 1970 may be found in the index numbers of the National and State incomes computed at 1960-1961 prices[1]. (All income figures in this study are based on the 1960.1961 prices unless otherwise stated.) From the relative rates of growth of the State and National Incomes, both gross product, as well as per capita figures, it is seen that Tamil Nadu's growth was greater than that of the country except for four years in respect of the total income and for one year in relation to per capita income. The State income grew at an average annual rate of 2.9 per cent as of 1969, while the country's income increased at an average rate of 3 per cent even if rather unevenly over the years. In both cases, in fact, the averages conceal wide variations for the individual years. Both these rates fell far below the average for all developing countries, which has been computed at 4.7 per cent[2]. Though the State's position was less favourable than the country's in respect of per capita income, the annual per capita growth rate for the State was 0.9 per cent as of 1969, while, for the country it was rather less at 0.6 per cent, though both were appreciably below that for all developing countries which was 2.2 per cent. Therefore, both for the State and the Country, income trends cannot be considered satisfactory.

i Problems of growth in Tarailnadu, 1970, Table II, p. 30 by Dr. M. S. Adiseshiah, Madras Development Seminar Series Vol. II, Number 1, January 1972.

a Ibid: Table II.

II. Among the policy instruments needed for attaining the desired growth rates for Tamil Nadu, the use of employment promotion like many others does not lie fully within the control and competence of the State, While the demand side of the employment market falls only to a limited extent within the decision-making frame of the State, the supply side, especially the supply of skilled man-power, is a policy instrument wholly within the State's competence.

II 1. Training institutions, official, as well as non-official, have endeavoured to discharge their responsibility of keeping up the supply of manpower trained in industrial skills at levels which balance or just exceed the minimum required to meet the disaggregated demand for skills originating within the State from the industry, construction, and transport sectors, Each year the numerous Industrial Training Institutes in the State turn out increasing numbers of craftsmen trained in different trades. If anything, the State Institutions have erred on the side of generosity in the matter of numbers. In the beginning man-power needs in an aspiring, developing economy loomed as an absolute. It did not then seem possible that they were a contingent need that could be limited by demand. They have been oversanguine in their estimate of the capacity of the State's industrial and other sectors to absorb the large annual outputs of trained craftsmen. There was a merry spree until recently of ever-increasing admissions to the ITIs and in the turn-out of accredited craftsmen from these institutes. For instance, during the second national Five Year Plan, the number of Industrial Training Institutes inTamil Nadu increased from six to ten. Since then their number has continued to rise rapidly. Meanwhile the expansion policy was so formulated that there were at least two ITIs per revenue district in the result that the present-day institutes total 31[1]. The number of trained craftsmen turned out by the ten institutes existing in May 1964 was 2,229 whereas, just three years prior to that date, the output of these institutes was only 1,107. Thus, within three years (between 1961 and 1964) that is the cumulated output of trained craftsmen had doubled, and

i The location of the number of sanctioned seats as at present is set forth in Annexes I and II at the end.

had registered an increase, more accurately, of 101.3 per cent. The present admission capacity of all the ITIs in the State works out to 13,112 per year on the basis of the figures for admission adopted in the tentative Fifth Five Year Plan for Tamil Nadu. The number of craftsmen who will pass out from all the ITIs in the State during the Fifth Plan has been estimated at 38,560; the annual output will therefore be around 7.600[1]. Prima facie, without anticipating the findings of any survey of the labour market for craftsmen in the State, it is clear that there has been an increase in training facilities which has not been based either on any estimate of the total demand in macro-economic terms or of sectoral demand for the individual trades[2].

III. As against this large and accelerated supply of trained craftsmen, the actual demand has lagged behind. It simply has not grown at the same pace. This state of alfairs has obtained for over a decade now, beginning roughly from 1964. Thus, for example, the Employment Exchanges reported that, on June 30, 1964, 1348 ITl-trained craftsmen were registered with them and were therefore unemployed. This small gap between demand and supply was then possibly considered as of no consequence if it was noticed at all and was indeed less than the minimum required to offset labour turn-over and attrition. For this number constituted only three per cent of the 55,051 persons employed in the non-agricultural trades during 1961-62. This early symptom of a lack of balance between supply and demand has aggravated over the years into a malady of serious proportions. On 31-12-72 the number of craftsmen, who had passed out from the ITIs in Tamil Nadu and figured on the live registers of the Employment Exchanges in the State, numbered 15,677. The number had increased by almost eleven times within about eight years from 1964 to 1972; for 1975, the corresponding number of unemployed craftsmen is reported to be around 20,000. A hazy and fond hope that things would set themselves to

1 Figures are based on the information furnished by the Directorate of Employment and Training, Madras.

2 The different trades in which craftsmen are trained by the ITIs is listed in Annexe I.

fights somehow in the future and a belie" that a surplus of craftsmen is better than a shortage seems to have provided the administration with an alibi for no corrective action. The obvious reasons for this large-scale unemployment among trained •craftsmen may be listed as follows:

(i) The rate of growth of industrial production has been less than anticipated since 1964 ;

(ii) The industrial recession that continued unabated between 1966 and 1969 took its toll and added to the number of the unemployed;

(iii) After 1970, industrial production tended to decline cumulatively due to shortages of indigenous raw materials like steel, iron and imported raw materials, such as oil, chemicals, non-ferrous metals and spares and components;

(iv) The shortage of electrical power in the country as a whole, and in Tamil Nadu in particular, caused closures and shut-downs of industrial establishments for varying durations. Fresh recruitment of craftsmen was discontinued, and the absorption- of trained craftsmen was slowed down and became discontinuous besides ;

(v) The absence of free mobility among unemployed craftsmen hindered their absorption in centres outside their native places;

(vi) A proportion of unemployment must surely be ascribed to the expectations of wages higher than market offers while, on the demand side, employers were disinclined to pay freshers without work experience according to their expectations ;

(vii) Excessive output of trained craftsmen from the ITIs in relation to the existing as well as expected demand for over a decade now.

III. 1. Among these, reasons 1 to 4 are variables on the demand side while 5 to 7 operate on the supply side. Unless all the relevant and important variables, both on the demand and supply sides, are controlled or modified, the problem of unemployment among these trained craftsmen cannot be

satisfactorily tackled in the immediate future. Some of the variables, especially those on demand side, can be modified only over a period of years as they would call for varied action over a wide front by a host of agencies, official and non-official. Thus the Industrial Policy Resolution may have to be liberalized to permit self - employed entrepreneurs to venture into fields reserved for other sectors or governmental agencies. Special imports may have to be continued through Small Industries Corporation or the STC, and regional offices of the Controller of Imports may have to be empowered to consider recommendations for allocations by agencies of the State Government for employment promotion among ITI unemployed or skilled technicians generally. Some method will have to be found of enlisting and legitimating state initiative in increasing outputs through the fuller utilization *pf* capacity; latterly, this has in some measure become the concern of the Union Government. The addition of fresh capacity is rather more expensive and protracted. This is a macro-economic problem in which the policies for the optimization of prices and profits of individual firms will have to be discussed at meetings called together under the aegis of chambers of commerce or of small entrepreneurs by the industry and the Labour and Training Departments of the State Government in which socially desirable outputs must be related to the prices of a plurality of producers at prices which must be reconciled to the needs of greater employment and with the country's anti-inflationary monetary and fiscal policies. The generation and supply of power is normally a state concern but in view of the countrywide energy shortages, and the proposal to set up super thermal power stations at large pit-heads, this supply constraint can only be relieved through joint action by the State and Central Governments. Some of the factors on the supply side are, however, amenable to direct action by the State Government, especially the regulation and planning of the output of trained craftsmen from the ITIs in the State from year to year so as to keep the supply attuned to demand, taking into consideration its extent and nature. Many State Governments have added counselling or consultancy cells to financial or industrial development institutions in order to enable small and self-employed entrepreneurs

to approach and overcome these problems *proforma,* methodically and to acquire self-reliance in innovative entrepreneurial skill.

III.2. Apart from the measures to promote industrial production through the identification and development of captive and free market demand and regulation of the output of the ITIs on the supply side in order in turn to reduce the gap between demand and supply, steps would need to be taken to improve the communication between the unemployed craftsmen and the prospective employers in the private sector which is now not under any obligation to recruit their craftsmen through the Employment Exchanges, and about whose requirements, the job-seekers have little knowledge except through the newspapers. The craftsmen belonging to rural households cannot easily avail themselves of opportunities for urban employment in the private sector as most of the establishments are located in cities, towns or townships. The mobility of the unemployed craftsmen should also be improved through suitable incentives. As for low initial wages offered to freshers (i.e., craftsmen without previous job experience) acting as a disincentive, this state of affairs could be remedied only by switching over to sandwich-type courses in the ITIs and modifying the occupational structure of industrial establishments. That is to say, they should accommodate a certain number of these trained craftsmen, which bears a certain negotiable proportion to the degree-holding and diploma-holding engineers in the employment of the establishment. The proportion will of course depend on the nature of the industry, some being more technology-intensive than others. It will also depend on the size of the firm whether elaborate in-training facilities would preclude the employment of outsiders with generalised, even ITI, qualifications. In conclusion, then, the generation of employment opportunities for ITI trainees should not, from the macro-view, be left to take its own course ; it should become an urgent matter of negotiation as between the institutes and the technical education authorities, employers and the Department of Labour and Employment on the basis of which the ITI curricula may need to be revised or even upgraded and the admission capacity of individual courses enlarged or restricted. This is what planning entails in terms of the individual sector.

IV. Finally, schemes for self-employment of a fair proportion of the ITI trainees should be thoughtfully framed so as to attract all those possessing a modicum of enterprise and initiative to start to work on their own account availing themselves of the liberal and encouraging facilities for finance, consultancy (specialised agencies or cells in existing institutions are bsing contemplated for this purpose) and marketing to be provided by the State financial institutions as well as the nationalised banks. This has been argued in greater detail in chapter 9. Special attention would be necessary for self-employment in the case of extremely youthful, and often not very mature trainees without any work-experience before they can fend for themselves as entrepreneurs. Thought should be given to the desirability of setting up group organisations or associations of unemployed craftsmen so that the State Government or employer's organisations could help them on an organised basis. State aid is usually more forthcoming for registered associations rather than to individuals.

CHAPTER 3

THE METHODOLOGY OF THE STUDY

I. Objectives: The objectives of this study are :

(i) To find the reasons for the widespread unemployment prevailing among trained craftsmen who have passed out of the Industrial Training Institutes in the State of Tamil Nadu.

(ii) To suggest remedial measures for the substantial reduction of levels of unemployment if the causes can be precisely identified.

I.1. On the basis of the findings therein a set of recommendations have been appended to this volume (Chapter 9). They can form basis of suitable policies in the spheres of technical training, industrial growth, and the organisation and financing of self-employment schemes for these craftsmen.

II. The Statistical Frame : The data required for this State-wide study was collected through random sampling of the population of unemployed ex-trainees of the Industrial Training Institutes. About 10 per cent of the population of the unemployed made up approximately of 10,000 craftsmen was selected at random from the district lists. Care was taken to give due representation both to rural and urban areas. The lists of unemployed include craftsmen registered in the Employment Exchanges in all the fourteen districts including those in Madras city. The lists contain the permanent residential addresses of the respondents so that their background, whether rural or urban, could be identified readily. The sample of 10 per cent was considered sufficiently representative of the universe.

II. 1. A comprehensive schedule (see Annexe IV) was designed,

in which questions were asked (in English/Tamil) to find out the reasons for unemployment as the unemployed saw them ; the duration of unemployment; their willingness to take up jobs in centres other than their places of residence, inparticular their awareness of opportunities for self-employment, such as loan facilities from the Directorate of Employment and Training and the nationalised banks; their willingness and ability to avail themselves of these; and their problems in doing so.

11.2. In order that the answers to the questions contained in the schedule could be properly obtained and recorded, the candidates in the sample list of each district were personally interviewed by the District Planning Officer who explained the questions to the interviewees and elicited the answers.

11.3. The number of filled in schedules received back was 849, and these were checked for discrepancies and omissions if any. The answers were then coded and tabulated so that meaningful sub-tables could be extracted from them. These sub-tables were so organised as to reveal the inter-relationships between unemployment and the different variables like rural/ urban background, the nature of the trade, willingness on the part of interviewees to move out to new places of work, their readiness to take up self-employment and/or to set up as small entrepreneurs with financial assistance from the government or banks. (In the main these data from the schedules are assembled in ch. 8.)

III. The Hypothesis and the schedule : On the basis of theory, obeservation and reflection, this study hypothesizes a correlation between overall industrial growth on the one hand and the trend of employment of craftsmen on the other. This hypothesis is sought to be established on the strength of the primary data for unemployed collected through the sample as well as published secondary data appertaining to industrial growth in the country as well as the State. Extensive use has been made of statistics published by the Directorate of Employment and Training, in particular *Tamil Nadu: An Economic Appraisal, Report of the Tamil Nadu Planning Commission Task Force, Human Resources and Social Change for Economic Development 1972-1984: the plan Documents of the State Planning Commission and the Basic Statistics*

Relating to *the Indian Economy published Ly the Commerce Research Bureau* and a few official reports. It is necessary to add here that this macro-correlation between overall industrial **growth** and employment is deemed to subsist with the sectoral imbalances in each trade and other features peculiar to it **which** hinder the growth of employment opportunities or advantage being taken of them by qualified trainees. This macro-correlation is considered in chapters 4, 5 and 6.

IV. The Supply and Demand Functions: In addition to establishing the correlation, this study has sought to investigate and identify the other factors contributing to the growth in the numbers of the unemployed among the trained craftsmen. The increase in the numbers has been computed separately. On the supply side, the annual enrolment of persons in the ITIs in the -State as well as their distribution as between the trades have been worked out and analysed. These have been checked with the number of craftsmen on the live registers of the Employment Exchanges.

IV. l". On the demand side, the number of vacancies notified by factory establishments in the State during recent years was calculated as also the proportion of employed craftsmen to the total number of all employed persons in all categories in the industrial sector, both public and private. The growth in demand that might be expected in the near future was also taken into account both as a continuation of existing trends and the probable generation of fresh opportunities for new employment among craftsmen.

IV. 2. A comparison has been made between the present trends in supply and demand for craftsmen highlighting the gap between them, or, in other words, the extent of the imbalance between supply and demand.

V. Remedial Measures: In suggesting remedial measures, the possibilities for devising suitable self-employment programmes was explored. Such studies related to the availability of institutional finance and/or State aid, the allowances payable to the •craftsmen during the gestation period of the project as part of costs and before it begins to yield returns. The investigation also

concerned itself with factors retarding the viability of these projects. In order to draw purposive, action-oriented conclusions, a case study of a few unemployed motor mechanics in the city was carried out.

V.1. It was also found necessary, in order to round off the study, to meet and have personal discussions with various officers and employers connected with the training and employment of craftsmen to evaluate the situation before the responses were coded.

V.2. In particular, the facilities and opportunities and assistance provided to craftsmen for self-employment were analysed for effectiveness in the experience of the concerned financial and training institutions, such as the SIDCO, TIDCO, TIIC, Smalt Industries Service Institute, Small Industries Service Corporation, and the nationalised banks.

CHAPTER 4

UNEMPLOYED AMONG THE EDUCATED AND TECHNICALLY TRAINED

I. It is but natural that the educated or technically trained youth should look forward to gainful employment which is an important purpose and benefit of junior college or technical school level of education and/or training. Admittedly this is an expectation fostered by tradition and social mores but can in economic terms only be vindicated by such factors as increased productivity, amenability to further in-training and occupational and geographical mobility. In recent times, great importance has come to be attached to the productivity of labour; to increments in it that can be encompassed through formal education or in-training ; and hence to the imparting of education and skills to youth. The building of a reservoir of educated and trained labour as a necessary element in the supply or the droduction function without regard to the immediate demand conditions in the market place has become a part of economic and social policy of all governments, whether capitalist, communist, or socialist. Investment in human resources may be more thorough-going in some, but they all entail waiting and gestation. It is, however, an enduring asset. ^'Education is a long- lived asset, in that an educated man presumably contributes more on account of his education, not just one year after his graduation, but for much of the rest of his life. If a country doubled its expenditure on education in year *t.* the positive economic effects ought not to be looked for in year *fs* GNP figures (which actually will be lower because students

i W.G. Bowen; "Assessing the Economic Contribution of Education", p. 18 *Education, Structure and Society*; ed. B.R. Cosin; 1972 Open University Press; Pelican.

who would have otherwise worked are now in school), but in the figures for all the years from, say, *t+4'* on." In fact, the growth of the national product accruing from a country's industrial sector depends on the increase in the input of raw materials as well as on increasing inputs of human skills of various kinds. The mix is mediated by *Praxis* and *teclme,* altering and reducing rates of inputs favourably in relation to output. To go one step further, even when the input of raw materials or intermediate goods cannot be increased, the use of improved and better human skills in production could compensate for the shortages of the former through increased productivity per man-hour. This substitutability which cannot be realized beyond a point is measured by the spectacular growth of import substitution on projects that has been achieved in the State as well as in the country at large. These often reproduce techniques of production from developed countries with or without adaptation; equally often, they retain the labour-intensive technologies of an earlier era.

At the next stage, when these protected industries produce the new goods at internationally competitive prices, the cutting of costs would come from the qualitative improvement of the human resource input. This is a minimum but irrefutable case for training and education in a developing country from which a modicum of social returns could be hoped for.

1.1. ITI skills can thus relieve supply bottlenecks selectively in a growing economy. Gradually increasing productivity is a result of lifelong education of which in-training is the most important constituent in terms of value. For this to take place, however, it is important that a sizeable number of the ITI trained should get jobs which engage their special skills. When technologically trained people in particular take up jobs which do not make calls on their special equipment, (as happens often in both developing and developed countries or for short spells in individual careers) the cause of employment might be served but man-power planning would surely become more difficult.

1.2. The problem of the Educated Unemployed in the Third World: In many developing countries of the world, unemployment and under-employment have^been witnessed even among the educa-

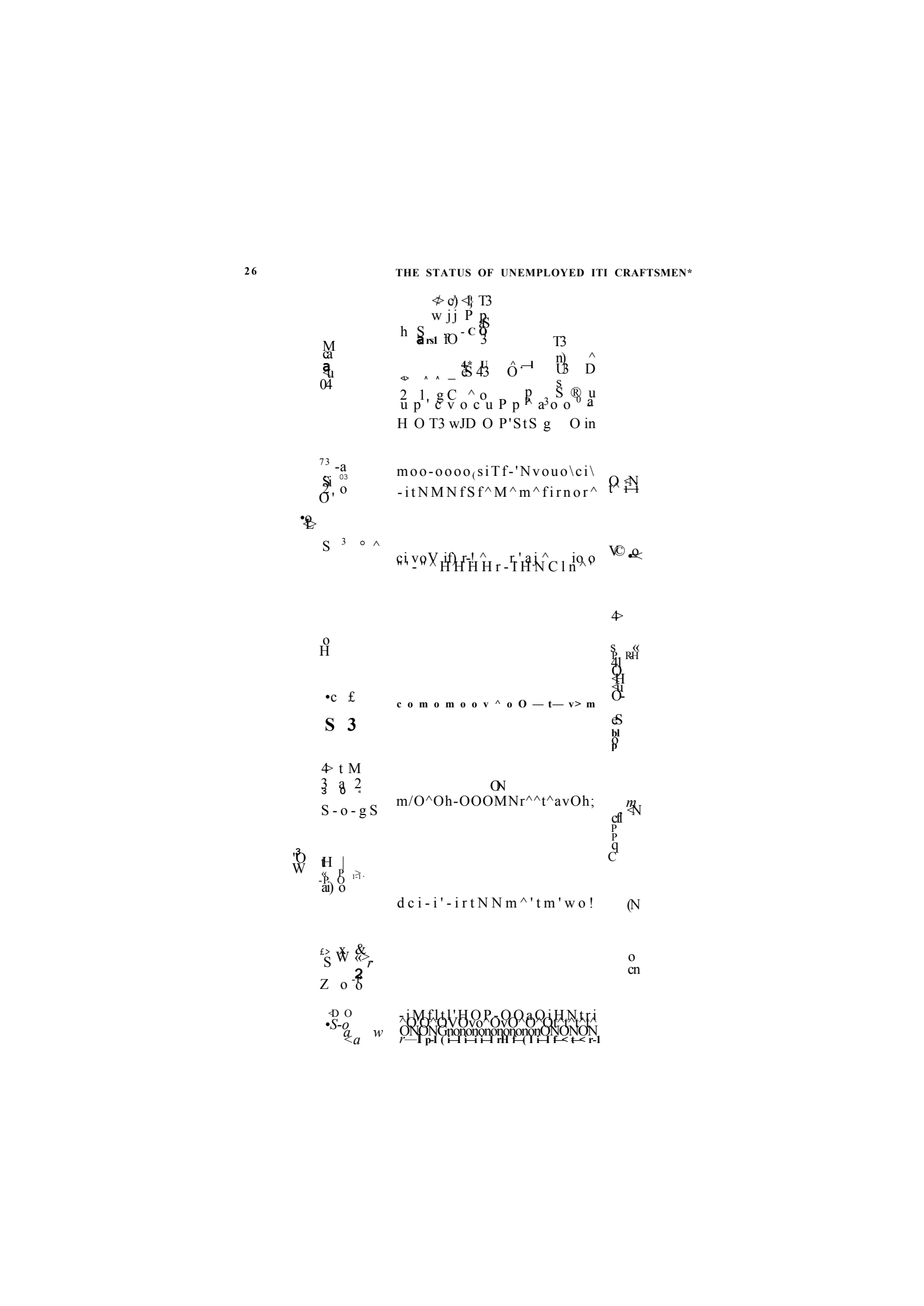
ted and trained. The State even in the developing economies does not neglect the doctoring of business expectations and stock market sentiment, but in a planned economy, these are not overly important. But India's contribution to what is distinctively the problem of the educated among the unemployed must be original and massive. Unemployed ITI trainees are an important sub-category among the educated and skilled unemployed. This is much more so in India as the proportion of unemployed labour here is probably much higher than the 3, or 6-10 per cent of the total work force which has come to be considered as permissible and which normally prevails in the western countries. This is only partly due to the rate of growth of educated persons turned out by schools, colleges and training institutions being in excess of the rate of growth in jobs in the public and private sectors. This seems to be true of most sectors

TABLE 4.1.—Educated Unemployed in Tamil Nadu
Educated Job-seekers Registered with Employment Exchanges in Tamil Nadu, 1961-71

(In thousands)

Year	Degree-holders	Matrics	Total Educated	Others
(>)	(ii)	(iii)	(iv)a	(iv)b
1961	3.0	36.0	39.0	
1962	2.1	40.8	42.9	
1963	2.7	38.5	41.2	
1964	2.3	43.2	45,5	
1965	2.8	51.7	54.5	
1966	4.4	56.4	60.8	
1967	6.6	70.9	77.5	
1968	9.5	96.1	105.6	171.3
1969	13.8	98.9	112.7	242.2
1970	21.8	144.0	165.8	235.7
1971	27.6	153.4	181.0	279.7

Source : Report of The Task Force, *Human Resources and Social Change for Economic Development,* Vol.1 Plan Document No.13; State Planning Commission, January, 1973, p. 12.



excepting the highly sophisticated manufacturing industries, professions and skills, not to speak for the moment of residual occupations, such as agriculture or unskilled occupations, such as construction and road-making. In other words, the rate of growth of demand for educated persons has not kept pace with the supply of such persons. We may however view this situation as a case of insufficient demand rather than as an excess of supply. But as planning grows apace and man-power research is able to impute realistic values to individual skills, we should have a criterion for estimating the output of skilled craftsmen from ITIs and from other sources.

