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Rural Industries in Thailand

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April 1985

I. INTRODUCTION

1.1 Objective of the Study

It is well known that industrial activities in Thailand are highly concentrated in Bangkok and its surrounding provinces in the Central region. The concentration of industrial activities has created several social and economic problems including uneven income distribution among regions, and congestion and pollution in Bangkok and its nearby provinces. Since the early 1970s, the government, aware of the imbalance of industrial growth, has attempted to disperse industrial investment to other regions, but without much success.

Notwithstanding the heavy geographical concentration of industrial location, there exists a wide variety of industrial activities that are mainly located in rural areas and provincial towns. The existence and growth of rural industries can contribute much to income and employment generation in provincial areas, and can also contribute toward the alleviation of over congestion of industrial activities in Bangkok and its surrounding provinces. It is thus interesting to look into the characteristics and growth potential of the provincial industries, as well as problems encountered by them, and identify the factors which foster or hinder the growth potential of these industries, so that policy implications can be drawn to assist the attempt of promoting industrial growth in provincial areas.

Over the past 7-8 years, several studies on small and medium scale industries have been carried out including a nation-wide survey of modern small and medium scale industries in 1976 (SMI study). 1/ These studies have provided some interesting data on small scale industries in Thailand's rural areas. The present study attempts to provide a partial update of the SMI study in 1976 on a smaller, but still representative sample which would focus on certain important issues. This would be an indication of whether substantive change have occurred since 1976, and if so, in what areas. A complete follow-up of the SMI study is under consideration at a future date.

1.2 Data Sources

The data presented in this report are mainly obtained from a sample survey of industrial enterprises located in provincial areas. The sample covered about 200 firms in the upcountry areas of Thailand equally divided among the four regions. Industrial enterprises located in Greater Bangkok 2/ were excluded from the survey. In each region, four provinces were selected, two of which were those covered in the SMI survey in 1976. The factory listings of the Factory Control Division of the Ministry of Industry were used as the sampling frame. Firms were selected randomly with the imposed constraints as follows:

1) Each firm must employ less than 200 employees 3/
according to the following postulated distribution:

<u>Employment Size</u>	<u>Percentage</u>
Less than 10	10
10 - 19	30
20 - 49	30
50 - 99	20
100 - 199	10

2) As much as possible, firms were selected from various industries.

3) Rice mills were excluded from the sampling.

Originally, the two provinces other than those covered in the 1976 survey were to have been the less developed areas of the region. However, upon inspection of the factory listings, insufficient firms were located in these less developed provinces to constitute a sampling frame. More developed provinces thus have to be chosen. The following provinces were included in the sampling frame:

Central : Samut Sakorn, Ratchaburi, Ayudhaya, Saraburi.
 North : Chiangmai, Nakorn Sawan, Lampoon, Pichit.
 Northeast : Nakorn Ratchasima, Khon Kaen, Burirum, Udorn Thani.
 South : Songkla, Trang, Surat Thani, Ranong

As of the end of 1993, there were a total of 91,223 factories registered with the Factory Control Division. About half of these factories were rice mills. Factories required to register are those

with seven or more employees, or those which use machinery of two or more horsepower, and thus exclude a large number of very small enterprises. The number of registered factories in the 16 provinces selected in this study totalled 21,190 factories in 1983, but 12,834 or 60.6 percent of them were rice mills. When rice mills were excluded, the 200 firms selected for this study comprised 2.4 percent of the 8,356 registered factories in the 16 provinces. The number of industrial establishments in these selected provinces is shown in Table 1.

Due to time constraint, a classification of firms listed at the Factory Control Division according to different sizes of employment for 1983 was not made. An enumeration made for registered factories (excluding rice mills, saw mills, ice-making and printing firms) as of the end of 1980 in Table 2 could, however, roughly reflect the size distribution of industrial establishments in different regions for the 1983 factory listings, which were used as our sampling frame.

The questionnaire of the survey was divided into 8 parts as follows:

- 1) Profile of the firms
- 2) Background of the entrepreneur
- 3) Production and capacity utilization
- 4) Marketing
- 5) Employment

- 6) Raw materials
- 7) Constraints to growth
- 8) Finance

The field survey was conducted by Deemar Company during June and July 1984. The respondent of the survey would have to be the owner or manager of the firms. In some rare cases, the factory or plant manager could be substituted if he were sufficiently qualified or if the owner were not responsible for the short and long term operation of the firm. The total number of firms contacted for interviews was 361, and the number of firms which responded to the survey was 208. Consistency checks were made during the field survey. In cases of inconsistency as well as missing information, a recheck of data with the respondent was made. Consistency checks were also made after the field survey and eventually 201 firms were selected for the study. However, not all questions were answered by these firms and the results of the survey were reported in accordance to the answers supplied.

1.3 Organization of the Report

Following this introduction, Section II will describe the profiles of the sample firms and their entrepreneurs. Section III analyses the structure of production and marketing, growth trend, and problems of marketing. Section IV investigates the structure and problems of employment and raw materials. Section V looks into the factors which constrained the growth of firms, particularly regarding

the problem of financing, and the attitude and opinion of small industrial entrepreneurs toward governmental assistance to small industries. The final section provides some conclusions and policy recommendation together with suggestions for further studies.

As much as possible, the results obtained from the present study will be compared with those in the SMI study. It should, however, be stated at the outset that the SMI study was much more comprehensive than the present study. This study is only a partial update of the SMI survey. In addition, the SMI study included Bangkok and also concentrated in rather well developed provinces in each region, where a variety of industrial activities existed. The present study, while covering some provinces surveyed earlier by the SMI study, also incorporated some of the less developed provinces in each region. The industrial coverage as well as the average size of firms in this study is thus smaller than that covered in the SMI study.

As most of the firms responding to the survey in this study consisted of those with less than 100 employees, the results of the present study may be considered as mainly reflecting the characteristics of small enterprises, and some of the medium-scale enterprises. In this study, we will define small-scale firms as those with less than 50 employees. Comparison of various characteristics and problems of surveyed firms will be made by considering the differences in employment size, industry, region, and market orientation. There are 5 employment-size groups: less than 10, 10-19, 20-49, 50-99 and 100 and over. The classification of market

orientation is made to differentiate firms with export sales and those which sell their products to the domestic market which is further broken down into "Bangkok" and "local". A firm with any amount of export sales will be considered as an exporter. Similarly, a (non-exporting) firm which sell its product to Bangkok at any amount will be put under "Bangkok" as their market orientation. The rest of the firms are considered as local-market oriented.

II. FIRM AND ENTREPRENEUR PROFILE

2.1 Profile of the Sample Firms

Table 3 presents the distribution of firms responding to the survey by industry and size of employment. There were 74 firms with less than 10 employees and only 7 firms with more than 100 employees. Altogether, 170 firms or 84.6 percent of the responding firms were in the small scale category with less than 50 employees. According to industrial distribution, food processing has the largest number, followed by non-metallic products (including pottery), fabricated products and machinery, wood products, and textiles and wearing apparels.

The regional distribution of sample firms is shown in Table 4 (by industry) and Table 5 (by employment size). The sample firms were distributed evenly among the four regions. Firms in the North were almost entirely of the small scale category and concentrated mostly in the groups with less than 10 and between 10 to 19 employees, while medium and larger sized firms were relatively more widespread in the South as compared to other regions.