TABLE 4.3.—Growth of employment opportunities in public and private sectors: 1961-1973

(as percentage)[1]

As on—March end	Percentage Share in Total Employment		Percentage Increase		
	Public Sector	Private Sector	Public Sector	Private Sector	Total
(1)	(2)	(3)	(4)	(5)	(6)
1961	58	42	...	...	...
1962	59	41	5.2	2.4	4.0
1963	59	41	7.2	5.6	6.6
1964	59	41	6.3	6.1	6.2
1965	60	40	5.9	4.5	5.4
(Data above are not comparable with those which follow)					
1966	58	42		...	...
1967	59	41	2.7	1.9	0.8
1968	60	40	1.7	2.4	0.1
1969	61	39	3.0	...	1.8
1970	61	39	2.8	2.6	2.7
1971	61	39	3.4	0.7	2.3
1972	62	38	4.5	0.4	2.9
1973	62	38	6.0	2.6	4.7
1973 (September)	65	35	6.0	2.7	2.7

Annual rate of percentage increase between :
1961 and 1965 = 6.2, 4.7, 5.5
1966 and 1973 = 2.5, 0.2, 2.2

Source: 1. Directorate General of Employment and Training, Ministry of Labour and Rehabilitation ; *Employment Review,* various issues and the *Quarterly Employment Review* (mimeographed); July - September, 1973.

2. Government of India, *Economic Survey,* 1972-73, February 1973, training programmes.

What is important is to realize that, with the rapid annual growth of population and a rapid if not comparable growth in the number of educated persons turned out annually, no feasible openings for ITI trainees can be foreseen as of today. Future supplies of educated persons that have been planned for cannot be met by the existing growth rate of technical graduates and trainees, and backlog of the unemployed continues to loom menacingly in the background. Table 4.1. gives an idea of the unemployment position among the educated in Tamil Nadu as at the end of 1971.

II. Potential for skilled employment in Industry: This study will focus attention on the employment situation and the employment potential in the organised sector of industry which, as at present defined, covers all the manufacturing enterprises in the public sector and only those non-agricultural establishments in the private sector that employ 10 or more workers. Table 4.3 shows the percentage change in the growth of employment in the organized establishments of the private and public sectors. It is assumed that job opportunities in the organized private and public sectors together is equal to 100.

11.1. These figures relating to the rate of growth of employment in the organized sector (which, for all practical purposes, is coterminous with the modern sector) may be taken as a structural indicator of the rate of skill diversification and modernization of the economy on the one hand and the rate of creation of opportunities on the other.

11.2. For the purposes of the evaluation attempted in this

study, the effect of the rate of growth in the organised sector of Indian industry, on the rate of growth of employment in that sector (it is the most related and relevant sector for technically trained man-power, especially craftsmen trained in the industrial training institutes) is significant. We may note here the criterion of a satisfactory growth rate of the organised or modern sector. It is from some such criterion that the growth of the organised sector necessary for generating full employment opportunities among the skilled craftsmen must be computed. It is assumed by employment analysts that; in order to achieve any satisfactory rate of modernisation and job creation in the non-traditional sector, the employment in the organised sector should be increasing at the rate of 15 to 20 per cent per annum. The report of the State Planning Commission assumed an eight per cent growth rate for manufacturing industry compounded of natural and induced rates as necessary for full employment to be achieved by 1984. From the figures in Table 4.3, however, the actual rate of increase of employment achieved in the organised or modern sector works out to less than 3.5 per cent per annum.

11.3. The rate of industrial growth which was 5.5 per cent per annum in the early sixties had declined to a mere 2.2 per cent during following years which, incidentally, just equals the demographic growth rate in India of about 2.2 per cent over the same period. Hence stagnation had set in in the employment market beginning from 1966, with the exception, however, of 1973, during which year this growth rate was particularly encouraging.

11.4. A related but significant fact which emerges from the Table 4.3 is that the performance of the public sector in job creation has been distinctly better than that of the private sector.

II.5 This study seeks to argue that there exists a correlation between industrial growth and the steady access of utilized capacity as a proportion of installed capacity in these industries on the one hand and of technically trained personnel on the other. It would be instructive to look over the indices of industrial production in the country so as to verify this postulated correlation as in Table 4.4.

TABLE 4,4.-All India Index of Industrial Production 1950-73
(Large and Medium Industries only).

(base: 1960 = 100)

Year	All Industries		Engineering Industries	
	Index	% Increase	Index	% Increase
1950	49.1			
1951	54.8	11.6	30.2	–
1952	57.2	4.4	32.2	6-6
1953	58.1	1.6	32.6	1.2
1954	63.4	9.1	45.6	39.9
1955	72.7	14.7	65.1	42.8
1956	78.4	7.8	72.7	11.7
1957	82.7	5.5	77.1	6.1
1958	84.4	2.1	76.7	0.5
1959	90.3	7.0	84.3	9.9
1960	100.0	10.7	100.0	18.6
1961	109.1	9.1	116.6	16.6
1962	119.7	9.7	141.8	21.6
1963	129.6	8.3	161,5	13.9
1964	140.8	8.6	182.9	13.3
1965	153.8	9.2	213.4	16.7
1966	152.6	0.8	199.7	6.4
1967	151.4	0.8	193.0	3.4
1968	161.1	6.4	205.3	6.4
1969	17'.5	7.1	219.1	6.7
1470	180 5	4.6	225.8	3.1
1971	186.1	3.1	232.3	2.9
1972	199.1	7.0	244.1	5.1
1973 (January-October)	199.6	0.3	258.7	6.0

Year of reference	Average annual increase between (as percentage)	Percentage change with 1951 as base
1950 & 1965	7.9	150
1965 & 1973	3.3	2.4
1950 & 1973	6.3	10.3

Source : Central Statistical Organisation : C.S.O. *Monthly Statistics of Production of Selected Industries of India Monthly Bulletin Showing Production of Selected Industries of India; and Index of Industrial Production,* several issues.

11.6- Though the above data on industrial production relate only to large and medium industries, these may be taken as broadly indicative of what is happening in the country's industrial sector as a whole. No reliable production data are being collected by the Government on an annual basis on the performance of the small industries.

11.7. Between 1950 and 1965, it is seen that the average annual growth rate of industrial production worked out to 8 per cent. During 1965-73 it dropped sharply to 3.3 per cent which is only about a third of the Fourth Plan target figure of about 9 per cent per annum. It is known that, from February 1972 to October 1974, the index of industrial production was more or less stagnant. This decline in the rate of growth of industrial production and employment as reflected in Tables 4.3 and 4.4, especially from1966 to 1973, suggests an undeniable relation between the downward trends in production and those in employment. The two are sympathetic and therefore may certainly be taken as concomitant co-variants. Decline in production which is undeniably seen here as a central tendency must then have an inevitable consequence on the employment of technically trained man-power at all levels - frome ngineers down to craftsmen. Hence widespread unemployment among craftsmen, for whom the industrial sector is the primary) and perhaps the only, source of employment, and the growth in the numbers of their unemployed.

11.8. If we take into account the rate of substitution as between the different categories of technical men normally required for manning production, viz., how many ITI trained •craftsme n for one polytechnic-trained technician and the number of technicians found equivalent to a degree-holding engineer, we can broadly work out the firm's or the economy's requirement of craftsmen. This conceptual conversion is necessary even though it may not be practicable in individual cases because the demand for engineers and polytechnic-trained

TABLE 4.5.—Pattern of Factory Employment All India: 1961 & 1971.

State	(1) Working Factories 1961 (number)	1971 (number)	Percentage Increase in 1971 over 1961	(2) Average daily Employment 1961 (thousands of workers)	1971 (thousands of workers)	Percentage Increase in 1971 over 1961	(3) Average Daily Employment as percentage of Total Working Force in 1971	(4) Workers Employed in Manufacturing Industries Percentage to Total Workers	RiKk (as by col. 3 g)
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
West Bengal	4,333	5,633	30	739	840	14	**6.8**	14.1	2
Maharashtra	8,308	9,888	19	827	1,003	**21**	5.5	13.1	4
Gujarat	3,841	5,819	51	361	445	23	5.3	12.0	5
Haryana		*1,459*			94		3.5	10.0	9
Kerala	2,468	3,049	24	172	207	**20**	3.3	15.8	1
Tamil Nadu	5,626	5,848	4	330	447	35	3.0	13.3	3
Punjab	3,510	4,561		132	119		3.0	11.3	6
Karnataka	2,311	3,663	59	178	227	56	2.7	10.2	8
Assam	1,250	1,434	15	80	77	-4	**1.8**	4.0	17
Bihar	6,058	16,508	172	192	279	45	1.6	5.1	16
Uttar Pradesh	2,837	3,955	39	338	419	24	1.5	7.3	11
Andhra Pradesh	4,984	7,695	54	**228**	267	17	1.5	9.0	10
Madhya Pradesh	1,947	3,332	71	169	**222**	31	1.5	*6.6*	*13*
Rajasthan	915	1,869	104	57	85	49	1.1	6.6	14
Orissa	494	938	90	38	71	87	1.0	5.9	15
Himachal Pradesh	27	169	526	2	11	450	0.9	3.9	18
Jammu & Kashmir	....	213	...	...	11	...	0.8	6.8	12
Manipur	34	305	503	...	2	...	0.5	11.0	7
Tripura	57	66	16	2	2	...	0.5	3.5	19
All-India (includes figures for Union Territories)	50,095	78,548	57	3,919	5,004	28	2.8	9.4	

Source : Ministry of Labour and Rehabilitation, *Indian Labour Statistics,* February 1973.

TABLE 4.6.—Index Numbers of Industrial Production

Industry Code Number	Weight	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Tamil Nadu													
General Index	100.0	110.4	117.2	123.4	134.2	148.6	148.1	158.3	163.3	172.8	182.5	183.9	192.5
GeneraHndex	100.0	109.2	119.7	129.6	140.8	153.8	152.6	151.4	161.1	172.5	180.8	186.2	198.0

Note:—During 1971 and 1972, the State's index of industrial production has been 183.9 and 192.5 while the corresponding All-India indices were 186.2 and 198.1 respectively. The increase in the State's industrial production in 1972 over that of 1971 was only 8.6 whereas, for All India, it was considerably higher at 11.9.

technicians are more readily available than those for craftsmen. The number of these categories employed in particular industries is given. But as industrywise figures for these categories are not available, resort must be had to an alternative —that is, the demand figures for these personnel as contained in the market information cell of the Directorate of Employment and Training of the Tamil Nadu Government. This indicates the decline in demand which indirectly measures the resulting increase in the unemployed.

11.9. The data pertaining to the pattern of factory employment in Tamil Nadu vis-a-vis the figure for the whole of India affords us an idea of the situation in the State relative to that in the country as a whole.

11.10. Data given in column 3g of Table 4.8 may be generally taken as an index of industrialization with the qualification that these data cover only factory employment which, for the country as a whole, accounts for only 29 per cent of all the employment in manufacturing. The other 71 per cent of the employment is provided by non-factory establishments. If column 3h is also taken into account, the picture of the degree of industrialisation as built up from column 3g changes substantially. Thus, for example, Kerala which ranks fifth in column 3g tops the list in column 3h.

11.11. A broad but significant conclusion emerges from Table 4.5. The position of Tamil Nadu vis-a-vis the other States appears to have become unfavourable in the matter of the growth of the number of working factories. Whereas the percentage increase in the number of working factories for India as a whole (including States and Union Territories) between 1961 and 1971 was 57, (as shown in column 3), the percentage increase reported for Tamil Nadu is only 4; the low figure indicates a slackening in industrial growth during the decade ending 1971.

11.12. This trend is corroborated by the index numbers of industrial production for India as a whole and those for the State of Tamil Nadu. Comparing all-India figures with those

for tbe State of Tamil Nadu for 1973[1]. it appears that industrial production in Tamil Nadu, which had somewhat lagged behind from 1962 to 1966, pressed forward between 1967 and 1970, but again fell back during 1971 and 1972—the latest years for which figures are available. This may be seen from fable 4.6.

Causes for Unemployment: Market Imbalances

It was reported that, as on December 31, 1972 there were 15,677 craftsmen in Tamil Nadu, who had passed out from these Institutes and had registered themselves with employment exchanges in the State[2]. This figure represented the cumulated sum of trainees who had remained unabsorbed in suitable situations over a decade or so starting from the early 1960s and who are referred to as the backlog of the unemployed. That is to say, it is not as though this huge and distressing total of 15,677 was arrived at all of a sudden. For example, a quick study on the utilization of trained craftsmen in Madras State for the four years from 1964 ending with 1967, carried out by the Department of Employment and Training, has revealed that, even by 1967, the unemployment situation had, among this class of skilled persons, become unsatisfactory and that the number of trained craftsmen (all craftsmen including ITI trainees) on the live registers of the Employment Exchanges in the State had practically doubled from 39.4 per cent in 1964 to 75.3 percent in 1967—the percentage measuring the proportion of these craftsmen who were still unemployed to all others registered with the Exchanges during 1964-67.

III. i. From the data provided by the Principals of the Industrial Training Institutes[3] it had been found many years ago that, for all the trades taken together, the rate of utilisation had begun to taper off. For instance, this tendency was in evidence between 1964 and 1967. The rate of utilisation had actually decreased from 45.9 in 1964 to 15.4 per cent in 1967. The year 1967 had been pin-pointed as the least favourable, each

1 Tamil Nadu Economic Appraisal Part II, 1973 ; Statistical Tables No. 42.

2 Schemes for starting Domestic Repairs and Service Centres : Department of Employment and Training, Chepauk, Madras-5.

s *Vide* Tabic V and Annexe VI.

one of the trades having lost ground year after year beginning from 1964-67 in order to reach anew low. The inference therefore that the period 1964-67 was cumulatively unfavourable for all skilled and semi-skilled employment is well supported. It is likely that the decline in total demand which had set in some time i_n 1966 continued till 1973 though demand did begin to look up in such individual years as 1968 judged by increases in the indices of production for all industries as well as for the engineering industries in particular as shown in Table 4.4. Employers in the State foresaw the trend and had declared in 1967 that economic conditions being what they were, there was no likelihood of any significant increases in industrial production for two years from then and that the employment market for engineering skills was accordingly bound to be sluggish. In the event, the employers were right and they had shown keen foresight, as subsequent figures for industrial production were to show. But the difference was that this lull continued beyond 1967. The situation had intensified in 1971 so much so that slackening of the demand for craftsmen in the employ, ment market has not abated to this day. These figures do not of course casually explain the low rate of absorption of craftsmen in industries resulting in serious sectoral unemployment, but they do illustrate an otherwise rather obvious conclusion effectively. The slack in demand must first be explained if any remedial action is to be successful and if the ITIs are to become reservoirs of skill on which the industrialist could draw with assurance so that the flows of supply and demand could be equalized.

III.2. Idle Industrial Capacity : As long as the problem of low utilization and underutilization of capacity in a majority of Indian industries continues, the low rate of utilization of skilled craftsmen in industry is bound to persist. Simultaneous efforts should be made by the State Department of Employment and Training to analyse the placement of ITI trainees in new industries and their job requirements, and attempts should be concurrently and constantly made to differentiate the content of ITI training in consultation with employers. Minutes of these meetings with employers should be publicized in the first instance for the benefit of the State Assembly, the job-seekers and the general public. This is no

jjjore than is being sought to be done at present and flows [[0m the public accountability function of Government Departments.

111.3. In the short term, unemployment is the resultant of an imbalance between demand for, and supply of manpower. In this sense, the prevailing unemployment among the technically trained persons in Tamil Nadu can be shown to be the consequence Of an excessive and over-weighted supply of the services of craftsmen during recent years. For instance, the number of would-be engineers in colleges steadily grew, over the years, from 4,818 in 1960-61 to 11,025 in 1972-73 though there was a reduction in enrolment between the financial years 1969-70 and 1971-72. Similarly, the number studying in polytechnics increased from 6,937 in 1960-61 to 12,633 in 1968-69. It declined thereafter but the aggregate remained almost stagnant during 1971-73 at a little less than 8,000. As far as the technical, arts and industrial schools in the State were concerned, the number of trainees, which was 5,542 in 1960-61 showed a consistent tendency to rise, but for a brief levelling off during the two financial years, between 1968 and 1970 the growth in enrolment has been of the order of 7.5 to 8 per cent *per annum.* The intake in engineering colleges was pruned in the more recent past, and the supply was adjusted downward in relation to the projected demand so that the problem of unemployment among engineering graduates did not assume disconcerting proportions. The enrolment in polytechnics too has now been pegged at a low level. Their intake has been pushed down even further than in engineering colleges over the last few years beginning from 1969-70, the difference being of the order of about 3,000. But the number of admissions to the technical, arts and industrial schools over the years 1970-71, 1971-72 and 1972-73 was twice the enrolments in polytechnics and there was at least one course in which the enrolment was one-and-a-half times the admissions to a comparable course in the engineering colleges.

111.4. It seems logical that the number of craftsmen who will eventually walk the shop-floor as skilled foremen should exceed the number of technicians as well as the engineers who come to occupy supervisory and managerial positions in

production units. A working ratio between these two levels of skilled requirements should of course be kept in view by policy-makers ; but the question arises here whether the number of trainees at the craftsman level, viz., those trained in the industrial and technical schools, should be indefinitely expanded from year to year in the face of lack of demand for their services. The question has not been considered seriously so far, and certainly, no serious attempt has been made to stem the rot.

IV. Demand for Craftsmen Based on Projections of Occupational Distribution, 1972-84 : It may be useful here to refer to demand trends in the recent past as reported in *Market Information,*[1] issued by the Director of Employment and Training in Tamil Nadu, as well as the projected future demand for these personnel which the State Planning Cornmission of Tamil Nadu has assumed. Growth rates are assumed by planners (and in perspective planning cells, necessary rather than feasible rates) and it is left to decentralized decision taking to effectuate these rates[2]. To blame all this crisis on Labour and Planning Departments would be to endorse the

i *Employment Market Information ;* Occupational Enquiries, Madras.

a The bigger firms certainly do not live from day to day. They estimate demand from time to time and plan as far ahead as is safe to do so consistently with marginal adjustments made in annual operations. This is certainly necessary where a firm diversifies or embarks on new lines of production or decentralizes the location of new units subserving the needs of the market as well as those of official policy. Given the assurance of official planning and stable levels of Government consumption and investment, one would expect even smaller firms to plan their outputs over periods which are at least as extended as the Five Year Plans, so that each industry could work out its place in the official plans, its share of disposable household or individual expenditure over a few years in the market areas and among the size-classes. There are of course many problems specially bearing on the prognostication of demand. Producers begin to sense a recession even when planned for growth rates are under-realised. They are worried when, in perspective plan terms, scarcities continue, targets of utilization remain unachieved and in the short term unsold stocks accumulate. A perspective plan of the demand for technicians based on attrition and turn-over in old industries and based on the demand of new ones should be worked out, and this might well show that the State is not producing enough technicians either in given sectors or in the aggregate and in the proportions required (the last

(Continued on page 39)

demand for paternalism which has been commented on as a widespread attitude in developing countries both among governments and in the governed. Employers should sit down and think out a training policy well ahead of actual recruitment and communicate their job specifications and preferences to the ITIs and the Technical Education Directorate. The association of employers in professional industrial training was recommended by the. National Committee of Science and Technology, the Union Planning Commission and in the report of the Task Force on Education, Science and Technology, of the Tamil Nadu State Planning Commission.

IV. 1. A word of caution should be sounded about projections arrived at in the report of the Task Force on Human Resources. For that matter, the foregoing remark will apply to some of the conclusions in this monograph. Eight occupational classifications have been outlined which are even more detailed then the ILO classification in use (ibid, P. 245). A natural growth rate is worked out for each sector based on the increased number of adults in projected population growth and assuming that the labour force would obtain jobs at the same rates as in previous years. (97 per cent for all males in the employment market and 60 per cent for females.) (a) This is then added to the growth rate in the number ofjobs induced by sectoral activities programmed for in the Fifth and Sixth Plans; (b) is worked out sectorally while (a) is an undifferentiated projection for the labour force as a whole. Intersectoral growth rates range so widely that the aggregated rate for manufacturing industry as a whole appears to be of little practical value. Even in a compact category like ITI crafts-

(Continued from page 38)

of these is all but certainly bound to be true). Yet there is this discouraging spectacle of "educated unemployment" in the interim which appears to beunique to developing countries. While the sheer passage of time may serve to reconcile supply and demand, it does not mean that either official or employer policies to correct short-term discrepancies, particularly of the kind envisaged in the report, are not necessary. Both scarcities and gluts of any commodity or service have, for gestation periods, time spans at least as extensive as the production process (if not the educational process itself). This proportion underlines the importance of corrective short-term action of the kind referred to which is at least as important as perspective planning itself.

men, the demand from employers for trainees in individual trades has been found to vary widely in our survey sample *(vide infra).* These projections are based on the assumption that the future will be like the past. Also, there will be areas of overlapping between (a) and (b) and the latter may not simply reinforce each other. For, quite conceivably, successful candidates for the planned jobs may come from among the backlog of the unemployed rather than from among the new entrants to the labour force. Adding on (a) to (b) may then yield false but higher values whatever the validity for estimating unemployment itself even when the figures are used to estimate rough orders of magnitude. Unemployment crises arise because the future is unlike the past and this latter phenomenon cannot be assumed away. In the forecast for 1984 contained on page 249 of the Task Force Report, *(op cit),* there are only 33,063 unemployed which is less than 0.6 per cent of the labour force projected for 1983-84 and this seems unacceptable for our use. Even if the method is logico-experimental, it is liable to be objected to as variant of the *petitio-principi* fallacy. In the circumstances, the growth rates postulated for the eight sectors should be treated as prescriptive Rather than as expectation or forecast. The limited findings available from the sample used in this monograph do not warrant such optimism—not even the 8 per cent rate of growth assumed for manufacturing industry for 1972-84[1]. To question this rate is to question the value of (a) above-but not, (b) expectations regarding which might be more or less fulfilled.