Since the sample size of our survey was rather small, the distribution of sample firms in various regions might not reflect the actual distribution of firms in terms of industry coverage and size in each region. In the 1976 survey, it was found that food, textiles,

non-metallic mineral products (including pottery), fabricated metal and machinery, wood products, and repairing of motor vehicles were among the more important industries in regions outside Bangkok. Industrial firms in the Central provinces (besides Greater Bangkok) were mainly those producing textiles and non-metallic mineral products. In the North, tobacco and pottery were dominant. In the Northeast, most firms were in food, textiles, and non-metallic mineral. The South was dominated by rubber and chemical products, and the assembling or repairing of machinery and transport equipment. In fact, a more complete listing of industrial enterprises in different regions would reveal that besides the dominance of food processing in every region, non-metallic mineral products (including cement products, pottery, and various other ceramic products), textiles and wearing apparels, wood products, and the repairing of machinery and transport equipment were the industrial groups most frequently found in provincial areas. It would further reveal the importance of tobacco in the North, tapioca products in the Central and Northeast, and rubber products in the South. In addition, in all other regions except Bangkok and the Central region, virtually all industrial enterprises were in the small scale category with less than 50 employees.^{4/}

A majority of firms covered in the survey were established after 1960. As seen in Table 5, 75 firms or 37.3 percent of the sample firms started their businesses during 1960 to 1969, and 68 firms or 33.8 percent were established during 1970 to 1979. There were 50 firms which were established before 1960 and, among them, there

were 19 firms with less than 10 employees and 15 firms with employment sizes between 10-19. On the contrary, almost all large sized firms in the sample were established after 1960. Food, beverage, wood products and furniture, printing, non-metallic mineral products, and others (including mining) have relatively higher proportion of firms established after 1970.

Most firms covered in the survey were single proprietorships. There were only 27 firms or 13.4 percent which were limited companies. As expected, the great majority of firms in the very small sized group (with less than 10 employees) were single proprietorships. Only one firm in the food industry in the sample received promotional privileges from the BOI, and only two firms (one in food and another in rubber product industry) stipulated that they had previously received BOI promotion but that their promotional status had expired. A great majority of firms covered in the survey had never received promotional privileges from the BOI. This is not surprising as most of the BOI promoted firms are relatively large sized firms and the majority of these promoted firms are located in Bangkok and other provinces in the Central region. The present investment promotion law states that only limited companies, co-operatives, or foundations are qualified for BOI promotion. The fact that most small enterprises in provincial areas are unincorporated enterprises automatically disqualifies them from the promotional consideration.

Only three firms in the sample received some degree of foreign investment. Two of them were in the beverage/tobacco

industries and the other one in the food industry; and two of them (one in the food industry and one in beverage industry) received investment from the United States, with the other (in tobacco) receiving investment from South Korea. All three of these firms did not receive promotional privileges from the BOI.

2.2 Characteristics of the Entrepreneur

Most of the entrepreneurs (owners of the surveyed firms) received little formal education. This is particularly true for entrepreneurs in the very small sized group (see Table 7). However, entrepreneurs who received secondary school education or higher in the present survey appeared to have a higher ratio than those found in the 1976 survey. There were 55.2 percent of entrepreneurs with high school education and higher in the present survey as compared to 36.8 percent found in the 1976 survey.

Most of the entrepreneurs had knowledge and experience in their line of business before establishing their own firms, and a significant proportion of entrepreneurs had previous occupations in commerce or in industrial enterprises. This confirms the previous findings in some other studies that it is relatively easier for those who are already in the business sector to set up an industrial enterprise, and that experiences acquired in the same industry play an important role in the establishment of small manufacturing enterprises.

Due to the dispersion of the sample sizes, it is difficult to detect clear patterns from Table 7. Nevertheless, a closer look through grouping the various educational levels at a more aggregate level would provide us with some distinctive features regarding the education of entrepreneurs.

Firstly, the survey results seem to show that the smaller size firms generally consisted of entrepreneurs with lesser education especially if we consider the proportion of entrepreneurs with educational levels below high school. Such proportions for firms with less than 10 employees, 10-19 employees, 20-49 employees and 50-99 employees were found to be 59 percent, 40 percent, 35 percent and 16 percent, respectively. Only the group with over 100 employees were inconsistent with the finding. Nevertheless, this could likely be due to the small sample size in this group.

Secondly, it was also found that the Northeast is the region with probably more entrepreneurs with lesser education. Although the proportion of entrepreneurs with lower than high school education was not higher in the Northeast, the proportion of those who completed primary and secondary (high) school was the highest at 80 percent. The region has relatively the least number of entrepreneurs who completed university education. On the contrary, the South and North seemed to consist of more entrepreneurs with educational levels above high school. The central region, on the other hand, consisted of only slightly somewhat more entrepreneurs with education above high school as compared to the Northeast.

Thirdly, the export-oriented firms consisted of more entrepreneurs with above high school education especially university education in comparison to those firms with market orientation in Bangkok or local areas. Between firms producing for the Bangkok market and local area market, those in the former group tended to have more well educated entrepreneurs.

Of the 201 sample firms, there were 180 entrepreneurs or nearly 90 percent who were either born in the locality where the firms were situated or were residents there for more than 10 years. The two most important reasons cited for the establishment of firms in the locality were that the owner was a resident in the area or that he had conducted business there for a long time. Other reasons were proximity to raw materials, good marketing prospects, availability of skilled workers, familiarity of having business connections there, and recommendations by family members, relatives or friends. (see Table 8)

The fact that the very reason a firm is located in a provincial area is because the owner is the resident there is very interesting. Location theory usually specifies that important factors for the selection of location for business firms are those related to cost and profit considerations, such as proximity to raw material sources for resource-oriented activities and proximity to market for market-oriented activities. Factors such as transportation cost, labor cost, adequacy of infrastructural facilities, proximity to

ancillary activities, and existence or non existence of competitors are important in the decision on location. The familiarity with the location of the decision-maker seems not to have been adequately taken into consideration in location theory. Various economic factors specified in location theory are no doubt important for the choice of location. But there are in addition social or institutional factors that should not be neglected. These institutional factors may be more important in countries or areas where the success of conducting a business depends much on personal connection or familiarity with raw material sources, potential customers, and possible sources of finance. It may also be true that these institutional factors are more important for small businesses and for entrepreneurs who do not have much education, since acquiring information relating to marketing, finance, and other aspects in a remote area is relatively costly to him.

As can be seen from Table 8, the proportion of entrepreneurs who cited familiarity with the locality (owners born in the area or having conducted business in the area for a long time) as an important reason for situating their businesses seems to be higher for the smaller-sized firms (with employment less than 10 and between 10 to 19) as compared to the larger-sized groups, with the exception of the largest-sized groups, which also appeared to have a high proportion of respondents citing familiarity of locality an important reason for their location decision. A closer look into the breakdown of respondents by region reveal that the "familiarity factor" was particularly important for firms located in the North and the

Northeast, where almost all respondents stated that either the owners were born in the locality or had been conducting business there for a long time, or both reasons were important for the choice of the present location. The importance of these two factors seems to be relatively less for entrepreneurs in the Central and the Southern regions.

The Northeast again turned out to be the odd region. It consisted of relatively more of those who responded that the reason for firm location was due to the owner being born in the area or having resided and conducted business in the area for a long time. The South also again stood out at the opposite end of the Northeast with the lowest such proportion, although such reasons remained important ones in determining firm location. In addition, the South consisted of relatively more firms whose location was also determined by availability of raw materials. This is consistent with the fact that industries in the South are mainly natural resource-based industries.

Entrepreneurs in resource-based industries including food, tobacco, wood products, and non-metallic mineral products were among those who cited proximity to raw materials as an important factor for locating plant in the particular area. On the other hand, entrepreneurs in plastic products and fabricated metals were among those who cited the marketing factor as an important factor for them in locating their firms in the particular area.