IV.2. Rising Demand for ITI trainees in Tamil Nadu's Public Sector 1958-68: The employment figures of craftsmen and production-process workers in the public sector in the State have fluctuated, but a slight rising trend can be observed in the percentage of the total employment provided by the public sector establishments in 1968 over the corresponding figures for 1958. Beginning with 9.3 per cent in 1958, it rose to 11.1 per cent in 1962, spurting to apeak 12.4 per cent in 1964, but slumped to 7 per cent in 1966, though it picked up to a recovered 11.1 per cent in 1968. It is noteworthy, however, that, compared with the figures for 1962 and

1 **Report of the Task Force on Human Resources and Social Change for Economic Development 1972-1984: (Mimeographed) State Planning Commission, Vol. I, Chapter V, pp. 128-251.**

j964, tile 1966 and 1968 achievements were lower quantitatively, gven in the public sector, with its avowed employment objectives, there was a slowing down of the demand for craftsmen after 1966.

IV.3. Demand for Craftsmen from the Private Sector 1960-69: The picture of activity in the private sector in enterprises employing trained ITI craftsmen is not very different though this category of personnel in private sector establishments claim the largest absolute share in the total employment provided by all the establishments under survey.[1] The percentage of craftsmen and production-process workers was 37.7 in 1961 and increased to 40.6 in 1963 but remained stagnant at that figure until 1965. It declined by about 3 per cent in 1967 and again increased in 1969, reaching41.6 per cent. But the all-time high of 1969 was higher only by one per cent than the figure for 1963 ; therefore, the demand for craftsmen (including production-process workers)[3] did not manifest any steady or substantial rise during the six years, 1963-69. These figures could be interpreted as a slowing down of the demand if viewed against the background of the significant increases in all private sector employment which evidenced a 0.47 per cent increase (2640 jobs) from 549,380 in 1961 to 552,020 in 1969. The total situation must be seen as an endeavour by private establishments to maintain the *status quo* over the eight years between 1961 and 1969. Though, both in 1961 and 1969, the largest share in private sector employment was accounted for by craftsmen and production-process workers as an occupational grouping, this aggregate did not achieve any positive growth rate. Industrial production during this period, which showed the absence of any pronounced secular growth, would be another corroborating indicator.

[1] **State Planning Commission Report, op. cit; Vol.1; Chapter V; Table No. 2.**

[3] **According to our understanding, the distinction between a craftsman and a production-process worker is based on the ultimate employment break-up. The production process in organized industry consists of a series of processes and a worker's individual contribution to the final output may well be integrated in the whole and cannot be identified physically. Every stone-age tool-worker can call his work his own; so can a village blacksmith but not, say, a cobbler in an establishment which produces machine-made goods. Roughly speaking, the production-process worker appears to be the large industry counterpart of the self-employed skilled craftsman.**

The percentage of other unskilled workers in the total industrial work force which was 25.8 per cent in 1961, fell to 22.7 per cent in 1969, thereby confirming the stagnation hypothesis. As for the demand for craftsmen, one may safely conclude that it slackened in accordance with diminished expectations regarding future industrial growth. (Two graphs reproduced from the inderitor's original as shown on pp. 223-24 of the Task Force Report illustrate this conclusion as bearing on the period 1961-69. The first deals with occupational distribution in public sector establishments during 1958-68 and the second with the corresponding distribution in the private sector over the same period).

IV.4. It must be noted here that, as against the assumption made in the Task Force Report that the trend during six years ending 1968 appears to portray normal conditions of growth in industrial employment, (in column 1) figures in columns 2 and 3, namely, "Manufacturing" based on the figures furnished by the *Annual Survey of Industries* and covering "all employment in factory establishments of all industries," would indicate a lower tempo of growth during the same six years. In addition to this, the Task Force Report itself admits (op. cit, p.226) that, during the three years from 1969 to 1971, there took place no spectacular industrial expansion in the State. It admits further that the trend in the rate of growth of large-scale industries was lower between 1969 and 1971 though more than a moderate rate of growth is credited to the small-scale industries also covered by the *Annual Survey of Industries.* The Planning Commission study attempted to establish a correlation between historical growth in manufacturing industry and the development of employment opportunities for skilled craftsmen at present trained. The exercise did suggest, too, a positive correlation but it was too "macro" an exercise for which levels of significance could be specified ; but the common sense assumption that such a correlation is true underlies the entire study. There is, however, no striking and typical demand for craftsmen that can be foreseen during the perspective plan period.

IV.5. What is more, in the projection of employment trends in the organised sector based on the natural growth rate, the estimated employment in the manufacturing sector between 1971 and 1973 showed only a 4.55 per cent rise. Furthermore employ-

ment attributable to the Fifth and Sixth Plan Programmes is assumed to increase at an unrealistic rate of 3.5 per cent per annum in the manufacturing sector. This figure appears unrealistic but might well be realized through programmed implementation. All the data available in the Task Force Report for a prognosis pointed to a low rate of industrial growth as far away in the Perspective Plan period as 1983-84. It would thus be difficult to assert that the demand for craftsmen alone would register steady and susbtantial rates of increase during the next ten years.

IV.6. Let us juxtapose the supply of craftsmen steadily increasing by about 18,000 per year (using the 1972-73 figure of 17,916 as the normal base-year enrolment)[1] with estimated normal annual demand for them which may be taken to be about 11,700; let us assume further that the annual additional employment in the manufacturing industries (Column I,II and III) would be of the order of 35,000 during the Fifth Plan period, of which craftsmen and production-process workers required would form about 50 per cent. These assumptions would be in keeping with the "Manning pattern by Industrial Categories" of both the public and private sectors over the years 1961-1969, as reported by the Manpower Unit of the State Planning Commission.[2] If the overall ratio of craftsmen to production-process workers in all industries could be taken as 2:1, then the demand for craftsmen would be about 66 per cent of 17,500 (which is 50 per cent of the total annaul additional employment envisaged in manufacturing industry). This yields a figure of about 12,000 which should be the present size of the actual demand, even after allowing the 8 per cent rate of growth in industrial employment assumed in the Task Force report.[3]

IV.7. Our assumption that 50 percent of all employment in the manufacturing industries could be taken as accounted for by craftsmen and production-process workers is based upon the shares of this category in the total employment as reported in the "Manning pattern by Industrial Categories" referred to earlier.

[1] **Tamil Nadu : An Economic Appraisal, 1973.**

2 State Planning Commission Report: op cit; ch. V.

[8] **State Planning Commission Report : op cit, page 231. Also page 226 and 247.**

This share varies from industry to industry depending upon the nature and degree of skills required. For example, it ranges from 24.43 per cent in the manufacture of transport equipment, 33.71 per cent in the cement industry, 35,27 per cent in food-processing industries, 37.88 per cent in the sugar-milling industry, 53.62 per cent in the rubber and petro-chemical industries, 61.27 per cent in the automobile industry, 69.67 per cent in electrical machinery to 75.72 per cent in the manufacture of machinery other than electrical. A weighted average of these shares, making allowance for the varying shares of the industries in the total employment yields the figure of 59 per cent which is what we have assumed.

CHAPTER 5

OFFICIAL POLICIES AND DEPARTMENTAL SURVEYS : A CRITIQUE

I. The table below sets forth the number of trainees who passed out of the ITIs between the years 1964 and 1967 and the number who found employment during those years. The aim of this chapter is to collate surveys conducted by the Department of Training and Employment and conclusions gleaned from the survey conducted for the purpose of this monograph where the two reinforce each other in order to obtain a "consensus" for the recommendations made in this study.

TABLE 5.1.—ITI Training Capacity and Employment Absorption Rates 1964-67[1]

Year	All Trades		Numbers Registered with Employment Exchanges as on January 31 each year
	Numbers Passing out	Numbers Absorbed in jobs	
(1)	(2)	(3)	(4)
1964	2485	1140	907
1965	5887	2456	1663
1966	3848	1319	4030
1967	5371	829	4281

Source : Constructed from information supplied by Principals of ITIs and data gathered by Department of Training and Employment for their 1964 and 1967 surveys.

i For tradewise break up of ITI output and employment, absorption rates over 1964-67, see Annexe V.

I I. Twice as many people were found jobs in 1965 as in 1964 but successful placements were by and large confined to : wiremen, fitters, motor mechanics, welders, electricians, machinists turners, blacksmiths, sheet-metal workers, carpenters, plumbers, pattern-makers and refrigeration mechanics. In 1966, the .aggregate of technicians absorbed in gainful employment fell by nearly one-half: those affected included wiremen, fitters, machinists, turners, blacksmiths, carpenters, plumbers, pattern-makers, refrigeration mechanics who had participated in the preceeding "boom" but draughtsmen, electro-platers and welders also suffered from the otherwise general decline in demand. In the case of the three trades last mentioned the fall in demand must have been due to the slowing down of or to negative rates of sectoral growth. For instance, overall employment figures for craftsmen have a *prima facie* correlation with building activity. In the case of the larger lists beginning with wiremen, fitters, etc, a too rapid rate of output would appear to be indicated. In other words, here the reason is not a sectoral one. A recurrent review of the break-up of trade dispositions and demand from the employment market (prospective rather than current) at the time of admission to ITIs, would serve both to ease bottlenecks and arrest what most undeniably appears to be oversupply in the short run. The exercise of forecasting demand should be undertaken by the ITIs, at admission time, jointly with the Labour and Employment Department, It has to be undertaken on the basis of some kind of industrial census as well as the employment profiles to be found in the projects of would-be employers. An attempt would naturally be made to keep the total number of trainees "as constant" as possible from year to year where a growth rate is unfeasible.(The table above shows clearly that the projection of current trends in statistical fashion might lead to highly misleading results). The figure for 1967 confirms the regressive trend and is besides the lowest for the four-year period, falling to nearly a third of the figure for 1965. To elaborate from figures not taken account of in the above table, turners were the worst affected. 168 turners were absorbed in 1966 against only 65 in 1967.

1.2. The aggregated figures in columns 2 and 3 differ considerably from year to year leading unavoidably to the conclusion that contemporary demand was unable even to cope with current supply to set aside the backlog for the moment. The year

J967 witnessed the addition of as many as 4542 young ITI craftsmen to the cumulated figure of the unemployed. Together, these figures evidence an unmistakable flagging of demand owing to the growth rate in industry falling off beginning from 1966. No amount of industrial revival in 1968 could have mopped up the surplus of unemployed technicians even though figures for lay-off (for the entire period under review) would be necessary before one might speak in terms of a recession. To run through the causes of the retardation quickly before passing on to the human and social problems involved, industrial production was stagnant between 1964-67 which, in its turn, could be ascribed to a variety of reasons. Investment was relatively low and the stock-market, which still in a limited way is an useful index of mobilization of resources for and by the sector, was dull. The power shortage rendered utilization of existing capacity difficult and acted as a deterrent to the setting up of new units of production. A cost-push inflation already at work appeared to have become more intractable and the consumer price index climbed up with every drought and food shortage and extended sympathetically, if not always credibly, with other essential commodities of mass consumption; the latter appeared to be less regulated by the real costs of production of marginal additions to output rather than by uncovered deficits of government consumption and spending and by basic foodgrains prices. Also, in articles of mass consumption, one man's price is another man's cost in a way that becomes cumulated more easily in mass consumption goods than in the case of, say, consumer durables or producers' goods.

1.3. The discrepancies between columns 3 and 4 should prove an eye-opener to policy-makers. The reasons as to why the difference between columns 2 and 3 in Table 5.1. taken together and olumn 4 are not even roughly the same have been gone into in some detail already. In other words, the numbers on the live registers of the Employment Exchanges are not a reliable measure of the magnitude of unemployment made up of fresh entrants to the labour force in a given trade and the backlog of the unemployed in it. Earlier findings based on ITI outputs and numbers absorbed are borne out by comparisons of magnitudes in columns 3 and 4.

During the period 1964—67 , 1964 was probably the least difficult year, the numbers on the live employment registers being the lowest for the period. The situation had deteriorated perceptibly in 1966 when the total unemployed on the live registers well exceeded the output of ITI trained personnel. It would be safe to postulate that nearly two-thirds of those who passed out in 1966 joined the ranks of the unemployed. The quantum of improvement achieved in 1967 can be comprehended only when the corresponding figure in column 3 (5371) is taken into account; in other words, the number of unemployed increased only by (4281—4030=) 251 as against the 5371 who passed out in 1967 and entered the employment market for craftsmen. In conclusion, the employment prospects for ITI craftsmen steadily worsened between 1964-66 and the deterioration was marked after 1965. This situation was not retrieved in subsequent years and as the survey is being finalized (about 1974 j, there were 16,000 unemployed craftsmen registered with the Employment Exchanges which is nearly four times as large as the figure for 1967.

State Action based on Training and Welfare

II. There is a human problem which these figures conceal although that cannot normally be the concern of an academic monograph. In a leading article on 12 kinds of maternity, accident, sickness and unemployment benefits and family allowances, both contributory and non-contributory, paid to over 21.130 million persons, the London *Economist* noted that the number of welfare beneficiaries of State aid was much larger than the 700,000 unemployed which mitigated figure Britain, it thought, should achieve by 1979. Even here, the vulnerable and the poor are more numerous than the straight forward unemployed. Apart from the aged and the disabled, unemployment insurance and family allowances account for the bulk of the transfer payments. Furthermore, there were many, the *Economist* commented ruefully, in the permissible contemporary figure for unemployment of 5 to 7 per cent of the labour force, there were some skilled or quasi-skilled persons who had probably never held any situation during their putative working career. (Keynes' minimum of 3 per cent was raised to 5 in the time of Paish and there are many who now argue that 7 per cent is a more likely, feasible and defensible figure for the developed, industrialized West. To

afford the basis for a comparison, unemployment in England of the great Depression somewhat exceeded 20 per cent of the work force. There were probably not many educated in this proportion, but then one does not know, for the economics of education approach to unemployment is more recent. In spite of all this, one may still assert that "educated unemployment" is a specifically third-world problem. Isolated from their context or sometimes even within it, these figures are not sacrosanct; nevertheless they serve as stages towards a quantified and progressive understanding of the problem. This probability in relation to ITI trained craftsmen is discussed in another chapter. The lot of such, if any, must be disconsolate, tragic and alienating. Although our sample did not reveal any such instances (*vide supra)* among ITI craftsmen, the possibility that there exist craftsmen among them who never had any employment even for a short spell cannot be ruled out. It would perhaps be pertinent to add here that, since continuous employment with security of tenure has been the exception rather than the rule in the case of ITI craftsmen, a means test rather than employment ought to be the criterion of well-being or for eligibility to welfare benefits ; but since urban unemployed figures, both sectoral and macro, are likely to remain high until the end of the Sixth Plan, the income criterion has been left out of the scope of this survey. Also the recommendations are confined to the means of promoting employment among ITI trainees while, at the same time, diversifying courses and augmenting their content in order to add to trainee employability. The possibility of bringing ITI unemployed under a system of compensatory welfare transfer payments or unemployment doles has not been seriously proposed or even considered; but it would not be unnatural if the Departments of Labour and Social Welfare decided to accept some responsibility for those it trained in the first instance. Because a comparison between welfare payments financed by employers, the employees and the State (or just by the first two) and administered according to a whole tradition of evolutionary laws to marginal and/or transient victims of a decentralized, and a fairly and freely competitive employment market and the mass transfer payments unilaterally financed by the State to the poor and the unemployed who form 40 to 60 per cent of their respective population universes would be yet unthinkable at our stage of development. In the one case, employment

is a macro-criterion. It is additive and not integral to the econo. mics of individual projects. It optimizes rather than maximizes, and welfare in the marginal cases is an alternative to employ, ment. In the other case (of the developing countries, that is) it will not do if the promotion of employment is only marginal. Indeed it is an integral project objective which maximizes welfare rather than profit or even income. It seeks to lay the foundations for growth in inter-sectoral equity and an economy not disfunc-tionally and unconscionably inegalitarian.

The Departmental Survey 1964 [1]

A survey conducted by the Directorate of Labour, Employ-ment and Training estimated the number of ITI craftsmen on the live registers of Employment Exchanges on June 30, 1964 at 1348 (and we have seen that figure had grown to 16,000 by 1972). Training and admission policies have clearly, in retros-pect, overestimated the demand for craftsmen in the Fifth and Sixth plans. In the result, there has been an "over-supply". Butit is the contention of this monograph that supply should be adjusted to demand projectwise, by diversifying courses, readjusting admission strength according to anticipated demand in each sector and promoting multi-disciplinary skills in trainees. The point would be repetition here because any overall reduction in the supply of craftsmen is neither contemplated nor recommended. One can only propose that it can and ought to be avoided. During the Second Plan, the number of ITIs increased from 6 to 10 and by 1964, another 20 institutes had been added bringing up the total strength to 30 with a correspondingly increased intake of 9500. In May 1964, 2229 passed out as compared to only 1107 in 1961. Thus within a period of three years the output of trained craftsmen had doubled—the increase being of the order of 101.3 per cent. The aforementioned survey found that there was a larger concentration of ITI unemployed in the following revenue districts in 1964 : Kanyakumari (148), Madurai (145), Chingleput (131), Tirunelveli (119) and Thanjavur (103) and these alone accounted for as much as 72.7 per cent of all the trainees on the live registers. The trades in which the unemployed predominated in that year were those of fitters, wiremen, auto-anechanics, welders, moulders, carpenters and turners.

[1] **See Annexes No. Ill, V for further tabulated findings of this survey.**

TABLE 5.8.—Tradewise Distribution of Unemployed ITI Craftsmen 1964

Trade	Unemployed in 1964	Unemployed in 1964 as percentage
Blacksmith	26	2.1
Carpenter	96	7.6
Draftsman (civil)	22	1.8
Draftsman (mechanical)	11	0.8
Electrician	33	2.6
Electroplater	18	1.5
Fitter	279	22.2
Mechanic (auto)	155	12.4
Mechanic (other)	11	0.8
Moulder	112	9.0
Sheet-metal worker	27	2.1
Turner	56	4,4
Welder	142	11.3
Linesman	12	0.9
Wireman	259	20.5
Total	1,259	100.0

Note : 1. A survey of Passed out Technical Trainees from ITIs Registered with Employment Exchanges in Madras State; a survey conducted by the State Employment Market Information Unit.

2. As 89 trainees could not be contacted during the survey, the actual number of unemployed was taken to be 1,259.

III. 1. The surveyors had derived comfort from the fact that, of the 1259 registered with the Exchanges, only 614 could be treated as wholly unemployed, the rest being classified as under-employed or employed on a part-time basis. A few others were apprenticed in situations that could not be described as whole-time employment and yet others were self-employed. It was concluded on the basis of this notional classification that the percentage of unemployed

in the total consisting exclusively of jobs of non-agricultural origjn amounted hardly to 1.1—less than the usual 3 per cent which figUte makes allowances for labour turnover and attrition. They should have sought sectoral objectives instead of macro reassurance from the survey results. It is easy to see in retrospect that this figure afforded a basis for the assumption that the ITIs could continue to train craftsmen at old rates for manning jobs arising out of planned development. Contemporary Planning Commission procedures also lent support to this assumption. The latter had assumed that, of the 2,07,624 registered with the Exchanges, a third were actually employed but had not reported the fact to the Exchanges in the hope of improving their prospects through another job that might turn up or being able to exercise some choice in the matter of their employment. This monograph admits elsewhere that employment exchange figures have to be used with caution ; but it seems wiser to estimate rather than assume the qualitative distortions which detract from the view of the exchanges as an ideal measure of employment. While such aspirations might be legitimate, they did not call for corrective action on a "crisis" footing as would alarming unemployment rates. On this basis they concluded that the unemployment rate for craftsmen was (1.1^4) that is, about 0.4 per cent of the total moderated figure of 1,38,416. In the circumstances, they concluded that no special action to promote the employment of craftsmen was called for.[1]

1 Although the 16 trades in which the ITIs offer training are established ones by now, labour turnover and attrition rates have not yet been calculated for these. A macro-figure, 30 per cent for all registrants has been borrowed from the employment models of other nations. In the case of ITI craftsmen, it has been found that deduction will have to be made on the following accounts from the proportions or absolute numbers of the unemployed on the following counts :

(1) Attrition and turn-over rates ; (2) registrants who have obtained employment since registration but have not reported it to Exchanges: (this rate lends itself unfortunately to manipulation for publicist purposes.) (3) the self-employed; (4) the part-time workers ; and (5) the apprentices who only really postpone the problem of finding a job. It is the contention of this thesis that these do not detract appreciably enough from the magnitude of unemployment among ITI trainees. See also p.5 and p.10.

A Survey of Passed out Technical Trainees from Industrial Training Institutes Registered with Employment Exchanges in Madras State, Directorate of Employment and Training, Chepauk, Mimeographed; undated but probably June 196J.

III.2. The important reason why this monograph should be considered a cautionary foot-note to the findings of the Departmental Survey is of course that it was really after 1965 that tjj$_3$ employment situation began to deteriorate rapidly. The conclusions from the sample survey on which the monograph is based underscore the cumulated number of unemployed between 1965-71 and the uncontrollable imbalance that this could cause between supply and demand, if the seemingly excessive intake and turnout of craftsmen were persisted in. The facile assumption made then that natural growth rates in employment and those induced by planned investment could together take care of the backlog of the unemployed as well as the fresh entrants to the labour force of craftsmen has been belied by admittedly extraneous factors such as the stagnation in industrial investment and energy shortages. More crucially, the official surveys did not, in any systematic fashion, seek to correlate the supply of and demand for trained craftsmen but rather pointed to other considerations : that lack of mobility in job-seekers and their unrealistic wage expectations were hindrances to greater utilization of the skilled man-power available. The departmental surveyors would not be deterred from their facile assumption by the fact that no applicant among trained ITI craftsmen could secure a placement before at least six months after the completion of his training. To put it starkly, the Department's survey assumed what it set out to find out or generate a steady demand for craftsmen in the employment market. In the best of situations man-power planning is never as easy as that. Their findings about the immobility and expectations of higher wages were extraneous, intitutive and not supported either by statistical evidence or through responses elicited through questionnaires or interviews. From information obtained for the Departmental survey, it was found that, of a total of 1259 job-seekers, 11 per cent were prepared to move in search of a job within the revenue district; 47.8 percent had expressed preferences for a job anywhere in the district; and 41.2 per cent could be considered mobile over the whole country. Likewise, that excessive wage expectations had acted as a deterrent to greater employment was not substantiated. Wage expectations, as found by the surveyors themselves, were Rs. 90 to Rs. 100 per mensem at the district level; Rs. 120-150 per month within the State and Rs. 150-200 outside the State. These

were certainly not excessive in relation to actual wages paid by employers or by firms with roughly equal competitive power, it would have been more pertinent for the surveyors to have cited the absence of work experience in candidates as an influential reason for lower wages paid to new recruits and first entrants. Here again the issue was not as simple as that. For instance employers are known to continue apprenticeship arrangements beyond periods envisaged in the contract or in legislation on the subject instead of recruiting qualified skilled workers who would have to be paid more.