The Thai government, since the early 1970s, has attempted to induce industrial enterprises to locate their plants in provincial areas. Various incentives are provided to attract industrial entrepreneurs in Bangkok and its nearby provinces to move or to expand their production to other provinces. In 1973, the Industrial Estate Authority of Thailand (IEAT) was created to administer the setting up of industrial estates and the development of infrastructures in these estates. The Board of Investment (BOI) has also specified several areas as investment-promotion zones. Industrial enterprises located in investment promotion zones or industrial estates are entitled to receive various additional incentives from the BOI in addition to the normal incentive package which include a five-year income tax holiday and exemption of duties and taxes on machinery and capital equipment. The rationale for providing additional incentives for industrial enterprises located in investment promotion zones or industrial estates is that it is more costly for industrial firms to locate their plant far away from Bangkok due to poorer facilities and higher transportation cost involved in sending their products to the market. However, the response of private investors to industrial estates and investment promotion zones appear to be less than enthusiastic despite the investment promotional privileges given to them. This may be due to the fact that the additional incentives given are not enough to compensate for the additional cost involved in locating production far away from Bangkok.

Insted of trying to woo the industrial establishments already set up in Bangkok or in its surrounding provinces to move away from

the over-congested areas, which is unlikely to be successful, an alternative approach of promoting regional industrialization is to focus on enterprises already established in provincial areas, and to find ways and means to alleviate their problems and to foster their growth. In addition, measures promoting the development of entrepreneurs in provincial areas should also be considered. As entrepreneurs born or brought up in provincial areas are more likely to set up their businesses there, the promotion of entrepreneurship among local residents could be helpful in promoting regional industrialization.

III. PRODUCTION AND MARKETING

3.1 Structure of Production

Most firms covered in the survey produced finished products for consumers. But there were also firms that produced parts and components and other inputs for other firms. Table 9 shows the distribution of sample firms by their major types of business. In general, there appeared to be no distinctive differences on major lines of business among firms with different sizes. Smaller-sized firms seemed more concentrated in the production of consumer goods and repairing or servicing, firms in the largest-sized group (with more than 100 employees) also mostly produced finished products for consumers. Among different industries, food, wood products and furniture, and non-metallic mineral products showed higher proportions of firms with finished products as their major type of business. But quite a few firms in food, tobacco, and non-metallic mineral products also specified that their major type of business was the production of inputs for other firms. It is possible that some respondents might have difficulty in distinguishing between finished and intermediate products. Cement blocks and wood window frame, for example, were sold to households for construction and might be treated as finished products. Repairing and servicing, on the other hand, were more clearly understood and appeared in only two industrial groups, fabricated metal machinery and transport equipment. Assembling of parts and components also mostly appeared in these two industrial

groups.

The extent of subcontracting among firms seemed to be quite limited. Only 4 out of 201 responding firms reported that they received subcontracts from other firms, three of them were in fabricated metal/mechanery and the other one in textiles/wearing apparel. Two of them were located in the North and the other two in the Northeast. In the study of rural off-farm employment conducted in 1980, it was found that the subcontract or "putting out" system whereby materials and sometimes necessary tools and equipment were provided by manufacturers to home workers for certain stages of production were widely used in rural areas of some provinces in the Northeast and Northeastern regions. Products with subcontracting arrangements were garments, silk, wood carving, furniture, fish nets, knitting, lacquerware, and metal bowls. Little is known, however, on the subject of subcontracting or other type of linkages among town-based industrial enterprises, particularly on the relationship between large and small enterprises. This is obviously one of the interesting subjects on industrial development in Thailand which deserves further exploration.

A majority (68.7 percent of total) of surveyed firms reported that their production was irregular throughout the years. Smaller-sized groups seemed to have a higher proportion of firms with irregular production than the larger-sized groups. And those with export sales appeared to be affected more by the variability in demand compared to those which also sold their products to Bangkok or to the

local market. Firms located in the North appeared, on the average, to be more subjected to seasonal variation in demand for their products (see Table 10).

Among firms in different industries, those in food, beverage and tobacco, wood products and furnitures, and non-metallic mineral products appeared to have a higher proportion for irregular production (Table 11).

The most important reason for irregularity in production was the seasonality of demand, followed by the seasonal nature of production process, and seasonal availability of raw materials. Compared to the problems on marketing and raw materials, the seasonal nature of labor supply seemed to be less serious as a cause of irregular production. The problem of seasonality of raw materials availability was more prevalent among those firms producing for the export market; the problem of seasonality of demand was more prevalent among the smallest sized firms, the Northern and Northeastern regions and those producing for the local market; the problem of seasonality of labour supply was more prevalent among those with 10-19 employees, the central region and those producing for the Bangkok market; and the problem of seasonality of the production process was more prevalent among those with 20 employees upwards, the Central and Southern regions and those producing for the export market (see Table 12).

3.2 Capacity Utilization

Firms under survey were asked to specify whether they had fully utilized their productive capacity in 1983. They were also asked to specify the number of days and hours which the firms actually engaged in production in 1983 and the number of days and hours which would have been utilized in production if the productive capacity were fully utilized. The full use of productive capacity was based on the assumption that there were no constraints on demand, finance, raw materials, and labor supply. The number of hours used in actual production in 1983 was then compared to the maximum hours of production at full capacity to obtain the average rate of capacity utilization.

There were 95 firms or nearly half of the surveyed firms which stated that they operated at full capacity in 1983, while the rest (106 firms or 52.5 percent of the total) revealed that they had some degree of underutilization in their productive capacity. The proportion of smaller firms which operated at less than full capacity appeared to be higher than larger-sized firms. But when the average capacity utilization among firms of different sizes is compared, it appeared that firms in the largest sized group had the lowest average capacity utilization rate, with firms employing 10 to 49 persons fared relatively better than the others.

On the average, firms in the South had higher rate of capacity utilization as compared to those in other regions. Firms

which sold their products to Bangkok and other cities had lower rate of capacity utilization compared to those serving the local and export market. By industry, firms in non-metallic mineral appeared to have the highest average capacity utilization while printing firms registered lowest level of capacity utilization. The overall average capacity utilization of the surveyed firms was 73.9 percent (Table 13 and 14).

There is some doubt, however, on the reliability of data on capacity utilization as the results on capacity utilization showed some inconsistencies with answers in some other aspects. It is quite possible that the concept of capacity utilization and the underlying assumption (that full capacity utilization means making full use of productive capacity regardless of demand, financial, or other constraints) were not clearly understood by the survey respondents and the results on capacity utilization should be interpreted with caution.

The most important reason given by firms for underutilization of capacity was depressed market demand, followed by shortage of raw materials. Labor shortage and other labor problems were also mentioned by a few firms as the most important reason for operating at less than full capacity. These findings were consistent with those found in the 1976 survey of which lack of adequate demand was most frequently mentioned as the major reason for underutilization of productive capacity, followed by shortage of raw materials and labor.

3.3 Growth Trend

Respondents of the survey were asked whether their production increased or decreased over the last five years. Out of 152 firms which supplied the answer on this question, 100 firms or 65.8 percent specified increased in production, and 52 firms reported that their production decreased over the past five years. On the average, firms with more than 20 employees showed a better growth record compared with smaller-sized firms. The average rate of increase in production for all growing firms was 10.3 percent per annum, while those with reduction in their production on the average decreased at the rate of 8.1 percent per annum.

In terms of relative numbers, firms with increased and decreased production between 1978-1983 were in both cases found to be more prevalent in the North and Northeast except for the South which has a larger proportion of firms with production decline. (see Table 15). The North was also the region with the highest average increase per year among firms with increased production and with the highest average decrease per year among firms with decreased production in comparison to the other regions. On the other hand, the Northeast was found to have the least average change in production, although firms with production changes was most widespread in this region.

Firms relying on the Bangkok market consisted of relatively more firms with increased production, although the average increase in production per year during 1978-1983 was slightly lower than firms

with export-orientation. Firms producing for the local market consisted of relatively fewer firms with increased production and the average increase was also less pronounced than the other groups. On the contrary, firms with local market-orientation which experienced declines in production during this period has a larger average rate of decrease as compared to the other groups.