Self-Employment

111.3. The 1964 Departmental Survey noted that 381 of the 1259 trainees, or a third of the total whose names figure in the live registers were self-employed, the frequency distribution being as follows : Kanyakumari, 207; Thanjavur, 65; Tirunelveli, 34; etc. And the tradewise frequency: fitters, 88; wiremen, 82; motor mechanics, 59; welders, 36; moulders, 36; etc. Yet these persons had registered with the exchanges as unemployed persons. At this wage level, dissatisfaction with earnings must be realistic, prevalent then or for that matter, at levels which are thought feasible even by smaller firms today, not based on any fanciful overestimation of their market value. Here, it would have been wiser to take account of the diseconomies of self-employment and promote viable conditions for it through the grant of credit, retraining, technological transfers, market and demand surveys, etc. State facilities for financing small entrepreneurs and for providing them with work-places and shared infrastructure have been evolved on an extensive scale since 1964 when this survey was conducted. Yet conditions have not greatly improved for the self-employed which, to our mind, only shows the magnitude of the corrective action necessary in the matter of training reform in 1964 and this was not even thought of.

Apprentices

111.4. A firm may be obligated by law to accept apprentices and train them. It is only the bigger and more successful ones which more than fulfil the letter of the law. They not only train them but devise purposive courses which would enable the establishment to dovetail the resultant skills into their production programmes. Sometimes they even take them on in their own staff. The unwanted apprentice has always been a problem

and it is not peculiar to the craftsman employment situation which was surveyed by the Department once in 1964 and again in 1967. The apprentice who is also absorbed in productive employment by the agency which trains him is the exception rather than the rule in this country. Thus, in a survey carried out in 1967 on apprenticed craftsmen by the Department of Employment and Training, only 4.5 per cent of the successful apprentice-respondents were able to secure situations within three months of the completion of their apprenticeship, 18 per cent of them had to wait between 6 and 11 months and another 13 per cent had to wait from one to two years. Of the 197 persons, who had concluded their apprenticeship between 1964 and 1965, 117 had responded to the survey questionnaire : of the latter figure, 34 were found to have been unemployed. The Apprentices Act (1961) defines an apprentice as "a person undergoing apprenticeship training in a designated trade in pursuance of a contract of apprenticeship". In its working, the Act has been so stretched that statutory intentions could not be said to have been fulfilled. Both the spells of unemployment in the career of craftsmen and the waiting represent an economic waste which a developing State like Tamil Nadu or a country like India, both in dire need of skills and know-how of development (which perhaps are not always available in the kind and quantity needed) must especially seek to avoid. The Department Survey assumes that a reserve labour force should exist from which employers could draw upon at will. How big should this reserve be ? In full employment conditions, the reserve would be synonymous with the frictionally unemployed. From the viewpoint of man-power planning, however, such unemployment if sizeable, would indeed be wasteful. Frictional employment signified gaps in man-power planning or the kind of disequilibrium such planning ought specifically seek to correct. When it exceeds a certain figure it must, however, be regarded as pointing to structural weakness in planned economy. Retraining of trainers, consultations with employers in the construction of ITI curricula and constant... readjustment [1] as between job require-

i This is already being attempted to some extent through the Director of Employment and Training. See for instance, *Towards A Functional Learning Society,* A survey and Plan for Non-formal Education, The Tamil Nadu Board of Continuing Education, Madras; September 1975; Project No. 14, page 74. See also Project No.15, columns 1 and 2, page 75.

ments on the shop floor and course content, generally the forging of links between skills in apprentices or trainees and the manning structure in industry are once again suggested by the kinds of problems en-countered here. It is understandable that sometimes industrial establishments may have the resources and structures for training apprentices but its commitments to its own employees may preclude its ability to absorb them in its own work-force; nevertheless the training it provides must be deemed valuable and can be utilized by other employers who cannot afford such training.[1] The situation briefly outlined in the foregoing sentences refers to the training of apprentices and their employment prospects in 1967 in which year the 3000 apprentices distributed over 146 industrial establishments and 40 trades were seven times as numerous as the corresponding figure for 1963. Both for the apprentices and the formal trainees, the training arrangements were not unsatisfactory *prima facie* but it was the absence of sequential job opportunities that necessitates a second look at the training arrangements. The journeyman training so common in Europe to this day is unknown here but the bulk of the firms with conspicuous exceptions such as the one cited in the footnote to this para would not discommode themselves to define scope for employment and identify viable units of work with appropriate job descriptions which would correspond to the learned skill achievements of an apprentice or a formal ITI trainee.

III.5. The 1967 survey by the Directorate of Employment and Training underscored the salient fact that 7 out of the 10 ITI trained persons had enrolled under the apprenticeship programme. This, of course, is as it should be. The world over, on-the. job training constitutes the bulk of instruction in skills both in terms of money expenditures and the real skills imparted and the training costs shared by employers , the Government and the trainees themselves. Where State policy requires macro surveillance of employment policies, the employer's share of the cost is paid for by the State and less often by workers' organizations. The six-month interregnum adverted to above is usually between the completion of the ITI training programme and enrolment under

i ibid pp. 72-3 Projects 7, 9 and 10 and examples where the apprentices are absorbed for employment in the training establishment Projects No. 8 and 10, apprenticeship does not lead to immediate employment benefit.

the apprenticeship programme rather than the rirst job and this bespeaks a sluggish employment market as well a change in employer attributes and responsibilities. Since any apprenticeship programme is more job-oriented and conditions are somewhat unique to a given establishment or unit, ITI programmes should divert their efforts to generating conditions favourable for the self-employment of the three (out of ten above) who do not become apprentices and of those of the apprenticed seven who do not succeed in obtaining employment on the conclusion of what must be treated as really the second stage in their training. The latter should be particularly useful because of affective maturity, capacity for judgment and independent and critical thinking which experience brings and because of familiarity with working condition in an industrial plant. They would be particularly useful in ancillary self-employment with a captive market or in repair and servicing shops which do not require much fixed capital investment.

ITI Craftsmen Trainees vs Craftsmen without Formal Qualification

IV. Of the 34,318 craftsmen seeking employment during the quarter ending June 1974, 11,409 were educated and more than twice that number, about 23,269, were classified as not formally educated.[1] The non-educated craftsmen offer stiff competition to ITI trainees by accepting lower wages and flexible terms and conditions of employment, The supply of educated craftsmen (11,409) was, during the period under review, found to be far in excess of the demand for them (aggregating 1483 indents as against 1313 in the previous quarter and as set forth in a statement showing the disaggregated demand for them under broad occupational heads).[2] In other words, the current demand formed only about 12 per cent of the available supply. The actual placements effected by the Employment Exchanges during the quarter were a were 846—just a little over 5 per cent of the ITI trained craftsmen trainees offering themselves for employment. Yet, relatively, this figure

i Vide Quarterly Review of Employment in Tamil Nadu, March-June 1974, State Employment Market Information Unit, Directorate of Employment and Training,

a ibid., Table 10 not reproduced here.

represented an improvement on the corresponding number of the 446 successful placements effected by the Exchanges during the previous quarter. To absorb current outputs of educated and skilled craftsmen and to clear accumulated arrears of employment, an annual intake of 9,000 trainees by manufacturing establishments and other employers would be required. In support of our earlier contention which has also been argued in subsequent sections where relevant, a redistribution of numbers between skills and trades would perhaps meet the needs of the case-while maintaining the aggregate of trainees constant in all the trades and skills referred to in this monograph. During the survey period, shortage of supply was pronounced among physical education instructors, sanitary workers, assistant cashiers, higher grade graduate typists in Tamil and English and in situations reserved for scheduled castes and tribes—particularly typists, steno-typists and maternity assistants.

IV. 1. There is another consideration which militates against restricting admissions or discontinuing courses of study in response to the vagaries of market demand which business sentiment often distorts, aggravating the slowing down of the rates of output. Such a recession was noticed during the period 1964-67 which as we have seen, was studied in some detail by the Directorate of Employment and Training. When output picks up and planned—tor growth rates begin to materialize, man-power shortages have a proven tendency to manifest themselves as a marked and sudden gap or shortage in supply. To offer a much quoted example, perspective plan underestimates of hydel and thermal energy requirements in the first three national plans show how misleading in the sequel current market conditions could be. It is possible that in its assertion of priorities those supporting projects producing material goods won out against those seeking immediate state investment infrastructure. Sectorally more restricted illustrations drawn from nearer home should be available but the temptation to use the cautionary example of under-planning for energy is great if only because of the far-reaching consequences that it has had. This cannot be met immediately as training like education (to which must be added the duration of the apprenticeship stint) entails a substantial period of preparation or gestation. In an overall sense, however, it is the growth of population

as well as its distribution between age-groups that not only neutralizes output but leads to the growth of suddenly over-populated size-classes which then enter the employment market and whom current and existing structures and investments in physical capital cannot absorb. What is the size of the necessary reserve in labour force that is unemployed? There is another point that must be made quickly in passing : where placement, fall consistently short of indents, as is perhaps the case here then both the quality of training and the employability of trainees would need looking to. The first and obvious solution in such contingencies is to bring pressure on industrial establishments to utilize installed capacity to the full. It is the considered recommendation of this monograph that the rate of industrial growth in Tamil Nadu which has lagged behind levels planned for, should be realized in implementation through auxiliary measures already in use, such as the promotion of ancillary industries and the self-employment of entrepreneurs in small proprietorial forms of manufacturing organization. Apart from population pressure, sluggish demand, delays due to gestation, change-over of jobs and attrition rates, incompatibility between training content and job requirements, supply constraint and bottlenecks have had their share in the contribution to lowering actual employment figures. In the course of a dialogue with industrialists, one of the well-known group of industrialists in this country declared that they would be able to absorb the entirety of unemployed craftsmen in the State if the required raw materials and electrical energy were made available to them. This last bit of information is a reminder that hope for the future need not be unfounded ; the solution to the classical problem of unemployment is also the classical solution of steady industrial growth, if the other needs of the moment are not ignored.

IV.2. The arithmetical average computed from widely scattered figures for individual industries could falsify calculations and expectations in two sorts of ways. The proportion of craftsmen employed as production-process workers may in actuality vary widely. It may vary in the same industry from an old unit to a new one and in new industries, from the average of old ones. Even going along with the State Planning Commission estimates we

find in conclusion that it is impossible to foresee the balancing of supply and demand by 1986 in the case of ITI craftsmen. It is even more difficult to argue from the sample to the universe in the case of the survey of the 849 unemployed craftsmen conducted for the purpose of this monograph. The demand for individual trades appears to be governed by causes internal to them while only a few trades moved in step with overall industrial investment and demand.

CHAPTER 6

INTERNAL REFORM : BALANCING SUPPLY AND DEMAND

I. The scheme for training skilled craftsmen through the Industrial Training Institutes set up all over India to meet the growing needs of industries for trained personnel represented the beginnings of man-power planning in India. It has been justified, too, in the event by the demand for these witnessed in the initial years of accelerated industrial development, especially during the Second and Third Plans. A large number of new and expanding industries of various kinds provided a growing market for these trained craftsmen up to 1965. But this favourable force, however^ petered out in the few years following the Third Plan due to a slowing down of industrial growth and production. More particularly, the demand for the ITI trained craftsmen began to taper off from 1965 in most trades other than metal-working, such as those of the fitter, welder, machinist, turner, blacksmith, instrument mechanic, moulder, sheet-metal worker and grinder.

I.I. Though decline in the demand for ITI craftsmen became noticeable in 1965, the supply in trades affected by this fall in demand continued at old rates of output by the ITIs. In retrospect, the inability of the ITIs to respond quickly and constructively to the secular fall in demand or to market distortions is seen more clearly, for, the falling off of demand beginning from 1964 persisted and was becoming cumulative. For instance, in spite of there being 15,677 skilled but unemployed craftsmen on the live registers of the Exchanges in the State as on December 31, 1972, the level of subsequent admissions into the ITIs were not sufficiently pruned or diversified. In fact, enrolment for the technical, arts and industrial schools in the State continued to grow at rates ranging from 1.5 to 8 per cent per annum during the academic years 1970-1973. This has been mentioned in a previous chapter.

1.2. This discrepancy between the low actual needs for trained craftsmen and their excessive supply could be ascribed to a certain lack of flexibility in the set-up and the functioning of the ITIs as at present constituted. Otherwise they should have kept in step attempting a simultaneous and dynamic response to the changing needs of industry for particular trades, adjusting their output to the levels justified by market demand. Have not structures and patterns of functioning become fossilized? Their curricula, courses of study and admission policies have been overtaken by inherently changeable market preferences. Persuasion has only yielded limited results. If they wished to keep up existing levels of admission as well as the distribution of trainees as between trade they could have introduced programmes for new retraining courses or enlarged and integrated old ones. As an alternative to the above policy or in order to reinforce it they could have changed the inter-trade admission pattern. Instead of attempting to consolidate themselves and their past gains at an optimum level consistent with demand as estimated by them over a period in the projected future, the ITIs seem to have sailed merrily on with the wind with an unremitting and indefinite expansion in terms of numbers hoping massively to build up a large reservoir of trained craftsmen who would some day or the other set up in someproductive occupations. Though the imparting of vocational training to youth is desirable by itself, the expense of effort and expenditure in terms of money should have sought to subserve the needs of the economy then and there. While planning aims at security and stability it deals with an inherently changeable reality; a darting, evanescent and metamorphosing reality. For every view of the future at each stage, some adjustmental action may be called for. Hence perspective plans, five-year plans and annual plans.

II. Some of the important deficiencies in policy that have been noticed here came up for discussion with the officials charged with the administration of ITIS as well as with the Employment Exchanges. The consensus reached at these discussions may be summarised as below:

i. The ITIs as at present organised, provide mostly general theoretical training supplemented by some laboratory/workshop training. A certain number of standard exercises are prescribed and gone through in workshop practice.

This type of training does not and cannot lead to the inculcation of definitive specialized skills in any particular production process or industrial situation. In these, curricula cannot be geared to any special needs. (For instance see para 3 below.) A sandwich type of course in which class-room teaching and actual training in industry might alternate was also discussed so that the finished product, namely the craftsmen, will have a measure of actual industrial experience and so that his skills may be firmly grounded in methods and technologies actually used in trade. In other words, how to ensure something equivalent to the on-the-job training for the ITI trainees which is what makes his services marketable ? It is equally clear that such on-the-job finishing training cannot be provided by the smaller employers at this stage. Would this mean apprenticeship in bigger firms and actual employment in smaller ones ?

(ii) The present apprenticeship training does not seem to be of much help to the craftsmen as the industries, which take on apprentices in the manner and number stipulated by laws and government rules under the Apprenticeship Act, are reported to be disinterested in providing the right type of industrial work experience. These establishments sometimes even use the apprentices to do odd jobs, such asrunning errands, fetching tea and cigarettes, etc.or connivingat their hanging idly aboutthe factorypremises till the end of the stipulated day. It is not therefore surprising that a goodly proportion of these apprentice craftsmen are found, at the end of it all, not quite fit for any particular or specialised function that the prospective employers may have to offer. To mention only one of many possible examples, welders trained by ITI need further training in industry for welding jobs in the fertilizer industry and are not familiar with applied welding practices in actual use in industry.

(iii) Considering the present economic conditions and the immediate requirements of industry over the next few years, it would appear that the present level of admissions to the 31 ITIs in Tamil Nadu is excessive and would only add cumulatively to the unemployed.

Ill. The ITIs in the State now admit about 9,000 trainees each year, of whom only a fourth are likely to be utilised after training,

according to current expectations as in the future. Such wastage of skills built up at considerable monetary cost to the State exche. quer and at the expense of scarce economic resources cannot be viewed without concern. It is even more serious than the wastage of the services of the educated unemployed who have only general qualifications. Considerablereduction in the numbers to be admitted is urgently called for and the range of the cut may have to vary according to the market demand for particular trades. The present practice of making marginal adjustments will not meet the situation. An opinion poll associating representatives of industry will have to be conducted and an objective assessment of the needs of industries in the State undertaken. Such a survey must not only take account of changes that have already taken place but must also devise a machinery for monitoring dynamic change patterns of significant magnitude in the growth of industrial production as call for changes and adjustments in admission, curricula and compensatory and continuing education policies.

III.I. As an illustration, the demand for tool-and die-makers and draughtsmen (civil) has been increasing in recent times and only a negligible number of unemployed has been reported among them. Hence admission to this course in the ITIs could be increased beyond present levels. On the other hand, the demand for certain trades, as evidenced by the number on the live registers, is low; the fitter's, the welder's, the moulder's, the wireman's and the turner's are rudimentary but undifferentiated training programmes which furnish examples of declining demand. The excess in supply is reported to be around 1,500 of fitters, 1,500 of welders, and 1,000 of wiremen. A 50 per cent cut in ITI training facilities in these trades over the next three years could, for instance, be a necessary and sufficient response which could restore some balance between supply and demand. In particular, the supply of welders is felt to be unduly excessive as they are required only in small proportions in the skill-mix in the industrial work force, only about four of them being required as against 80 fitters and turners in a mechanical engineering establishment. In passing, one cannot help noticing a marked bias in favour of mechanical engineering skills in preference to proven middle-level skills in electronics, electrical trades and sanitary engineering, in the operation of energy sources, and those associated with the production of social goods,

such as a health worker, village computor, or instructor in non-formal education. Many of these like the last in the list above are trained departmentally but educational, pre-employment training ffould make for upgrading of skills, mobility and as forces for development. In this regard, television mechanics, tractor and other farm machinery mechanics, tool-and die-makers and the like are trades in which the economy could look forward to for a sizeable demand. On the other hand, the demand for courses like carpentry, blacksmithy and moulding appears to be declining and trainees strength in these could be safely reduced, as industries prefer to have them trained according to their special and mutually variable requirements. That is to say, some courses have become outdated while new and necessary courses are not being instituted. The problem here is that the ITIs plead financial difficulties for introducing new courses, as each new course will probably call for an outlay of many thousands of rupees if not a few lakhs. For instance, the setting up of a laboratory for an electronics course at ITI level would require Rs. 4 lakhs worth of equipments and Rs. 2 lakhs of buildings. This is a legitimate expenditure for the State and could be financed from the saving effected by closing down of some of the departments.

III.2. The training now imparted in certain trades in the ITIs are better left to the employers or industries themselves to attempt. The course-content should be designed so that they can be completed in on-the-job training in a foreseeable manner. For example, boiler attenders are required in small numbers but their training involves actual experience of boiler working in an industrial establishment and they cannot be satisfactorily trained in ITIs in Madras. The Chief Engineer of the Buckingham and Carnatic Mills, who is also associated with the Institution of Engineers, Tamil Nadu as Chairman, has offered to train boiler attenders periodically in his establishment and supply the needs of other industries for these craftsmen. Similar arrangements could be made for other trades in which actual industry training is imperative. The benefit of big industrial establishments in ITI training schemes can thus be availed of. As at present, the employer's obligation to employ trainees he has trained is being worked unimaginatively and indiscriminately without regard to the interests of trainees and of apprentices who are usually recruited by the establishments themselves.

111.3. Another suggestion has to do with the attaching of production centres to the ITIs so that a good number of flj. trained and unutilised craftsmen could be absorbed in these production centres. They could then acquire actual production experience on machines owned by these institutions. The products made in these centres should be standardized and of approved quality so that they could be sold in the market and the receipts utilised to meet the expenses of the production centre and the payment of fair wages for the craftsmen ensured without the need of further financial authority from the administrative Department to use the amounts so realized. This could well be tried at least in a few trades to begin with.

111.4. The introduction of new courses and the weeding out of outdated ones for which there is no demand should be attemp. ted as a continuous exercise and not be suffered as an intermittent and crisis-oriented procedure. In practice almost non-formal training as is provided by the ITIs in the State, employability of trainees and the acceptability of services to clients who use them must be the influential criteria.

CHAPTER 7

AN ANALYSIS OF SCHEDULE DATA

I. In the earlier chapters, an attempt was made to correlate the employment prospects for 1TI trainees with the demand for skilled craftsmen as a function of the general economic situation. In this chapter and subsequent ones, answers to the following issues have been elicited from the analysed schedule entries made in the questionnaire by 849 responding ITI trainees from 14 districts of Tamil Nadu including Madras city: (i) the tradewise distribution of the unemployed ; (ii) the relation between the present employment status of ITI trainees and their original rural or urban backgrounds; (iii) the existence of any linear relation between present status (whether employed or unemployed) and basic educational qualifications of trainees apart from the ITI certificate : (iv) the age structure of unemployed ITI trainees ; (v) an analysis of their employment status over a time period; (vi) the period of waiting in unemployment before engagement in the first situation; (vii) a tradewise analysis of assistance received by ITI trainees in setting up as self-employed entrepreneurs; and (viii) motivation among ITI unemployed and the scope for their employment through State-sponsored and/or State-assisted schemes. The schedule data was earlier coded and tabulated in such a manner that it would yield meaningful information on important relationships postulated as between the parameters of the unemployment situation obtaining among ITI trainees, both possible and probable relationships as between them. These were explored so as to derive serviceable conclusions which could be incorporated in the recommendations (Chapter 9). For this purpose, the more important characteristics of the situation were defined in the questions put to ITI trainees.

1.1. Among the factors contributing to or aggravating un-employment, the more important ones appear to be the following:

TABLE 7.9.—Unemployed ITI Trainees—Tradewise and Districtvrise

Trade Category	South Arcot		Ramnad	Tiruchy	Tirunelveli	Chingleput	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1. Motor Mechanic	87	14	51	315	211	83	199
2. Building Maistry	1	–	–	–	–	38	–
3. Blacksmith	32	33	2	22	15	28	11
4. Compositor	2	–	–	–		; —	–
5. Carpenter	2	221	10	59	8	115	–
6. Draftsman	5	–	32	–	–	13	31
7. Electrician	20	82	3	106	7	24	15
8. Fitter (General)	260	221	89	692	242	433	317
9. Machinist	20	82	3	347	69	209	–
10. Moulder	47	22	16	35	32	36	1
11. Plumber	2	–	–	–	31	3	–
12. Sheet-metal worker	25	–	12	165	31	179	–
13. Turner	125	136	64	564	139	68	–
14. Welder	252	123	64	534	179	217	262
15. Wireman	147	25	73	114	164	29	–
16. Instrument Mechanic	–	–	–	43	–	15	–
17. Pattern maker	–	–	–	–	1	–	–
18. Painter	–	–	–	–	6	84	–
19 Electro-plater	–	–	–	–	–	8	–
20. Miller	–	–	–	–	–	–	–
21. Craft Instructor	–	–	–	–	–	–	–
(typist, steno)	–	–	–	–	–	–	–
Total	1,027	959	419	2,996	*1,135*	*1,582*	*836*

TABLE 7.9. (contd.)