Food, textiles and wearing apparels, printing, rubber and plastic products, non-metallic mineral products and transport equipment had relatively more firms with increased production while in beverage and tobacco, fabricated metal and machinery, there were more firms with decreased production (see Tables 16).

When asked whether they had plans to expand their production during the next 2-3 years, the answer was "no" for nearly three quarters of the firms, and only 31 firms or 15.4 percent of the total reported that they had plans to expand their production. (see Table 17) On the whole, larger-sized firms in the sample showed a higher proportion of firms with expansion plans. There was no significant difference on this aspect among firms located in different regions. But the Central and Northern regions seem to consist of relatively more firms with expansion plans. Firms serving the local market were relatively less inclined for expansion compared to those which also sell to Bangkok and other cities and those engaged in exporting. Industries with relatively higher proportion of expansion plans were chemicals, rubber and plastic products, and transport equipment (see Tables 18).

Marketing and financial conditions were two most important factors explaining the existence or the lack of expansion plan. Shortage of raw materials, poor health condition of the entrepreneurs, and expected decrease in exports were also cited as reasons for not expanding in the next 2-3 years (see Tables 19 and 20).

3.4 Change in Production Methods

Most of the surveyed firms claimed that the product design was their own, although foreign methods might have been adapted. Besides their own designs, small firms also copied designs from other firms. Some also purchased technology from abroad. A few firms also reported that they had received technological assistance from government agency such as the Division of Industrial Service (DIS) of the Ministry of Industry (see Table 21).

Firms which claimed that they made products of their own design were mostly found in food, non-metallic mineral products, fabricated metal and machinery, and transport equipment. It is possible that firms in these industries while using relatively rudimentary techniques, also relied much on some small innovations by their entrepreneurs or skilled workers. In the 1976 survey, it was also found that small scale firms relied mainly on their own design, and the proportion of own-designed techniques tended to decrease with the size of the firm. These findings might imply that small scale manufacturing enterprises have a higher degree of adaptability in

their technology than larger sized firms which are heavily influenced by imported technology.

However, when asked whether there had been any change in production method or improvement in production process over the last 4-5 years, a majority of firms (63.2 percent of total) reported that there were no change or improvement. Among 74 firms with some change or improvement in their production techniques, 34 cases involved the use of new machinery and equipment, and 9 involved increased mechanization in some aspects. Others were mostly with the improvement in product quality or quality control (Table 22).

For those with improvement in their production techniques, the major reasons for the improvement were to increase the efficiency of production, to be more competitive, and to satisfy or attract customers. Firms without improvement in their production techniques, on the other hand, claimed that their current technology was sufficient, or the production process was not changeable. But lack of funds and depressed market condition were also cited as reasons for lack of improvement in production technology. It is also interesting to note that in 12 cases (out of which 8 cases were in the smallest-sized group) the lack of information on technology was cited as the reason for the lack of improvement.

The data on production method or technology presented thus far suggest that small manufacturing enterprises in provincial areas have little access to information on new technology. In the survey,

firms were also asked if they were to change or improve their production techniques in the near future, where would they obtain the necessary information for the improvement. The answers for this question were shown in Table 23. Most firms expected that they would get the information within their own firms or from other local sources. Of particular interest is that quite a number of firms cited governmental agencies, research institutes and universities as their expected sources of information of technology. These answers, although not necessarily reflecting the importance of these institutes as sources of information on technology, did indicate some small manufacturers' expectation that governmental agencies as well as universities should play some role on the provision of information on technology. This was confirmed by the firms' suggestions on the possible role of the government on technology that governmental agencies should provide training and seminar on ways to change or improve production technology. However, when asked whether they were willing to pay in order to obtain information on technology, 104 firms or over half of the respondents revealed that they needed no such information; 46 firms or 22.9 percent would pay up to 10,000 baht and 32 firms or 15.9 percent would pay up to 50,000 baht; and only 12 firms or around 6 percent of the respondents were willing to pay more than 100,000 baht to obtain information on technology. Of interest is all firms willing to pay more than 100,000 baht for technology information were in the small-scale category with less than 50 employees, 11 of them were located in the North and one in the South. This showed that at least some small enterprises in the provincial areas were eager to obtain information on technology in order to

upgrade their production capability.