Trade category	Madurai (9)	Thanjavur (10)	Madras (11)	North Arcot (12)	Nilgiris (13)	Salem (14)	Dharma-puri (15)	Total (16)
1. Motor Mechanic	152	128	9	92	85	101	55	1,582
2. Building Maistry	–	43	66	–	7	–	–	155
3. Blacksmith	18	–	–	2	79	29	2	273
4. Compositor	28	–	–	–	–	–	–	30
5. Carpenter	33	88	15	65	34	–	2	652
6. Draftsman	–	15	–	48	3	11	4	162
7. Electrician	34	15	53	24	8	43	4	438
8. Fitter (General)	241	173	404	63	101	400	64	3,700
9. Machinist	99	18	130	35	9	–	13	1,034
10. Moulder	20	47	93	86	–	35	3	473
11. Plumber	–	–	1	1	–	–	–	38
12. Sheet-metal worker	48	10	69	41	6	19	4	609
13. Turner	111	140	153	57	56	–	21	1,634
14. Welder	171	174	231	123	19	149	2	2,500
15. Wireman	160	63	125	46	69	–	25	1,040
16. Instrument mechanic	18	8	–	–	2	6	–	92
17. Pattern maker	2	–	16	–	–	–	–	19
18. Painter	5	–	–	–	–	–	–	95
19. Electro-plater	–	–	–	–	–	–	–	8
20. Miller	–	4	–	–	–	25	1	30
21. Craft Instructor (typist, steno)	–	–	–	[1]—	–	–	–	55
Total	1,140	926	1,365	683	478	818	200	14,619

(1) nature or category of the trade in which trained; (2) rural or urban residence of the trainee ; (3) his educational qualifications: (4) age-level of the trainee ; (5) his willingness to take up self-employment ; and (6) apprenticeship opportunities. That each one of the above factors has undesirably contributed to, or exacerbated the unemployment situation among qualified ITI trainees is borne out by the interrelationships as between the questionnaire categories. This has been established in Chapters 4 and 5.

SECTION I

1.2. Tradewise Distribution of Unemployed Trainees : Which are the trades in which there is a preponderance of unemployed ? Furthermore, the relationship between the numbers trained in a particular trade and the magnitude of unemployment prevalent in it would provide an indication of how unemployment among ITIs could be manipulated by varying the trade-mix in the matter of admissions.

1.3. Table 7.9 (prepage) depicts the distribution of ITI unemployed as between the trades in which they are trained as also between the districts from which they hail. If these data are carefully interpreted together with other findings in this monograph, useful inferences can be made for policy ; the regions where the demand for the services of ITI trainees is still undeveloped may be distinguished from blatant oversupply in individual trades where readjustments will have to be made in the intake for individual courses without necessarily affecting the total output of trainees. Among the 14,619 unemployed ex-trainees as registered with the Employment Exchanges all over the State, the district of Tiruchirapalli with 2,996 registrants has the highest number of unemployed. Empirically, this is surprising because the number employed in ancillary trades with or without a captive market is highest in Tiruchirapalli but it is our hypothesis that non-formal training within an industrial establishment or without is an important source of trained manpower. The world over it has been found to be the single largest source, among all modes of non-formal education, of investment in human resources and skills. The next largest number of unemployed trainees is to be found in Chingleput district excluding Madras city which is a separate district for revenue and administration purposes

and it may be treated as such in this monograph. Next comes Madras city with its total unemployed trainees nrmbering 1,365. IVladurai district has 1,140 unemployed, Tirunelveli 1,135 and South Arcot has 1,027 while Coimbatore accounts for 959, Thanjavur with a total of 926 unemployed ex-trainees comes next, Kanyakumari district has 836, Salem 818, North Arcot is saddled with 683 unemployed ex-trainees from the ITIs and hill districts of Nilgiris has a total of 478. The last but one place is taken by Ramnad district with its 419 unemployed, Dharmapuri district occupying pride of place with the least number of unemployed ex-trainees namely 200 only.

1.4. Though the ranking of the districts according to the numbers of ITI unemployed may not appear significant in itself, figures broken-up tradewise will reveal the districtwise preponderance of unemployment in particular trades. It will furthermore throw light on the economics of ITI training activity in individual trades. It will also reveal any superfluity of numbers possibly calling for restriction in admissions to a particular trade in a district, in a group of districts or absolutely to the trade itself. In the alternative, the problem may be solved by remedial measures which have the effect of enlarging employment opportunities in the particular trade.

1.5. A tradewise break-up of ITI unemployed is set forth in Table 7.10 below. Where the number of unemployed is negligible by comparison, trade categories have been omitted from the listing below:

TABLE 7.10.

Categorywise Numbers of ITI Unemployed in Districts.

I. *Tiruchirapalli district:*		II. *Chingleput district :*	
(total ITI unemployed: 2996)		(total ITI unemployed : 1,582)	
(i) Fitter (General)	- 692	(i) Fitter (General)	- 433
(ii) Turner	- 564	(ii) Welder	- 217
(iii) Welder	- 534	(iii) Machinist	- 209
(iv) Machinist	- 347, etc	(iv) Sheet Metal Worker	-179
		(v) Carpenter	- 115 etc

III. *Madras city:*
(total ITI unemployed: 1,365)
(i) Fitter (General) - 404
(ii) Welder - 231
(iii) Machinist - 130
(iv) Wireman - 125
(v) Building maistry - 66, etc

IV. *Madurai district:*
(total ITI unemployed : 1,140)
(i) Fitter (General) • 241
(ii) Welder - 171
(iii) Motor mechanic - 152
(iv) Turner - HI
(v) Machinist " 99, etc

V. *Tirunelveli district :*
(total ITI unemployed: 1,135)
(i) Fitter (General) - 242
(ii) Motor Mechanic - 211
(iii) Welder - 179
(iv) Wireman - 164
(v) Turner - 139
(vi) Machinist 69, etc

VI. *Kanyakumari district ;*
(total ITI unemployed : 836)
(i) Fitter (General) - 317
(ii) Welder - 262
(iii) Motor Mechanic - 199, etc

VII. *South Arcot district*
(total ITI unemployed : 1,027)
(i) Fitter (General) - 260
(ii) Welder - 252
(iii) Wireman - 147
(iv) Turner - 125
(v) Motor Mechanic • 87, etc

VIII. *Thanjavur district:*
(total ITI unemployed : 926)
(i) Welder - 174
(ii) Fitter (General) - 173
(iii) Turner - 140
(iv) Motor Mechanic - 128
(v) Carpenter - 88
(vi) Wireman 63,etc

IX. *Salem district:*
(total ITI unemployed : 818)
(i) Fitter (General) - 400
(ii) Welder - 149
(iii) Motor Mechanic - 101 etc

X. *Coimbatore district:*
(total ITI unemployed : 959)
(i) Fitter (General) - 221
(ii) Turner - 136
(iii) Welder - 123
(iv) Electrician - 82, etc

XI. *North Arcot :*
(total ITI unemployed: 683)
(i) Welder - 123
(ii) Motor Mechanic - 92
(iii) Moulder - 86
(iv) Fitter (General) - 63
(v) Carpenter - 65
(vi) Turner - 57
(vii) Wireman - 46, etc

XII. *Nilgiris district:*
(total ITI unemployed : 478)
(i) Fitter (General) - 101
(ii) Motor Mechanic - 85
(iii) Blacksmith • 79
(iv) Wireman - 69
(v) Turner - 56
(vi) Carpenter • 34, etc

XIII. *Ramnad district:*		XIV. *Dharmapuri district:*	
(total ITI unemployed: 419)		(total 1TI unemployed : 200)	
(i) Fitter (General)	- 89	(i) Motor Mechanic	- 55
(ii) Wireman	- 73	(ii) Fitter (General)	- 64
(iii) Turner	- 64	(iii) Welder	- 2
(iv) Motor Mechanic	- 51, etc	(iv) Wireman	- 25
		(v) Turner	- 21, etc
		others 55	

Source : Schedule Data, MIDS Survey, 1973

Generally speaking, general fitters, welders, motor mechanics and turners are the categories among which most unemployed ITI trainees are to be found. It is, therefore, these trades which principally seem to have contributed to the excess supply of craftsmen. It is in these trades, in particular, that admissions ought to be restricted in the first instance so that the run-away unemployment situation could be contained in the next two or three years, A demand survey, which is beyond the scope of this study, to find out from Employment Exchanges and the principal employers in the districts their disaggregated needs of skilled craftsmen over a time perspective is clearly indicated. To this number will have to be added the community's replacement needs as well as fresh requirements of self-employed craftsmen as also those who can be set up in entrepreneurial activities through state action ; their number will have to be computed by any State or district planning authority concerned with man-power regulation. Action consequential to this survey might entail the expansion of some courses, the restriction of admission to others and the opening of new courses of training according to the ascertained needs of employers and according to patterns of emergent industrial growth.

Taking the entire State into account, the largest numbers of the unemployed ex-trainees of ITIs are to be found in the following trades.

TABLE 7.11

Tradewise Aggregates of ITI Unemployed (1969)

Tamil Nadu State : (total unemployed : 14,619 in 1969)

(i)	Fitter (General)	... 3,700
(ii)	Welder	... 2,500

(iii) Turner	1,634
(iv) Motor Mechanic	1,582
(v) Wireman	1,040
(vi) Machinist	1,034
(vii) Sheet-Metal Worker	609
(viii) Electrician	438

Source: Computed from Tables 7.9 and 7.10 (column 16).

1.6. The situation pictured above provides a clear indication that if the unduly large numbers of unemployed among the unemployed ITI trained craftsmen are to be substantially brought down in the immediate future and the number of the trained craftsmen on passing out of the ITIs over the next few years kept in check in relation to the actual and probable market demand for such craftsmen, the admission to the following courses of study in the ITIs should be drastically curtailed : training fitters (general), welders, turners, motor mechanics, machinists, wiremen, sheet-metal workers and electricians. Such a tentative step may be essayed during the next three years and the situation may be reviewed at the end of this period. In the final reckoning, however, the balance between demand and supply of trained ITI craftsmen should be redressed with a view to maximizing rather than optimizing employment potential.

SECTION II

Differentiation of Rural-Urban Background of ITI Trainees

In a country like India where manufacturing industrial units are all mostly located in urban conglomerations, the rural centres are largely devoid of the modern factory type of industry. There are of course the village industries and cottage crafts which make use mostly of animal labour and manual work. More pertinently for our purpose, the prospects of employment for ITI trainees are practically nil in the rural areas although the setting up of agro-industries under State programmes for dispersal of manufacturing units, growth centres and selective mechanization of agriculture may lead to this end in time. Even in the traditional village trades of carpentry and blacksmithy, those trained in the ITIs have not been able to find as much work in the rural areas as those engaged in these occupations^ the villages hereditarily or as a

traditional caste. The latter function better in the village economy, are more adaptive to village needs, tradewise more competitive than ITI trainees who are generally trained for larger scale industry and have besides social preferences for urban working environments where they have better chances of earning what would be an economic wage in view of their costlier training and accomplishments.

II. 1. As each village is normally well-supplied with the services of carpenters and blacksmiths trained in the family or through local apprenticeship, the gap, if any, to be filled by the ITI trained craftsmen is small and cannot be expected to absorb trained craftsmen in any significant numbers. The undoubted differential that must exist between the earnings of a village blacksmith and those expected by an ITI trainee must be a further constraint. As for the fitter, welder, turner, motor mechanic, moulder, machinist and electrician, (to recall the trades in which an oversupply was discerned) it can be safely asserted that the demand for their services is non-existent in the countryside as we know it today.

II.2. It is against the background of these general considerations that table 7.12 which has been formed from schedule data acquires some significance. This table, which shows the rural/urban origin of the unemployed ex-ITI trainees, throws some light on the correlation between the unemployment of the ex-trainees and their domiciliary and cultural or sociological background. Among the 849 unemployed ex-trainees, 401 hail from rural families and their location following their training in villages appears to have influenced their chances of obtaining employment rather adversely. Their rural location could have contributed to a lack of contact between them and the prospective employers both in the private and public sectors. Though registered, too, with the Employment Exchange at the district headquarters and a few important taluk centres, the possibilities for frequent visits to the Exchanges for obtaining information and guidance were restricted. Such journeys back and forth from the village residences to the district or taluk centres could be prohibitive for a person without means. They often prove infructuous too as the routine reply of the official incharge of the Employment Exchange is simply 'no vacancy' or 'no demand' for the category of trade in which the candidate seeks employment . Even

the newspapers which carry advertisements about vacant situations in the concerned trades are hard to come by for the ITI trainee in his village.

TABLE 7.12.—Tradewise Distribution Ranking of unemployed ITI Craftsmen by Domicile (Rural/Urban)

SI.No.	Trade	Rural (percentage of total)	Urban (percentage of total)	Total
].	Carpenter	61.5(24)	38.5 (15)	100.0 (39)
2.	Welder	57.6 (80)	42.4 (59)	100.0 (139)
3.	Moulder	56.5(13)	43.5 (10)	100.0 (23)
4.	Machinist	53.8(21)	46.2 (18)	100.0 (39)
5.	Wireman	51.7 (31)	48.3 (29)	100.0 (60)
6.	Sheet-metal worker	48.8 (20)	51.2 (21)	100.0 (41)
7.	Turner	48.5 (47)	51.5 (50)	100.0 (97)
8.	Draughtsman	46.7 (7)	53.3 (8)	100.0 (15)
9.	Motor Mechanic	45.8 (49)	54.2 (58)	100.0 (107)
10.	Fitter	40.5 (81)	59.5 (119)	100.0 (200)
11.	Electrician	40.0 (12)	60.0 (18)	100.0 (30)
12.	Others	31.8 (7)	68.2 (15)	100.0 (22)
13.	Blacksmith	24.3 (9)	75.7 (28)	100.0 (37)
Total for All Trades		47.2 (401)	52.8 (448)	100.0 (849)

Note: Figures in brackets signify the absolute numbers in each category.

Source : Schedule Data, ibid

II.3. The urban-based trainees of the ITIs enjoy an advantage in obtaining information about vacancies both in the public and private sectors, either through the Exchanges or through other means. Furthermore the number of vacancies that would periodically arise in the urban industries and therefore the vacancy notifications received by the Employment Exchanges located in big cities and towns are likely to be more numerous than those from the taluk centres or district towns. This is of course to assume that the 849 respondents to this survey prefer, if not actively seek, employment near their places of residence. In the absence of any deliberate location of industries in rural areas, two^things would

be taken for granted: (i) geographical mobility in formally and institutionally trained labour; and (ii) an urban bius in the location of industry because of proximity to markets, pre-existing production infrastructures, transport facilities and tertiary sector facilities.

11.4. The data presented in the table appears to accord well with the above hypothesis as the percentages of the unemployed in the aggregate of the jobless in particular trades appear to be greater among trainees of rural origin than in the urban-based candidates. Specifically, unemployed trainees of rural origin in the total account for higher percentages than those who belong to urban back-grounds; this is definitely true of unemployment in the case of carpenters for instance (61.5 per cent rural; 38.5 per cent urban); among welders (57.6 per cent rural; 42.4 per cent urban), moulders (56.5 and 43.5 percent), machinists (53.8 and 46.2 per cent), wiremen (51.7 and 48.3 per cent). The first thing that must be said about those figures is that the discrepancy is not as great as those to be found in other rural-urban contrasts.

11.5. It is also probable too that many of the rural candidates for ITI training were initially admitted into these trades either because of their preference for simpler trades such as these. Alternatively, they were forced to take up these trades due to their poorer educational attainments to begin with. A third possibility is that vacancies were available only in the simpler trades, the urban-based candidates opting for and being found educationally fit for the relatively more sophisticated ones like sheet-metal working, turning, draughtsman-ship, automobile repairing and servicing and the trades of the electrician and the fitter. The percentage of the unemployed blacksmiths, draughtsmen and electricians of rural origin in the total appears to be smaller than in other trades because surprisingly, not many rural candidates opt for these courses. While they may not wish to compete with apprentice-trained blacksmiths in the villages, it is surprising that they do not wish to take advantage of the possibility of upgrading skills in the villages through formal or institutional training. The absence of a competitive and developing rural economy is a further constraint. It appears necessary to guard against the simple unqualified conclusion that blacksmiths are simply in greater demand in the villages. There is more to it than just that. This appears to be untrue,

however, of the situation analysed in this monograph although placement rather than unemployment figures would provide proof of our findings above. Both the candidates for a blacksmith's job in the village and his prospective employer are unlikely to approach the Employment Exchange for their needs.

II.6. On the other hand, it is found that the urban unemployed trainees predominate in terms of percentages as compared with the unemployed rural trainees in the following trades : blacksmithy (75.7 per cent urban, 24.3 per cent rural), miscellaneous trades (68.2 and 31.8 per cent) that of the electrician (60.0 per cent and 40.0 per cent), the fitter (59.5 per cent and 40.5 per cent), the motor mechanic (54.2 and 45.8 per cent), draughtsman (53.3 and 46.7 per cent), the turner (51.5 and 48.5 per cent), and the sheet-metal worker (51.2 and 48.8 per cent. One may be justified in concluding, on the basis of these percentages, that candidates of urban origin either have a preference for these more sophisticated trades and therefore crowd into them or they are educationally better equipped for these trades and are admitted into them for that reason, thus forming a larger proportion than their rural compeers. (This is true probably of all statistical reckonings in this monograph.) Hence perhaps the prevalence of unemployment among the urban trainees in these particular trades.

SECTION III

Relation between Basic Educational Achievements and Unemployment

III.Itis but appropriate that, for admission to each of the separate trades, a basic educational qualification should be required. This is to ensure that those who are admitted to particular courses possess the requisite literacy and numeracy which alone would enable them fully to benefit from the training. The administrative authorities of the Industrial Training Institutes have, in consonance with this principle, laid down, as follows, the minimum general educational qualifications required for admission to individual trade courses.

III. 1. For the majority of the trades listed above, then, the minimum educational qualification is the ninth standard in high school education in Tamil Nadu. A few trades require the candidate to have passed the tenth class ; this is especially so for the trades of

TABLE 7.13.

Designated Trade	Minimum Educational Qualification
1. Fitter 2. Turner 3. Machinjst (Miller) 4. Machinist (Grinder) 5. Machinist (S.S.P.) 6. Pattern maker 7. Moulder 8. Blacksmith 9. Sheet-metal worker 10. Welder (Gas and Electric) 11. Lineman 12. Wireman 13. Carpenter 14. Plumber 15. Brickmason/Building Constructor 16. Mechanic (Motor Vehicle, Diesel, Tractor, Instrument, Refrigeration)	Should have studied up only to two standards below the class qualifying candidate to sit for the Matriculation or equivalent examination or only three standards below the Higher Secondary Examination,
17. Electrician 18. Draughtsman 19. Mechanic (Chemical Plant, Textile Machinery) 20. Tool and Die-maker	Should have passed the Matriculation or equivalent examination or passed 10th class examination-only one class below the Higher Secondary Examination.

the electrician, the mechanic, the draughtsman and the tool and die-maker.

III.2. Though the minimum educational qualification laid down is only the ninth standard for the 16 trades listed above, many candidates who possess higher than the minimum prescribed qualifications are seen to have undergone the courses concerned either voluntarily as a matter of active choice, due to natural aptitude or in the expectation that the particular trades have better employment potential than a generalist school education. There are, of course, other reasons, such as the compulsion of circumstance, or a more

trusting and nobler disposition to spend one's down-and out-days in a seat of learning among those who can afford it. However, any employer would naturally prefer a better educated craftsman to one with lower general qualifications. That, in the realistic emplo. yer's estimation, training in a craft concerned counts for more than the general education, whether officially prescribed or not, is also probably true. (On the other hand, there must be employers who vaguely value general qualifications at least equally, the college or school tie being an ancient weakness.) As against both these considerations, a craftsman who has passed his S.S.L.C. examination or has done even better would prove more useful and productive and perhaps more efficient in his work for he may bring to bear on his tasks greater intellectual acumen and refinement as well as a greater maturity to match his physical skills. If this assumption is true, the chances for employment would be better and greater in the case of S.S.L.C. holders and those with higher qualifications among the unemployed ITI trainees. Still worse, unemployed trainees with just the ninth standard qualification would be at a discount or disadvantaged in the recruitment of trained craftsmen for jobs especially in the private sector as the latter category of employer enjoys greater freedom to exercise his active preferences. The chances are he would be more efficiency conscious, while the public sector employer must be guided by the statutory rules regarding social justice and would generally be required to balance job requirements with qualifications and a candidate's own deserts according to criteria such as equal pay for equal work. An over qualified employee not only gets less than he deserves in the light of usage but also effectively blocks the proshpects of another just about properly qualified for the job.

III.3. It is against this background that the data presented in Table on Tradewise Unemployment and Educational Status of Erstwhile Trainees must be seen and understood. The numbers indicate that, out of the total of 849 unemployed trainees, as many as 611 were S.S.L.C. holders. This may be interpreted as the outcomeof more S.S.L.C.s being admitted to the trade courses than those with just the permitted qualifications. To repeat, the qualifications required for all the trades excepting that of the electrician and draughtsman is only the ninth standard. Though these higher than minimum prescribed qualifications should have ordinarily

worked in their favour in getting jobs more quickly in preference to others with just the minimum required education, the findings of the survey have not been overly conclusive.

The conclusion is, of course, that positive evidence to establish a greater intensity of correlation between higher general qualifications and greater employability is wanting. At best, the evidence is indeterminate although the 611 unemployed out of the sample 849 are S.S.L.C. holders. The suggested conclusions that S.S.L.C.s are at a discount because of their higher general .education seems untenable. It is difficult here to judge as between the claims of those who have different educational qualifications ; but in courses which impart required skills according to a viable curriculum, substantial enough to be complete, the criterion for job selection should be strictly technical proficiency. But, on the other hand, a great number of unemployed among the educated, whether their equipment is technical or general education would be odd, wasteful and reflect adversely on selection procedures. Such procedures if not rationalised would discredit the educational system and the capability of the economy to utilise its human resources to the maximum advantage.

TABLE 7.14—Educational Status of the ITI Trained Craftsmen and Trade-wise Unemployment

Serial Number	Trade	S.S.L.C.	Below S.S.L.C.	Total Unemployment
1.	Moulder	12	11	23
2.	Electrician	30		30
3.	Machinist	31	8	39
4.	Draughtsman	14	1	15
5.	Blacksmith	10	27	37
6.	Turner	84	13	97
7.	Wireman	42	18	60
8.	Motor Mechanic	94	13	107
9.	Sheet-metal Worker	21	20	41
10.	Carpenter	14	25	39
11.	Welder	96	43	139
12.	Fitter	151	49	200
13.	Others	12	10	22
	Total ...	611	238	849

Source: Schedule Data

III.4. All the same, the relatively higher employability of the ITI trainees with a school leaving certificate is reflected in the relative numbers of unemployed among the S.S.L.C.s *vis-a-vis* others with lower general qualifications in particular trades. This kind of situation is best exemplified in the employment picture of trades like blacksmithy and carpentry. The reason why a similar tendency is not at work in the other trades may be due, as pointed out above, to the predominance of S.S.L.C.-bolders among the trainees in the trades and the general paucity of vacancies in these. A firm opinion could be expressed on this aspect if equal numbers from S.S.L.C s and below S.S.L.C.s are admitted to a trade and their employment profiles of the particular stream examined after a specified time lapse. Even here an assumption about the equal accessibility to on-the-job training which is a considerable source of all skills in modern organised industry would be necessary.

SECTION IV

Past/Present Employment Status of Unemployed in the Survey

IV. One of the most difficult questions in the assessment of the employment status of persons in developing countries involves the classification of workers either as fully employed, under-employed or totally unemployed. As argued in a paper presented at the Institute of Development Studies, University of Sussex, in 1970 for the Study Seminar on Employment, Unemployment, and Under-employmeut in Developing Countries[1], unemployment is defined as pertaining to those persons in the total labour force who desire to work but are not in fact engaged in any situation, whatever. Under-employment is customarily used to denote either those in the labour force who are involuntarily working only part of their normal working time (visible under-employment) or others who are working below their capacity (invisible under-employment). The one has a productivity orientation. The other seeks to quantify the absence of opportunities for working full time. Hence these typified descriptions of unemployment and under-employment, taken from the experience of the developed

[1] **Paper by Dr. Malcolm S. Adiseshiah, Deputy Director-General, UNESCO, 1970. Mimeographed ; Library of the Madras Institute of Development Studies,**

countries, have to be used with care for the developing countries, which are characterized by a high degree of initial under-employment—both the cause and effectof low degrees of development. The high degree of aggregation of incompatibles normally used in computing the unemployed and under-employed conceal many factors which have the end-effect of detracting from the acceptability of or the validity of such computations. These quantified concepts prove often to be no more than "guesstimates".

IV. 1. There is a special problem bearing on the figures of the unemployed as taken from the live registers of the Employment Exchanges. These figures which have been used in this study must surely suffer from one, some or all of the following limitations which reduce their use value in macro-economic discussion. For one thing, at these Exchanges, not all the unemployed are registered; alternatively some seek and obtain (or fail to get) employment through personal contacts or through newspaper advertisements. The unemployed in the rural areas have little access to urban-based jobs. As for jobs in the rural areas, these vacancies and appointments do not come within the purview of the Exchanges at all. On the other hand, there are those who register but fail to report when they get other employment, at the urban Exchanges. They, however, keep the registrations alive looking for better employment; yet others probably register at more than one Exchange. Unemployment registrants who obtain a situation by other means during the pendancy of their "applications" routed through the Exchanges are another category again (referred to briefly in an earlier sentence). It is difficult to say how representative for such purposes the sample here is of the universe. If sample surveys could be a more precise means of quantification, this study based upon such a survey should yield useful mutual proportions as between the employed, the unemployed and the under-employed.

Note: 1. Those unemployed in the present exceed the number unemployed in the past, present unemployment is greater in the case of the fitter, welder and the turner,

2. Table 7.15 affords an interesting picture with regard to the present and past employment status of the 849 sample trainees

TABLE 7.15—Tradewise Employment Status: Past and Present

Si.No.	Trade	Past Pre-1973		Present End of 1973		Tota:
		Em-ployed	Not em-ployed	Em-ployed	Not em-ployed	
1	2	3a	3b	4a	4b	5
1.	Moulder	10	13	3	20	23
2.	Electrician	19	11	12	18	30
3.	Machinist	14	25	11	28	39
4.	Draughtsman	6	9	3	12	15
5.	Blacksmith	18	19	9	28	37
6.	Turner	49	48	21	76[1]	97
7.	Wireman	22	38	14	46	60
8.	Motor Mechanic	39	68	20	87	107
9.	Sheet-metal Worker	13	28	8	33	41
10.	Carpenter	11	28	4	35	39
11.	Welder	63	76	32	107[1]	139
12.	Fitter	106	94	37	163[1]	200
13.	Others	10	12	4	18	22
	Total ...	380	469	178	671	849

Source : Schedule Data.

who incidentally are all drawn from the live registers of the Employment Exchanges from all the districts of Tamil Nadu. These persons were all registered as unemployed; the investigation conducted through personal interview and the filling in of the questionnaire has been picturized in Table 7.15.

IV.2. Out of the 849 unemployed trainees, 178 or 20.9 per cent of the total were in fact found to have been actually employed. It is likely that this 20.9 per cent of the total looked upon themselves as under-employed. Alternatively they had sought to improve their position by retaining, if possible, a plurality of situations or trying to obtain higher emoluments. To put it differently, only 79.1 per cent of those registered and enumerated in our sample are really unemployed on the survey date.

i This proportion was assumed to be one-third of all registrants on the live registers Cf. A survey of Passed out Technical Trainees from ITIs etc. Directorate of Employment and Training, Madras; June, (mimeographed^ page 5. Para 2-5)

IV.3. This bears out one of the hypotheses proposed in para j aod a more extensive countrywide study or a series of regional studies could use this fact to measure this influence on unemployment figures. This will have the added advantage that the fortunes of a stream or cohort of unemployed could be traced. We may, therefore, conclude that it is probable that about one-fifth of all the ITI trainees who had registered with Employment Exchanges might have actually found employment subsequent to their registration. These either forget to notify the Exchanges or hope to get a better situation through the mediation of the latter. Even if unconventional and innovative, this prima facie appears to be a valid use of the Exchanges.

IV.4. Another interesting feature of the situation, as seen from the table is that at some period anterior to the survey date, about one half of the total of 849 investigated, namely 380, (column 3a in Table 7.15) had really been employed for spells in some situation or other, and only 469 could be said to have been totally unemployed at any point of time immediately before the survey i.e., before 1973. This works out to a 55.2 per cent unemployment in our sample. The sample trainees seem to be much worse off as a group. This is evidenced by the fact that, between "the present" and "the past," the percentage of unemployment had increased to 79 per cent which is 24 per cent more.

IV.5. If we now regard the tradewise break up, there was a greater degree of unemployment among fitters, welders, motor mechanics, turners and wiremen, the percentages being 20, 16.2, 14 5, 10.2 and 8.1 respectively of the total unemployed in the sample. Past unemployed was least among draughtsmen, electricians and moulders. On the other hand, present unemployed was found to be notably higher among fitters (24.3 per cent) welders (16 per cent), motor mechanics (13 per cent), turners (11.3 per cent) and wiremen (7 per cent). However, increases in unemployment had been chiefly marked only in the case of fitters (4.3 per cent) and turners (1.1 per cent). But among the trades, in which the absolute numbers of the unemployed was smaller, viz., draughtsmen, moulders, electricians, blacksmiths, machinists, carpenters and sheet-metal workers unemployment percentage increased in recent years by 20 per cent, 30.4 per cent, 23.3 per

cent, 24.3 per cent, 8 per cent, 18 per cent and 12.2 per cent respectively in the same trades. These figures point to a serious situation of crisis proportions after a discount of 20.0 per cent has been made for wrong reporting in figures for unemployed who are still to be found on the live registers of the Employment Exchanges.

SECTION V

TABLE 7.16—Age-wise distribution of unemployed ITI craftsmen

Sl.	Trade	18-25 Years		26- 30 Years		31- 40 Years		Total	
		E.	N.E.	E.	N.E.	E.	N.E.	E.	N.E
1.	Moulder	3	12	–	6	–	2	3	20
2.	Electrician	6	13	6	5	–	–	12	18
3.	Machinist	7	18	4	10	–	–	11	28
4.	Draughtsman	2	5	1	5	–	2	3	12
5.	Blacksmith	7	18	2	9	–	1	9	28
6.	Turner	13	57	9	18	–	–	22	75
7.	Wireman	8	30	4	15	2	1	14	46
8.	Motor Mechanic	13	60	7	24	–	3	20	87
9.	Sheet-metal worker	6	28	1	5	1	–	8	33
10.	Carpenter	3	24	1	11	–	–	4	35
11.	Welder	20	69	9	36	3	2	32	107
12.	Fitter	25	104	12	48	1	10	38	162
13.	Others	6	7	–	7	–	2	6	16
	Total ...	119	445	56	199	7	23	182	667

Source: Schedule Data

Note : E. = Employed for sometime or temporarily.
N.E. = Not Employed.

V. The age-structure of the unemployed craftsmen presented in Table 7.16 reveals an interesting if a disconcerting feature of the situation. They appear to be distributed as between all age-groups from 18 to 40 years. Not only are the recently passed out craftsmen to be found in the ranks of the unemployed but there are others who date back from the first batches ever to pass out of the training institutes. This is a sad reflection on the placement services rendered by the Employment Exchan-

ges as well as on the initiative of the senior Alumni; on their **inability** to adjust themselves to market requirements: on ,jje authorities and employers who have not provided the necessary updating, retraining and On-the-job courses.

V.'l. The table lists the unemployed craftsmen who were trained by the ITIs and were covered by the sample study both according to their chosen trade and their age. It is deliberately that ages have been grouped broadly so as to stress the nature and extent of unemployment among the young and enthusiastic trainees in the 18-25 age-group and the extent of unemployment in the **age**-group 26 to 30 years. Even here the situation is only slightly less serious but it is bad enough. It is in the group of trainees whose age varies from 31 to 40 years that the unemployment figures are the least unsatisfactory. Family circumstances probably explain the presence in the labour force of 7.2 per cent of unskilled labourers under 15 years of age but otherwise general preference for older (probably because they are more mature) people for vacant situations are notable social features of the employment situation among the craftsmen in Tamil Nadu.

V.2. Out of the total of 849 ITI trained craftsmen covered by the sample, 564 fall in the age-group 18 to 25 years, which works out to 66.4 per cent of the sample. This preponderance in the lowest age-bracker of unemployed persons can perhaps be taken as an indication of the stagnation in demand for the kind of services that ITI craftsmen represent and more accurately the over supply in relation to industry's capacity to absorb them. What is more, the duration of iinemployment in the case of this age-group could be one to five years depending upon the trades in which they were trained and moreover on whether or not they underwent subsequent apprenticeship training. In this age-group, the tradewise figures for unemployment have been computed as follows. Fitter (23 per cent), welder (16 per cent), motor mechanic (13 per cent), turner (12.4 per cent), wireman (7 per cent), and lesser percentages among the rest. The lowest unemployment figures have been registered in draughtsmen of this age-group (less than 2 per cent); moulders (lees than 3 per cent) and among electricians (less than 4 per cent). Normally, the construction industry growing

on both private and public accounts should be able to absorb craftsmen associated with building whose skill should ordinarily rate higher than that of others trained by less formal means. It is the surprsingly high unemployment figures for carpenters in this age-group (5 and 4.9 per cent respectively in the 18-25 and 26-30 age-groups) the demand for whom, given a fairly continuous and growing investment in construction and other industries employing rudimentary machines during the period of the five-year plans, that point perhaps to an oversupply. This in turn would suggest greater content and a higher degree of differentiation and sophistication in ITI curricula. This recommendation, like the others, has been argued and reiterated in different sections and contexts in this monograph.

V.3. A more detailed questionnaire might have elicited and helped to render explicit any latent preferences in trainees for regular employment with institutional employers. The latter offer continuity of employment, security and a measure of status which appear to result from formal training but serve to hamper the initiative of the unemployed in exploring avenues of casual mployment and the possibilities of self-employment status. In the absence of explicit statistical support from schedule data, the hypothesis may however be hazarded that there is a healthy absence of prejudice among employers, small and large, against apprentice trainees in carpentry and blacksmithy and others trained in non-formal ways who compete with ITI trainees for jobs and custom in these trades.

V.4. In the age-group of 26 to 30 years, there are 255 unemployed which works out to 30 per cent of the total ITI unemployed in the sample. They must be the most frustrated of the lot as at least ten years must have elapsed since the bulk of them completed their trade training. If after a decade, they have still not been able to secure their first employment, it is nothing short of a social tragedy in the microcosmos. It is time that the Department of Labour and Employment took cognizance of the dire condition that have befallen technical personnel trained under their own aegis and take steps to find ITI crafsmen suitable employment in institutions and factories as a special priority. Else they should consider rdawing up projects for setting up unemployed trainees in suita-

ble projects for self-employment. This recommendation has been renumbered in the last chapter along with others made elsewhere in the monograph.

V.5. The largest numbers of unemployed in this age-group are found among fitters (23.5 per cent), welders (18 percent), motor mechanics (12per cent), turners (10.6 per cent), andwiremen (7.5 per cent). The lowest is seen to exist among moulders (2.4 per cent), draughtsmen (2.4 percent), sheet-metal worker (2.4 per cent), electricians and blacksmiths (4.3 per cent each). The rate of absorption in these latter trades has probably picked up in recent years. In particular, we may recall from the earlier overall tradewise computation of supply and demand (see Table 7.9) the levels of supply of draughtsmen, moulders and electricians over the years had not much exceeded the levels of demand for these trainees. Thus it is that unemployment in these trades both in the 18-25 and 26-30 age brackets has been only of the order of 2 to 4 per cent.

V.6. As we proceed to the 31-40 age-group, it becomes clear that though, as a group, their unemployment works out to only 3.5 per cent of the total number of trainees in the sample, sectoral unemployment percentages in individual trades are found to be higher. Unemployment in this age-group is 37 per cent for fitters which is the highest for any trade. The percentage of unemployment for welders is 17 per cent but for all the other trades the figure is 10 per cent or less.

V.7. It is this age-wise break-up of unemployment among ITI craftsmen that readily suggests a solution : the designing of an effective scheme for their self-employment, particularly for those who cannot obtain institutional employment and find casual employment either distasteful or unremunerative. The unemployed in the age-groups 26 to 30 years and 31 to 40 years put together number 285 out of the sample total of 849 which works out to 33.5 percent. It must be added that trainees in those higher age-groups would ordinarily possess higher levels of maturity, experience and self-confidence which adds both to their employability and to their ability to avail themselves of aid and incentives provided by the State financial institutions or nationalised banks for purposes of self-employment. This recommendation has been further elaborated in the chapter proposing self-employment

projects for the benefit of craftsmen who have passed out of the ITIs. In conclusion this Chapter has sought to argue that the higher age-groups are more suitable for the self-employ, ment schemes.

SECTION VI

Assistance from Outside Agencies in securing Employment

VI. The ITI craftsmen in our sample are known to have made efforts to secure employment through (1) the Employment Exchanges ; (2) their alma mater, the ITIs which rendered place, ment assistance; and (3) their own efforts.

TABLE 7.17.

Serial No	Trade	Through Employment Exchange	Own Efforts	Through ITI	Agency Unknown	1 Ulal
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1.	Moulder	2	8		13	23
2.	Electrician	5	11	2	12	30
3.	Machinist	2	12		25	39
4.	Draughtsman	5	3	1	6	15
5.	Blacksmith	3	11	4	19	37
6.	Turner	2	47	1	47	97
7.	Wireman	4	20		36	60
8.	Motor mechanic	7	34	–	66	107
9.	Sheet-metal Worker	2	12		27	41
10.	Carpenter	5	6	–	28	39
11.	Welder	6	60	1	72	139
12.	Fitter	18	79	9	94	200
13.	Others	2	6	1	13	22
	Total ...	63	309	19	458	849

Source: Schedule Data

VI. 1. It is seen that, out of the 849 trainee-respondentsj 309 which makes for the considerable proportion of 36.4 per cent, had secured brief spells of employment through their own efforts (col. 4 in above table). This proportion is much

larger than that made up by trainees who were able to obtain **short** spells of employment through the mediation of the Employment Exchanges. This rare distinction, only 63 out of the 849 i.e., 7.4 per cent, of the respondents could claim. Placement assistance obtained through the industrial training institutes appears to be the lowest, accounting for only 19 cases of employment assistance—a percentage which amounts to only 2-2. If the Department of Labour and Employment would think it fit to diversify ITI courses and refurbish curricula, column 5 could become an important source progressively.

VI.2. In securing employment, the part played by the Employment Exchanges has not been as significant as the "own efforts" of the trainees themselves. In fact about six times the number placed by the Exchanges found employment on their own. These point to all manner of conclusions : (1) need for improvement of coverage and reporting systems of Exchanges and their extension to district towns so that they may serve rural areas ; (2) increased awareness of the value of Employment Exchanges by employers and employees alike, transcending rather than displacing the private contact system; (3) the linkage of the Exchanges with State and country wide systems of recruitment sanctified by custom and usage; (The abolition of pockets of bonded labour under the Twenty Point Programmes an instance of the modernization), and (4) above all, they should help to promote occupational or regional mobility of skilled labour.

VI.3. The reasons why the Exchanges could not cope up with the problems they were faced with were noticed in an earlier section. Instances of services successfully rendered by them to the trainees in our sample have not been so significant that the trainees could be blamed for not utilizing this source more fully. Given the realities of market situation, trainees appear to be right, in relying more on their own efforts at direct contacts. It is significant that, in recent times, the agriculture, veterinary, fisheries and some of the Ministries of the Union Government have begun to advertise their vacancies for junior research and maintenance personnel through a pooled information system. In April 1976, the first issue of Employment News issued by (he Directorate of Advertising and Visual Publicity of the

Ministry of Information and Broadcasting was released to the public; it includes news of recruitment made by the Union Public Service Commission as well as by specialist and technical departments of State. This will serve to promote a national market for skilled persons and specialized roles. In our sample, the Exchanges have further more so far served the public sector more than the private sector. The contact system of filling the vacancies for trained craftsmen and others militates against their raison d'etre. In their overseeing knowledge of supply and demand and their understanding of the intricacies of job requirements and candidates achievements, one would expect them to be the best clearing-house. If mandatory consultation of Exchanges by employers is not being adhered to it is because they have become ineffective. What ails the Employment Exchanges is their lack of an adequate and more comprehensive organisation which can place suitable candidates in vacancies arising not only in the public sector but also in the private sector industries in which the opportunities for ITI craftsmen of all trades should be more numerous than in the former. They should either be revamped for their enlarged functions and given a statutory basis or they should be enabled to play a moderated role and their functions rationalized accordingly. In the last analysis, the Exchanges ensure mobility and a Statewide or national market which the contact system can only ensure arbitrarily if at all.

SECTION VII

Waiting for a job: its duration for ITI trainees

VII. It is customary to measure employment in lakhs or hundreds of thousands (in India) or in millions in the West, whereas, in India and the developing countries generally, significant increases in employment can be hoped for only as a result of general economic development. In the West policies designed to reduce employment are curative rather than developmental. They are often treated as cost without returns even in planning and not as a factor where the employment is considered productive by employers (productivity for them equals only marginal wage). In the macro-view there is a cost gap between optimum labour employment and full employment. Unemployment is measured less often in terms of numbers than as a proportion of the employable labour force and

equally often as **a** percentage of the employed labour force. There js a distinction here. That the latter ratio is usually used in **British figures** is the measure of trade union influence on State policy and their insistence on macro-policies to relieve unemployment for so expressed the figures underscore the magnitude of unemployment at any time. In India, the 1961 census expressed the unemployed as a percentage of the total population. These macro-measures appertain to the economy as a whole. Among the many measures that define the employment **status** of **a** skilled or educated individual, who is as a result capable of occupational mobility the period of waiting (a) from certification or graduation to his engagement in the first situation and (b) the interregnum between **the** first and **the** second and that between the second and subsequent jobsare vital measures. Extended waiting of the latter kind may indicate the time of change-over from one job to another or to structural factors that retard employment flows. Under present market conditions the waiting of the first kind has been computed at six months for the notional "average" graduate and 15 months for a matriculate. The Employment Exchanges have latterly reported a worsening situation, for, according to them the average figures which normally apply to all registrants not just ITI craftsman, are four years for a graduate and three years for a matriculate.

VII. 1. For our 849 respondents, the period of waiting before their first job ranged from one year to just under four years as on the survey (1973) in Table 7.18, the respondents in each major trade grouping have been divided according to the period (from one to four years) each trainee had to wait for his first situation. Since the "no response" (30 respondents) makes up only 3.53 per cent of the total, this part of the survey was more reliable than dealing with the number of respondents who were able successfully to avail themselves of the mediation of the Employment Exchange; but here again the not applicable column, which it has not been possible to explain further, accounts for more than 31 per cent of the total. 37.5 per cent of the effective respondents had to wait for one year for the first job—a third of them that is 13.7 per cent—waited for two years for their first job. Those who waited for four years or more (9 per cent) exceeded the number of those whose waiting was limited to three.

VII.2. Three to four years was certainly a long time to wait for trained candidates in a planned economy where industries grow according to predetermined rates in the public even more than in the private sectors. This is so because while the divi. dend or profit motive makes forward planning imperative in a firm the Planning Commission or the National-Development Council

TABLE 7.18—Period of Unemployment

SI. No.	Trade	1 Year	2 Years	3 Years	4Years &above	Not appli-cable	No Res-ponse	Total
1.	Moulder	9	3	–	3	7	1	23
2.	Electrician	19	1	–	1	8	1	30
3.,	Machinist	10	4		3	20	1	39
4.	Draughtsman	6	4	–	*I*	4	–	15
5.	Blacksmith	10	10	3	8	6	–	37
6.	Turner	32	11	3	9	38	4	97
7.	Wireman	26	5	3	8	16	2	60
8.	Motor Mechanic	45	12	6	10	29	5	107
9.	Sheet-metal worker	13	4	1	2	21	–	41
10.	Carpenter	20	4	2	5	5	3	39
11.	Welder	53	19	9	20	31	7	139
12.	Fitter	64	37	11	4	79	5	200
13.	Others	11	2	–	2	6	1	22'
	Total ...	318	116	39	76	270	30	849

Source : Schedule data

require State Undertakings to prepare a long-term perspective commodity or service (insurance and airlines for example) programme which could be dovetailed in the national five years or annual plans. Compared to the 15 months of waiting by a matriculate that a third of ITI trainees had to wait for a year is serious and points to an absence of mutual complementarity as between policy elements in planning and to serious deficiancies in manpower planning. The latter could well be attempted at State and departmental levels.

Interval between Jobs

VII.3. Only 31.8 per cent of all the trainees could report brief spells of employment after the initial waiting. The questionnaire was not designed to test the 1961 census finding that tbe would be first entrants who were unemployed far **exceeded** in number those that were waiting for a second or third situation after a successful initial experience. For our purpose however this only shows a preference for work experience among employers. The frictional unemployment of the latter kind traditionally disregarded as of not much moment could become important if it became prolonged and if employers policies had specifically the effect of extending the period of waiting between jobs. There cannot be much unionization among the excluded (claimants union is bidding fair to become a new word in labour economics) but a fourth and further survey by the concerned and competent authority alone can reveal if there is scope to soften what may well amount to restrictive practices. Such a possibility has been highlighted in the recent 20-point programme. While an overall correlation between industrial activity and employment among our sample of ITI trainees has been established in this monograph, adaptability in training practices to increase course content and diversify skills in a single individual in response to market preferences alone can bring about a lasting solution to the problem of the hapless ITI unemployed.

VII.4. It is the specific recommendation of this monograph that self-employment opportunities, which are bound to be limited to begin with should be preferentially provided for ITI trainees who have waited longest for their first situation and who in consequence are bound to be better motivated and more amenable.

CHAPTER 8

PROMOTION OF SELF EMPLOYMENT AMONG CRAFTSMEN TRAINEES

I. It has been noted that the 849 trainees surveyed in this report have had to wait for periods ranging from one to four years for their first job. Driven by poverty and by frustration at the fact that the skills acquired with great diligence and at great expense were unmarketable, they became resigned fatefully to accepting any chance that came along—whether it was beyond their ken or even if it did not call for all their capabilities. They were glad of the chance to be useful, whether it was casual or regular, whether well paid or not. What must be particularly upsetting to the manpower planner is that a very large number of the trainees take up jobs quite unrelated to their training. Unfortunately it has not been possible to estimate their number in the survey. The contribution they make to total employment is thus fortuitous, indeterminate and unpredictable. The trouble is one cannot count on that kind of a job for the future, when ITI skills are not necessary and sufficient for a given job; the next time it may not be an ITI man who gets it.

1.1. Even this opportunity for casual and general employment unrelated to learning achievements seems to be severely limited as the numbers seeking such jobs have gone up steadily during recent years. The market, both the "slumpflationary" market of 1969 and the growth-biased but buyers market of subsequent years has simply not been able to absorb them. As the number of unemployed trainees of the ITIs reported at the conclusion of the survey were around 20,000, not even 1,000, or 5 per cent of the total, could be absorbed in industrial establishments each quarter; the estimated figure for the absorption rate is taken from the Quarterly Review of Employment in Tamil Nadu. For example, during the quarter March-June 1974, vacancies for posts of craftsmen

notified by employers to the Employment Exchanges in the State amounted only to 1,483 and the number placed in employment trough the Exchanges (number of vacancies filled) was still less namely 846, less than 60 per cent of the applicants. In fact, during the previous quarter ending March 31, 1964, only 446 craftsmen bad been found jobs by the Exchanges. For the next quarter **ended** September 1974, the number of vacancies notified was 1,833 representing an increase of 23.6 per cent over the previous quarter but a decrease of 19.9 from 1973 that is, the previous year. Even so, the number actually placed in jobs during the quarter ending September 1974 did not exceed 669, a decrease of 20.7 per cent from the previous quarter. If this depressing trend of low absorption rates for craftsmen in paid industrial employment was all one could expect for the future, it looked as if it would be many years before any thing like the 20,000 unemployed who made up the backlog could be cleared. What is worse, the contemporary output of the 31 ITIs in the State at a steady rate of 7,000 per annum would considerably add to the number and complicate any projected solution. There is something more acceptably self-righteous about the vested interests of an institution as compared to those of an individual but one nevertheless has to guard against their becoming anachronistic. Also changes in commercial technologies can be rapid and abrupt. For the country as a whole, adaptive and intermediate technologies which do not economize on the labour input inordinately are necessary; but they must be made viable. In the market, an antiquated technology is even more dead than a passing mode. Constant adaptive research must therefore be fed back into the 1TI curriculum content. In any case, it is high time to cry halt to this undue and unwanted multiplication of craftsmen in all types of crafts without relation to the actual market demand so that the problem can be cut down to a manageable size. The point would bear repetition as it becomes evident from each new standpoint.

The need for directly controlling the supply has been dealt with and is the easier remedy to think of but it should really come after measures which seek to manipulate demand so

as to increase it moderately to what the economy would beat at any given time.

II. The present survey set out inter alia to discover the reason why the unemployed craftsmen could not and did not take to self-employment, in the absence of opportunities for paid employment as a fruitful alternative to joblessness. This question had to be asked as, even in 1973, fairly liberal facilities for credit, technical counselling and administrative assistance were being provided by the Directorate of Employment and Training and the nationalised banks. They offered to help unemployed craftsmen to set up in enterprises of their own. These unemployed craftsmen were all assumed to possess the skills needed to run their own small enterprises, say, a service or repair shop or an assembling unit but not many of them, not even one per cent among the ITI unemployed, showed any inclination or enthusiasm for availing themselves of these.

II. 1. The answers obtained specifically in response to this query in the questionnaire are too general and vague as most respondents have not bestowed any thought on this possible solution to their troubles In the absence of knowledge of what such enterprise entails, it would be difficult to read too much into their answers, (vide Table 8.22) Yet these unspecific answers, such as they are have been coded and tabulated with a necessary amount of interpretation so that meaningful conclusions may be derived from the schedule Table 7.19 shows a small number (55) out of the total unemployed of 849 who have taken up some type of domestic occupation or set up as small-scale practitioners of the crafts to which they were trained. The highest number of such self-employed is to be found among the fitters, welders, turners and wiremen though their numbers are as yet insignificant particularly in relation to the numbers who still remain unemployed in these trades. For insta ce, out of the 200 unemployed fitters, 15 had taken up work on their own account; likewise eight among the 139 welders, six among the 60 wiremen and another six among the 97 turners are similarly engaged as self-employed craftsmen. Altogether only about six per c«nt of the number surveyed could be treated as self-employ d They achieved this status, however through their own efforts. It is important here to note that such occupations are

not full-fledged service or manufacturing establishments. They are trades pursued on a domestic or cottage scale. Quite often, resort had been had to residual agriculture—the haven and the last resort for the chronically unemployed. Here, a brief conclusion for policy just be emphasized. The magnitude of the unemployment among erstwhile ITI trainees does appear to warrant some retraining either in order to prevent a lapse in to skill-lessness or to update their skills in order to make them marketable and compensate them for their unemployability. Also in the interests of rational man-power planning, an official agency in charge of training and employment would be under some measure of obligation to resettle the unemployed in jobs commensurate with their training. This should be treated as expenditure to consolidate investments already embarked upon.

Preferences and Motivation for Self-Einployed ITI

II.2. Table 7.20. seeks to throw light on the awareness in unemployed craftsmen of credit facilities made available to the would-be self-employed for the purchase of tools, machinery, working capital, etc., both from the Department of Employment and Training and the nationalized banks. Out of 849 unemployed respondents, 501 replied that they were aware of the loan facilities which is incidentally quite a high rate of exposure for these advertisements. More pertinently, what is reprehensible is that the remaining 304 had not even heard of these amenities. There is clearly scope, too for involving trainees at the Institutes, in employment counselling programmes through their students' unions, and employers should be encouraged to send talent scouts to these institutions and publicize job specifications, career prospects and the impact of changing technologies on job content and the appropriate skills needed in the new context. The same effects can be secured in an informal way by engaging job foremen and maintenance engineers from industrial establishments for extramural lectures, etc. at the ITIs.

II.3. Of the 501 trainees who were aware of the existence of these facilities, not even a handful had approached government departments or nationalized banks, public financial institutions, such as

the SIDCO and the TIIC, which are specifically intended to help small entrepreneurs. It is perhaps easier to set up a modest service establishment in a locality where such services are seen to be essential. But for planning a manufacturing unit, trainees would need the services of consultants who can advise them on drawing up a project or review critically the cost and technology assumptions in the production function; assumption on the extent of the market and relative advantages of open sales outlets, alternatively of established distributors; and on procedures for obtaining credit for working capital and loans for fixed assets from State term-lending institutions and the banks. A Jesuit Mission in Bihar has been rendering free consultancy services to would-be self-employed in setting up service or rudimentary manufacturing institutions. [1] State organizations may provide the assistance necessary without taking a too regulatory or normative view of their functions. Another interesting aspect of the trainee's inclination to take to self-employment could be gleaned from the figures contained in Table 8.2 which shows the extent to which trainees are able and willing to invest in self-employment. Out of the 849 unemployed trainees, only 18 declared willingness to invest. Of these eight were willing to invest Rs. 500 or below only; one was willing to invest between Rs. 1,000 and 2,000; five were prepared to invest from Rs. 2,000 to 5,000 and four were willing to invest Rs. 5:000 or more. Those who had means of their own for investments of this magnitude were understandably few and far between, most being unable rather than unwilling to do so. This state of affairs perhaps calls for intensive motivation exercises. *A priori* a good deal can be achieved by an integrated provision of information, motivation and retraining exercises, the organization of credit and assistance facilities through a single agency, preferably a voluntary body.

II.4. An earlier survey conducted by the Directorate of Employment and Training in 1968 has brought out the fact that even those, who had completed apprenticeship courses in industrial eatablishments following their ITI training and had acquired actual job experience over a one-year period or even longer, did not come forward in impressively large numbers to start their own

Economic Times, February 1965 probably the St. Xavier's Institute in Jamshedpur.

enterprises — this even when faced with unemployment, ij'jjjs disinclination was generally witnessed among crafts-pjgn whether apprenticed or not and could not therefore be blamed on them without reference to certain objective cjrcumstances and subjective handicaps. It does seem grossly unfair to blame a craftsman for not being an entrepreneur. On fbe other hand, their abject dependence on Government to provide or find the jobs for them with regular pay and other elements of contractual security is equally difficult to condone.

TABLE 8.19.

Self-Employed in Domestic Occupations and Own Trade

Serial No.	Trade	Yes	No	Total
1.	Moulder	2	21	23
2.	Electrician	4	26	30
3.	Machinist	2	37	39
4.	Draughtsman	2	13	15
5.	Blacksmith	1	36	37
6.	Turner	6	91	97
7.	Wireman	6	54	60
8.	Motor Mechanic	5	102	107
9.	Sheet-metal Worker	2	- 39	41
10.	Carpenter	1	38	39
11.	Welder	8	131	139
12.	Fitter	15	185	200
13.	Others	1	21	22
	Total	55	794	849

Source : Schedule data.

Note : The number of those who are self-employed in domestic and other occupations including crafts was only 55 out of the total of 849. This works out to a poor 7 per cent. This monograph outlines proposals by which this figure could be stepped up to at least 33.33 per cent. A one-third to two. third mix of workers and self-employed accords well with proportions obtaining in other sectors.

[1] *Employment of Apprenticed Craftsmen in Madras State. A Study;* Directorate of Employment and Training, 1968, Madras, see Annexe V. —

TABLE 8.20—Respondents' attitudes to loan facilities for self-employment awareness, willingness, etc.

Serial No.	Trade	Yes	No	Indifferent	Total
1.	Moulder	7	13	3	23
2.	Electrician	18	11	1	30
3.	Machinist	30	8	1	39
4.	Draughtsman	10	5	–	15
5.	Blacksmith	22	13	2	37
6.	Turner	54	37	6	97
7.	Wireman	34	23	3	60
8.	Motor mechanic	63	35	9	107
9.	Sheet-metal worker	26	13	2	41
10.	Carpenter	26	13	–	39
11.	Welder	89	42	8	139
12.	Fitter	111	83	6	200
13.	Others	11	8	3	22
	Total ...	501	304	44	849

Source: Schedule data.

Note : 501 out of the 849 unemployed were aware of state term-lending by the Department of Employment and Training and working capital from nationalised banks were available but this awareness did not lead to initiatives for self-employment due to various reasons dealt within the next.

TABLE 8.21.

Willingness to invest in self-employment enterprises by Respondents

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1. Moulder	—	—	—	—	—	23	—		23
2. Electrician	—	—	—	—		1 2 8	1	—	30
3. Machinist	—	—	—	—	—	37	—	2	39
4. Draughtsman	1	—	—	1	—	13	—	—	15
5. Blacksmith	—	—	—	—	—	36	—	1	37

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
6. Turner					1	91	2	3	97
7. Wireman	3			1	–	56	–	–	60
8. Motor-Mechanic	1		1	1	–	102	1	1	107
9. Sheet-Metal Worker						40	–	1	41
10. Carpenter						39	–	–	39
11. Welder	2	–	–	1	2	132	1	1	139
12. Fitter	1	–	–	1	–	187	3	8	200
13. Others	–	–	–	–	–	22	–	–	22
Total ...	8	–	1	5	4	806	8	17	849

Source: Schedule data.

Note : Out of a total unemployed of 849, only 18, i.e. about 2 per cent of the sample population, were able or willing to invest amounts of money ranging from Rs. 500 to Rs. 5000 in ventures for self-employment.

TABLE 8.22.

Motivation in Unemployed ITI Craftsmen

Serial No.	Trade	WJ[1]' e[e] J[a] quickly	Trade that I like	Advice of Friends	Others	NA	NR	Total
		(1)	(2)	(3)	(4)	(5)	(6)	(7)
1.	Moulder	4	6	2	1	8	2	23
2.	Electrician	10	20	–	–	–	–	30
3.	Machinist	12	18	1	3	4	1	39
4.	Draughtsman	7	8	–	–	–	–	15
5.	Blacksmith	4	9	8	12	3	1	37
6.	Turner	35	58	–	2	1	1	97
7.	Wireman	15	34	–	4	6	1	60
8.	Motor-Mechanic	34	69	–	1	3	–	107
9.	Sheet-metal Worker	14	7	–	8	12	–	41
10.	Carpenter	9	11	2	12	4	1	39
11.	Welder	53	53	–	17	15	1	139
12.	Fitter	97	89	1	3	8	2	200
13.	Others	2	8	—	4	8	—	22
	Total	296	390	14	67	72	1(1	849

Source : Schedule data.

Note :— 686 trainees out of a total of 849 had chosen the trades they did either because they hoped that jobs would be obtainable easily or because they felt a marked predisposing preference for these trades. It is observed that only about 50 per cent of the sample population of the trainees chose the trade according to their preferences. Others were influenced by other considerations not necessarily all objective.

A Case Study of Motor Mechanics

II. In this case study, motor mechanics were interviewed regarding their reaction to the prospects of self-employment and the assistance they might require and legitimately expect. All the four trainees were borne on the live register of the Employment Exchange at Nandanam as unemployed and had undergone the course for motor mechanics in the ITI. They were aged around 23 years. One of these had passed the ITI course in July 1972, had worked as an apprentice in the Pallavan Transport Corporation for a period of two years but became unemployed on December 12, 1974. He had registered with the Employment Exchange as early as 1972 and he was yet to be placed. Another passed the motor mechanics course in July 1972 and his apprenticeship was completed on March 12, 1975. He too registered with the Exchange in 1972 and is still waiting to be placed. A third passed out in July 1974, had his name put down in the Exchange Register on April 27, 1974 but did not even get the chance to serve an apprenticeship unlike his compeers. The fourth passed out from the ITI in July 1973, was undergoing apprenticeship since March 1974 and registered with the Employment Exchange in 1974.

III.1. All these, who have been trained in the motor mechanic course in the ITIs and are still unemployed, expect to be absorbed in the road transport corporations or in industries manufacturing automobile vehicles or components. Asked about their willingness to take up self-employment in a small enterprise owned by them, they replied that they were handicapped by the non-availability of loan finance at moderate rates of interest. Service stations for automobiles entail an initial investment of Rs. 10,000, whereas the Directorate of Employment offers each trainee assistance up to a maximum of Rs. 5,000 only. As for

the loan assistance available from the nationalized banks, the 15 per cent rate of interest charged by them was beyond the earning capacity of the enterprises they contemplated. They were doubtful if they could pay more than 10 per cent interest on loan capital. Owing to the recent cut-back in the production of the higher priced automobiles, the rising prices of petrol and the free availability of motor spares, State effort may be necessary to foster and promote second-hand trade in automobiles for which service shops are a necessary condition. This may have to be considered as an incentive necessary to attract craftsmen trainees in greater numbers into self-employment. As a general recommendation, flourishing **Second**-hand trade in consumer durables backed up by good repair and service shops promotes (rather than hindering as popularly supposed) the sale of the corresponding new goods on an organized basis. This is yet uncharted territory in India full of promise for young ITI entrepreneurs.

111.2. Attitudes to Self-employment: This is of course part of a general and widespread hesitation on the part of ITI trained craftsmen to take up self-employment for reasons that are both subjective and objective. The reasons are listed below.

111.3. Subjective reasons : (1) The ITI trainees are normally young and inexperienced ; this is particularly true in the case of entrepreneurial skills and business management. Their average is around 20 years and they often lack the confidence and the maturity required to manage independent enterprises based on risk capital. Those concerned in the Labour and Employment Department the financinginstitutions,agencies responsible for term-finance and departments responsible for industrial regulation and licensing are all unanimous in this regard. They are convinced from first-hand experience that unemployed ITI trained craftsmen without previous job experience cannot be expected to possess the technical and managerial competence which are both necessary in self-employment to a greater degree than even in the most skilled job situations.

(2) The present curricula and syllabi for the ITI training in crafts impart only technical training in chosen trades and do not include any instruction in entrepreneurial skills. In the result, the trainees lack elementary knowledge of business techniques and

processes like raising finance,accounting, purchase and optimization of inventories and marketing. This ignorance often stands in the way of their setting up in owned business ventures.

(3) A good number of the craftsmen were to begin with"forced" into training for which they had neither the liking nor the aptitude. This choice is often dictated by market preference for 1TI trades and skills, inter-trade vacancies in the ITIs at the time of admission and the cost and duration of the course, etc. in relation to what trainees can afford by way of time and money. Hence, in trades, in which they lack full competence for want of aptitude, they prefer employee status to self-employment. As stated before, some of them are indeed known to take up jobs in trades other than their own due to the above considerations.

III.4. Objective reasons : (1) The present loan facility of Rs. 5,000 offered by the Department of Employment and Training for purchases of tools and instruments to craftsmen who intend to take up self-employment has been found to be insufficient to start a service and repair shop or even a small workshop for which the absolute minimum required now is said to be around Rs. 10,000. Trainees are often unable to put up the Rs. 5,000 which they are presently required to find as a matching contribution. Hence the ITI-trained craftsmen have not availed themselves of this loan facility in any large numbers.

(2) The mere availability of finance is not enough to induce craftsmen trainees to start owned enterprises. The nationalized banks are reported to apply strict criteria to judge applications for working capital, and their interest charges are said to be much higher than the ability to pay of would-be self-employed ITI craftsmen. Some relaxation in these respects would be necessary if the Department of Labour and Employment is to treat the setting up of ITI trainees in self-employment as planned action deserving of high priority.

(3) The difficulties experienced by the small entrepreneurs already in business, who have had even to shut down for short spells in some cases due to shortages of finance, raw materials, power and working capital have been noted by the craftsmen trainees. The deteriorating climate for self-employment (the

proportion both in the State and country of owned proprietorial units which have made good) has been another deterrent factor.

(4) A critical factor which ultimately determines whether a craftsman successfully takes up self-employment is the availability of the rightkind of guidance and market consultancy. Even where all other forms of assistance are available, the absence of this factor might result in failure. This has happened in the case of many degree-holders in engineering and technology. How after all may we expect the craftsmen who find themselves on the lowest rung of the entrepreneurial ladder to do without such help ? This should be taken into account by those concerned before self-employment is proferred hopefully as a solution to our ills.

CHAPTER 9

RECOMMENDATIONS

The suggestions contained in this chapter are re-stated from the foregoing discussion where they were originally made in appropriate contexts. In some cases, mutually exclusive considerations point the same conclusion in which case there has been noticeable repetition. A conspicuous example is the proposal for self-employment assistance to those among the educated unemployed who have at some stage received training at the Industrial Training Institutes; another relates to the variation of in-take-capacity and of trade-mix for industrial training taking into conside ration short-term variations in market demand for craftsmen. Both in the programmes for surveys and assistance, the recommendations cite the appropriate administrative or executive authority; the Department of Labour and Training, entrepreneurs in the private sector and public sector executives, the nationalized banks, term-lending financial institutions, the Employment Exchanges and the authorities in charge of the Industrial Training Institutes. Chapter and para numbers serve to fix substantive references to the recommendations as they have been made each in its context.

Chapter 4, para V.2. Efforts should be made by the Department of Labour and Training in the State Government to analyse the actual placements of trained ITI craftsmen in new industries and job requirements associated with them. Attempts should concurrently be made to differentiate the content of ITI training in consultation with employers. A demand survey to find out from the Employment Exchanges and principal employers in cities, towns and the districts including prospective ones and their disaggregated needs of skilled craftsmen over a time perspective is clearly indicated. This recommendation has been elaborated in the paragraphs that follow. Vide also Chapter 5, para II. 1; Chapter 6. para 1.5; Chapter 9, para 1.2.

Chapter 4, para VI. 1. Another indicator of a desirable rate of admission is provided by contemporary rates of admission to engineering colleges and polytechnics which perhaps measure fluctuations in demand and industrial growth a trifle more accurately and readily. The prototypical formulae for the optimum proportions as between engineers, technicians and production process workers currently in use in education and training departments of government in order to arrive at another figure for checking optimum intake figures, both the total as well as those for individual trades provide another guide. The objective should be to arrive at a desirable balance between the supply and demand of craftsmen. Here one is dealing with demand figures, which are really contemporary estimates of future demand and not the future demand itself. These estimates would naturally vary with the time perspective.

Para VII. Employers, associated for the moment as industry-wise groups rather than as individual firms, should, in their own interests, sit down and think out a training policy well ahead of actual recruitment and communicate their job specifications and preferences to the ITIs. The association of employers in industrial training was also recommended by the National Committee of Science and Technology, the Union Planning Commission and the Task Force of Science and Technology of the State Planning Commission.

The survey made towards the end of 1973 revealed that it was in the trades of the general fitter, the welder, the motor mechanic and the turner that admissions to the ITIs ought to be restricted; also machinists, wiremen, sheet-metal workers and electricians. A word of caution should perhaps be added here that a successful man-power planner will not trim his sails to every passing wind. To the disaggregated needs of skilled labour from private employers as computed over a period of time must be added the numbers of the self-employed craftsmen who can be set up in business on their own. During 1964-73, public sector recruitment was found, on the whole, to be more organized; it evidenced a secular rate of growth during the period under review regardless of indices of over-all industrial production, business expectations and the demand for craftsmen of all kinds in the rest of the market. All the above considerations taken together

might however, entail the expansion of some ITI courses, the restriction of admission to others and the opening of new courses of training according to the ascertained needs of all employers and according to patterns of emergent industrial growth.

Chapter 7, para. IV. The recommendations in this section are made specifically in the light of survey data. In the age-group, 26 to 30 years, the 255 unemployed in the sample of 849 amounting to 30 per cent of the total presumably never held a situation in a job-seeking spell of 10 years. This monograph argues that this is nothing short of a social tragedy in the micro-cosmos. The Department of Labour and Training should perhaps accord the finding of employment for these persons a special and high priority.

Chapter 7, para V. The unemployed in the age groups 26-30 years and 31-40 years put together number 285 out of the sample total, amounting to 33.5 per cent. These older persons must evidently possess higher levels of maturity, experience and self-confi. dence which must add to their employability and their capability to avail themselves of aid and incentives provided by the financial institutions or nationalized banks for purposes of self-employment.

Para VI.2. The fact that 7.4 per cent of the sample found jobs through the Exchanges suggests many recommendations: (i) need for improvement of the coverage and reporting systems of the Exchanges and their extension to district towns so that they may serve rural areas, transcending rather than displacing the private contact system; (2) measures designed to popularize Exchanges with employees and employers alike. This should be preferred to making consultation mandatory so that occupational and regional mobility of labour are facilitated and through these, promotion of a national market. Another monograph in this series, published by the Madras Institute of Development Studies, and entitled. *Rural Employment in Tamil Nadu,* has suggested the extension of the employment exchange service to the smaller district towns so that they might cater more effectively for the needs of landless labourers as also to the migrant intra-rural labour force ; (3) for this purpose the Exchanges require a more comprehensive organisation.

VI. 3. Compared to the 15 months of waiting for the first

j0b, that the ITI craftsmen had to wait for a year is serious and points to an absence of complementarity as between different policy elements in planning as also to serious deficiencies in man power planning. The latter could well be attempted at State and Departmental levels.

The value of systematized but decentralized information systems has not been adequately realized by those in particular for whose benefit it is meant and who ought to avail themselves of it. The readiness with which such information can be drawn upon to meet individual requirements, their definitiveness and accuracy can be greatly improved but will come about with the growing exactness of clientele requirements. Increased outputs (here, successful placements) owe as much as to sound information systems as they do to improved technology. In the agricultural sector in developing countries, for instance, it has been shown that there obtains a greater degree of correlation between increases in output and a sound extension system.

Chapter 8 1.1. Given its stage of development, this country requires the retention of intermediate technologies, where they exist already and are time tested, and their progressive adaptation to changing conditions is necessary. On the other hand, an antiquated technology is even more dead than a passing mode particularly where older and more recent technologies co-exist through price differentials. The results of constant adaptive research must therefore be fed into ITI curriculum content in that even intermediate technologies can be updated or modified so that the country as a whole can effect the transition to a higher from a lower technology at will and at the time of its choosing. The need for controlling the supply of craftsmen is easier to think of but that should really come after measures which seek to manipulate demand and make supply more responsive over a wider range.

II.2. III.3. The magnitude of unemployment among erstwhile ITI trainees does warrant some re-training in order to prevent a lapse into skill-lessness or to update craftsmen skills; in order to make them marketable and compensate them for their unemployability. The unemployed should, in so far as it is possible, be found jobs commensurate with their training. This should be treated a

expenditure necessary to consolidate investments already embarked upon (also Chapter 8, para IV. 1). An increase in the general educational equipment of ITI trainees without prejudice to the language of instruction has not been specifically recommended in this monograph. However, the issue arises out of the foregoing recommendation and the objective could be achieved in either of two ways: i) either by stepping up compensatory instruction in general education in the ITI courses ; ii) while, to some extent (i) would be unavoidable, it may not be feasible to dissipate course time in this fuuction, thereby detracting from the purpose of the course. A proper solution to this difficulty must await the stepping up of the standard of scientific instruction at the middle and secondary-school levels. The monograph has accordingly recommended the restructuring of ITI curricula to enable these technical institutions to offer compensatory and sandwich-type courses for passed-out trainees and more eflectively to alternate workshop experience with class-room instruction in current ITI courses. Both these measures would serve to inspire confidence and foster maturity in passing-out trainees. To implement recommendations regarding (a) trade-wise redistribution of admission strength; (b) the introduction of new trades for training and the replacement or the updating of obsolescent courses of study ; (c) the constant re-estimation in the present, and projection of demand, likely to arise in the future so as to fix admission strengths; (d) the revision of the curriculum and course content generally and (e) the estimation of fresh demand in new as well as in small-medium-sized industries and of private employers generally in a variety of trades should be vested in a special cell which would be concerned with maintaining the value of ITI training and which would act as friend, philosopher and guide to the ITI trainees. Such a cell can take on counselling work for students in the training institutes both in regard to choice of trade and choice of employment and mediate, if necessary, with the Employment Exchanges to urge the special sectoral claims of ITI trained craftsmen. The head of this organisation should preferably be a management consultant drawn from the private sector, and the cell itself could be located in the Department of Labour and Employment.

Such an organization could encourage talent scouts of employers to publicize job specifications and career prospects, the impact

of changing technologies on job content and appropriate skills needed in a new context. The same result could be secured in a no informal way by engaging job foremen and maintenance engineers from industrial establishments for extra-mural lectures, etc., at the ITIs. *A priori,* a good deal can be achieved by the integrated provision of information, motivation and re-training exercises. Voluntary bodies are well-equipped for these functions, and they should be encouraged to continue their work with financial assistance from the Government.

The nationalized banks are reported to apply strict criteria to judge applications for working capital, and their interest charges are said to be beyond the ability to pay of would be self-employed ITI craftsmen. Some relaxation in these respects would be necessary if the Department of Labour and Training is to treat the setting up of ITI trainees in self-employment as planned action deserving of high priority.

Imports, scarce materials and finance should be available to would be self-employed ITI craftsmen on easy terms. Nationalized banks and Government controlled term-lending institutions should charge reasonable rates of interest on loans of around ten percent. A higher rate would jeopardize the financial viability of enterprises of this size.

The cell in Department of Labour and Employment should assist unemployed ITI craftsmen to organize themselves into associations or co-opsrative organizations (rather than into proprietorship concerns). Groups of craftsmen can function more confidently and successfully. They could for instance set up garages, turning and grinding shops, welding or carpentry trades. Lines of production could be integrated so that they could render a package of services. Their selling, purchasing, management and establishment costs could be shared for the sake of economy and higher productivity. From the point of view of the economy, joint functioning could be valuable and lead to better results than individual entrepreneurship. As a skill the last-said is rather difficult to come by in this State at the present time and training is necessary. Unfortunately it also happens to be a rather underrated skill. That the Department of Labour and Employment are thinking on the lines of this recommendation is borne out by

the fact that the Government of Tamil Nadu have set up a number of Domestic Repair and Service centres to provide gaipf$_{u}$j employment to craftsmen in Madras city and the important **towns** of Tamil Nadu, Another activity in which there exists scope for such centres is the fabrication of iron and steel structures. Chapter 8 of the monograph has argued in detail for State assistance in finding avenues for self-employment of ITI-trained craftsmen.

This monograph has recommended a re-distribution from time to time of craftsmen trainees as between trades without a reduction in the aggregated number of trainees to ITIs or passing out from them each year. The present bias in favour of mechanical engineering skills in preference to middle-level technologies in electronics, electrical trades, skills associated with the mechanization of agriculture, with protected water supply, sanitary and public health engineering should be corrected. Course content in ITIs should be so designed so that they could be systematized and learnt in on-the-job training in a foreseeable manner. For i nstance, some of the training now imparted in certain trades is better left to the employers or industries themselves to attempt. Boiler attendants can be better trained in establishments using their services than in the ITIs. Employers' current obligation under the law to train apprentices and then to employ them must be used more imaginatively to the added benefit of both employer and trainees. In addition to the foregoing recommendation, the ITIs themselves should set up production centres under their control so that (I I workshop experience could be simultaneously provided for trainees on the premises and (2) ITI-trained craftsmen who hdva successfully completed their training but whose services remain unutilized could be employed in them. To begin with, production maintenance and repair could be attempted in those trades in which the ITI offers courses of instruction.

ANNEX I

Apprentices Act 1961: Designated Trades and Qualifications.

1	2	3	4	
1.	Fitter	1	7 3 years	Should have studied up to two standards below the Matriculation or an equivalent examination or three standards below the Higher Secondary Examination.
2.	Turner	1	7 3 years	
3.	Machinist (Miller)	1	7 3 years	
4.	Machinist (Grinder)	1	7 3 years	
5.	Machinist (S. S. P.)	1	7 3 years	
6.	Pattern maker	1	7 3 years	
7.	Moulder	1	7 3 years	
8.	Blacksmith	1	7 3 years	
9.	Sheet-metal Worker	1	7 3 years	
10.	Welder (Gas and Electric)	1	7 3 years	
11.	Electrician	1	7 3 years	Should have passed the Matriculation or equivalentexamination or passed the 10th class which is one class below the Higher Secondary Examination.
12.	Lineman		7 3 years	Should have studied up to two standards below the Matriculation or equivalent examination or three
13.	Wireman		7 3 years	
14.	Carpenter		7 1 3 years	
15.	Plumber		3 years	

16. Brickmason/Building Constructor	1 : 7	1 year	standards below' the H igher Secondary Exa. mination.
17. Brick-layer	1 : 7	1 year	A pass in the Primary Section (5th class).
18. Millwright Mechanic (Maintenance)	1 : 2	4 years	Same as for Trade Number 11.
19. Mechanic (Textile Machinery)	1 : 7	3 years	
20. Mechanic: Maintenance (Chemical plant)	1 : 7	3 years	Same as for SI. No. 11 with Science as one of the subjects.
21. Mechanic (Dairy Maintenance)	1 : 7	3 years	Should have passed the Eighth class or two classes below the Matriculation or an equivalent examination.
22. Tool & Diemaker	1 : 2	4 years	Same as in SI. No. 20 above.
23. Mechanic (Instrument)	1 : 3	3 years	
24. Mechanic (Refrigeration and Airconditioning)	1 : 3	3 years	
25. Mechanic (Motor Vehicle)	1 : 4	3 years	Same as in SI. No. 1 to 10 above.
26. Mechanic (Diesel)	1 : 4	3 years	
27. Mechanic (Tractor)	1 : 3	3 years	
28. Mechanic (Earth-moving Machinery)	1 : 1	3 years	
29. Draughtsman (Mechanical)	1 : 10	3 years	Should have passed the Matriculation or an equivalent examination or the 10th class which is one class
30. Draughtsman (Civil)	1 : 10	3 years	
31. Surveyor	1 : 14	3 years	

			below the Higher Secondary Examination. Should have had Science and Mathematics as elective subjects.
32. Fitter (Structural)	1 : 5	3 years	Should have passed the Matriculation or an equivalent examination. Should have studied Science and Drawing.
33. Boiler Attendant	1 : 2	3 years	Same as in S. No. 20 above
34. Hand Compositor	1 : 7	3 years	Should have passed the Matriculation or equivalent examination with proficiency in English and the regional language.
35. Lino operator	1 : 7	3 years	
36. Mono operator	1 : 7	3 years	
37. Mono caster	1 : 7	3 years	
38. Letterpress Machineman (Platen and Cylinder)	1 7	3 years	Should have passed the final examination of Eighth class which is two classes below the Matriculation or its equivalent and 3 standards below the Higher Secondary Examination.
39. Process Cameraman	1 : 5	3 years	Should have passed Matriculation with Physics & Chemistry.
40. Retoucher (Lithographic)	1 : 5	3 years	
41. Engraver	1 : 5	3 years	
42. Book-binder	1 : 5	3 years	Same as in SI. No. 38 above.

43. Cook (General)	1 : 5 and one more for each Ten	4 years	Should have passed the Matriculation or equivalent examination or the 10th class which is one class below the Higher Secondary examination or selected from trade with working knowledge of English.
44. Steward (Dining Room)	„	3 years	Should have passed the 7th class or 3 classes below the Matriculation or its equivalent
45. Steward (Floor)		3 years	
46. Baker & Confectioner	„	4 years	Same as in SI. No. 43 above.
47. House Keeper	„	3 years	Same as in SI. No. 11 above.
48. Hotel clerk/ Receptionist	,,	3 years	
49. Weaver	1 : 100	6 months	Same as in SI. No. 44 and 45.
50. Doffer-cum-piecer	1 : 100	6 months	A pass in the Primary Section (5th class)
15. Tenter (Drawing and Speed/fly frames)	1 : 50	6 months	A pass in the Primary Section (5th class).
52. Steam Turbine Operator	1 : 4	3 years	Same as in SI. No. 11 above.
53. Switchboard Attendant	1 : 4	3 years	
54. Attendant (Operator)	1 : 10	3 years	Should have passed the Matriculation or equivalent examination or the 10th class which is one class below the Higher

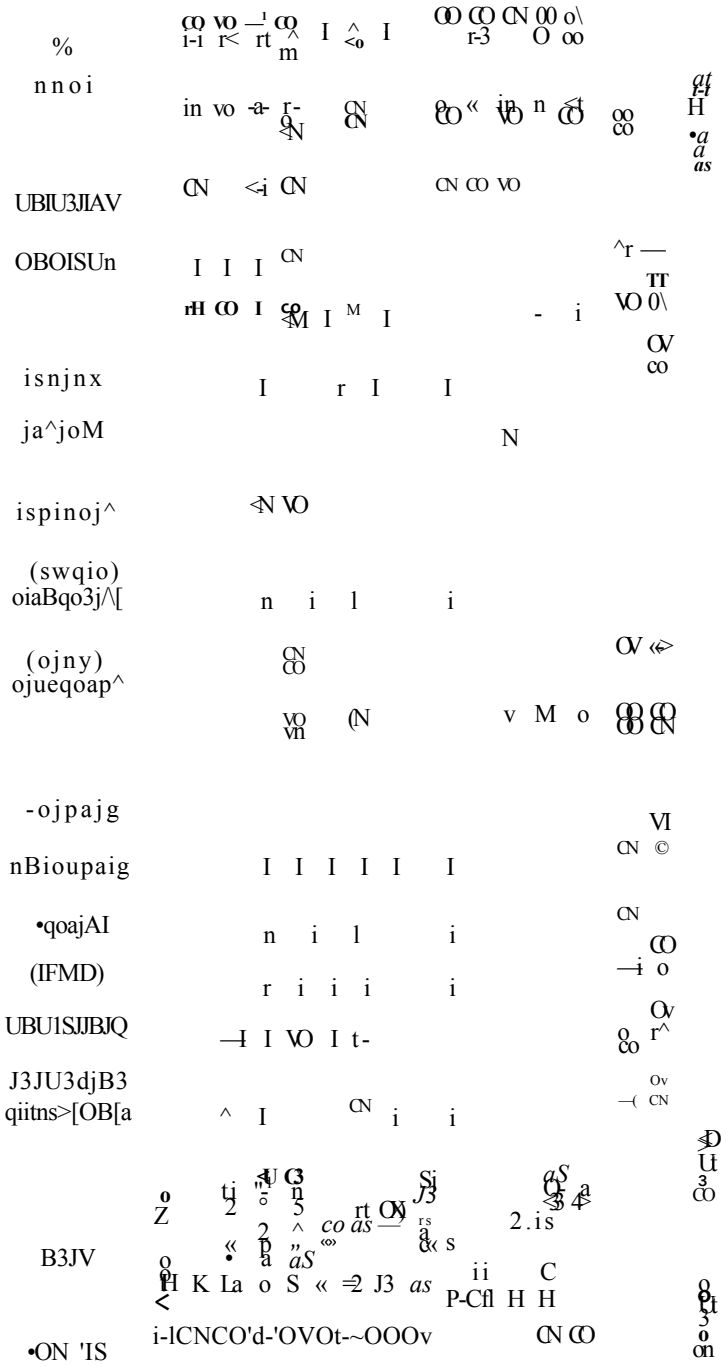
			Secondary Examination with Physics, Chemistry and Mathematics.
55. Instrument Mechanic (Chemical)	1 : 3	3 years	Should have passed the Higher Secondary Examination or its equivalent, with Phy. sics, Chemistry and Mathematics.
56. Laboratory Assistant	1 : 4	3 years	
57. Book-keeping & Accountancy	1 : 4	1 year	Should have passed the Higher Secondary examination, with Commerce as special subject.
58. Cashier (General)	1 : 2	1 year	
59. Store-keeper (Including Purchaser)	1 : 4	1 year	
60. Sales Assistant (General)	1 : 7	1 year	Should have passed the Higher Secondary Examination.
61. Clerk (General)	1 : 20	1 year	

I

ANNEX II

LIST OF ITI CENTRES AND THEIR LOCATION

1. ITI, Guindy, Madras 32, 5 trades
2. ITI, Ambattur, Madras 53, 18 trades
3. ITI, (North), Madras 21, 14 trades
4. Stree Seva Mandir, Madras 17, 7 trades—for girls only
5. ITI, Chingleput, 9 trades
6. ITI, Vellore 10, 11 trades
7. ITI, Thiruvannamalai, 6 trades
8. ITI, Cuddalore, 6 trades
9. ITI, Ulundoorpettai, 6 trades
10. ITI, Salem, II trades
11. ITI, Mettur Dam, 6 trades
12. ITI, Osoor, 8 trades
13. ITI, Coimbatore, 15 trades
14. ITI, Dharapuram, 6 trades
15. ITI, Erode, 6 trades
16. ITI, Coonoor, 7 trades
17. ITI, Tiruchirapalli, 14 trades
18. ITI, Ariyaloor, Tiruchy District, 9 trades
19. ITI, Pudukottai, 6 trades
20. ITI, Thanjavur, 8 trades
21. ITI, Nagapattinam, 7 trades
22. ITI, Madurai, 17 trades
23. ITI, Dindigul, 6 trades
24. ITI, Theni, 7 trades
25. ITI, Virudhunagar, 6 trades
26. ITI, Paramakudi, 6 trades
27. ITI, Karaikudi, 7 trades
28. ITI, Tirunelveli, 7 trades
29. ITI, Tiruchendur, 9 trades
30. ITI, Tuticorin, 6 trades
31. ITI, Nagercoil, 6 trades



ANNEX IV. Tradewise Distribntion of Madras Unemployed ITI Craftsmen, 1964

1. Arcot, North	1	6	7	–	1	2	10	1	–	2	–	2	7	–	8	47	7.6
2. Arcot, South	4	–	–	–	1	–	3	–	—	9	–	2	8	–	12	39	6.4
3. Chingleput	1	19	2	4	2	–	11	7	–	5	7	1	23	–	12	94	15.3
4. Coimbatore	—	–	–	–	–	–	11	5	–	1	–	–	1	–	2	20	3.3
5. Kanyakumari	1	7	5	1	–	5	21	14	–	6	–	1	16	3	27	107	17.5
6. Madras	—	–	–	–	2	–	3	1	2	1	–	1	7	–	–	17	2.7
7. Madurai	3	10	–	–	5	–	24	21	–	17	4	6	5	2	22	119	19.4
8. The Nilgiris	—	2	–	–	1	–	–	–	—	–	1	–	2	–	4	10	1.7
9. Ramanatha-puram	—	2	–	–	–	–	–	2	–	2	–	–	–	–	–	6	0.9
10. Salem	—	1	–	–	1	–	5	7	–	–	1	1	–	–	3	19	3.2
11. Thanjavur	—	2	–	–	–	–	1	2	–	3	–	1	1	–	4	14	2.2
12. Tiruchirapalli	2	2	–	1	5	–	10	4	1	2	3	8	8	–	7	53	8.6
13. Tirunelveli	—	3	–	–	–	–	16	7	–	8	–	12	9	–	14	69	11.2
	12	54	14	6	18	7	115	71	3	56	16	35	87	5	115	614	
	2.0	8.8	2.2	1.0	2.8	1.1	18.8	11.2	0.5	9.1	2.7	5.9	14.2	0.9	18.8	–	100.0

Source: Departmental Survey, 1964, Op.cit.

ANNEX V

ITI Craftsmen Passing Out and Absorbed in Employment, 1964-67

	1964		1965		1966		1967	
	Number passing out	Number employed	Number passing out	Number employed	Number passing out	Number employed	Number passing out	Number employed
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1. Wireman	346	160	714	287	433	186	424	99
2. Fitter	573	281	1359	614	928	313	1087	183
3. Motor Mechanic	232	83	562	157	279	105	530	55
4. Draughtsman (Civil)	89	64	119	50	66	28	63	21
5. Draughtsman (Mechanical)	76	58	124	51	56	18	62	9
6. Electroplater	31	26	46	40	32	18	32	10
7. Welder (Gas & Electrical)	213	84	631	239	447	108	859	82
8. Electrician	84	26	256	96	163	40	182	13
9. Radio Mechanic	30	19	29	19	22	4	41	–
10. Wireless Operator	28	2	37	–	13	–	33	–
11. Machinist	135	60	416	203	257	114	367	94
12. Turner	249	115	717	333	511	168	538	65
13. Blacksmith	31	11	117	37	105	19	144	21
14. Instrument Mechanic	38	22	42	13	50	11	148	7
15. Moulder	116	55	208	129	154	69	235	53
16. Sheet-metal Worker	80	23	215	55	153	54	338	51

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
17. Carpenter	78	36	159	61	87	44	129	40
18. Plumber	2	2	9	8	24	5	39	2
19. Pattern Maker	46	7	84	40	36	10	21	5
20. I.C. Engine Mechanic	–	–		–				
21. Refrigeration Mechanic	6	6	23	14	19	4	24	16
22. Watch-repairer	–	–	10	10	–	–	10	1
23. Painter	–	–	–	–	13	1	27	–
24. Grinder	–	–						
25. Building Constructor	–	–	–	–,	–	–	12	2
26. Diesel Mechanic	–	–	–	–	–	–	26	–
Total ...	2,485	1,140	5,887	2,456	3,848	1,319	5,371	829

Source: Information furnished by ITI Principals.

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