3.5 Market Orientation

Tables 24 and 25 present the amount of sales in 1983 of the surveyed firms. The average sales of firms in the smallest-sized group was 1.1 million baht, while sales in the largest-size group averaging 50.9 million baht per firm. Firms in the South and Central regions were with larger average sales compared to those in the North and the Northeast. Among firms with different market orientations, the average sales of exporting firms was largest, while that of firms relied on the local market was the smallest. Firms in beverage/tobacco had the largest average sales while those in printing were with the smallest amount of sales.

Firms selling to Bangkok appeared in most industrial groups except printing and metal products/machinery. About half of the firms with sales to Bangkok were located in the Central region, and only three of them were located in the Northeast. Larger-sized firms in the sample tended to have a higher proportion of firms selling to the Bangkok market.

On local sales, most of the firms sold their products to regular customers, although some had to fetch whatever customers came along. Only a few firms stated that they had sales on the basis of long term contract (see Table 26).

Export sales were found in firms with more than 10 employees, but were more heavily concentrated among larger-sized firms in the sample. Most of the exporting firms were located in the North and the South. Firms which relied on trading agents for exporting were all in the small-scale category with employment size between 10 and 49. The value of exports comprised only 5.7 percent of the total sales. The bulk of export value came from one firm in mining industry in the South. Other exporting firms were found in food, beverage tobacco, rubber and plastic products, and non-metallic mineral products. (see Table 27). The destinations of exports included the United States, Japan, the United Kingdom, Singapore, Malaysia, and South Korea.

In the SMI study in 1976, it was found that 134 out of 1,007 firms or 13.3 percent of firms with less than 200 employees were engaged in exporting, either directly or through trading companies, and the proportion of export in total sales was quite high (at around 27 percent on the average). As noted earlier, the SMI survey included firms located in Greater Bangkok and also concentrated in provinces with relatively high level of industrialization in each region. The average export performance of the firms in the earlier survey thus appeared to be better than those covered in the present study. This indicates that most small enterprises engaged in exporting are located either in Greater Bangkok or in other cities. However, the results of the present survey also reveal that besides firms located in Chiangmai province, there were a few firms in Pichit (North), Khon Kaen and Buri Rum (Northeast), Songkla, Trang, and Surat Thani (South) also engaged in exporting, although the proportion of export in total sales was

rather small in most cases. As the sample size of the present study is rather limited, not much can be said on the export potential of small manufacturing enterprises located in provincial towns. It will be very interesting to investigate further the ability to export of various rural enterprises, and the factors leading to the exporting of their products.

In the present survey, firms which were not currently engaged in exporting were asked to supply the reasons why they did not export. The reasons given were various. Important among them were: a) the product was not suitable for exporting; b) current production capacity was insufficient to produce for export; c) local market was still expanding, and there is no need for exporting; d) lack of contact with foreign customers and/or lack of knowledge on exporting procedures; e) the quality of the product was not good enough to compete in the international market; and f) exporting business was too costly and also risky.

It is true that many of the products or services of small firms covered in the survey were not suitable for exporting. These include various perishable food items, cement products, printing, and repairing of machinery and transport equipment. But there were also other products including preserved foods, wood handicrafts, traditional textiles and garments, and various rubber and plastic products which could be exported, only if the quality of the products could be upgraded and exporting channels could be found.

It is interesting to note that the reason on lack of contact and knowledge for exporting was mostly supplied by small-scale firms with less than 20 employees, and entrepreneurs in some of these firms believed that their products were good enough for exporting. Altogether, 21 out of 187 non-exporting firms believed that they would be able to export their products in some years to come. Higher volume of sales, higher profits and saturated local market for the products were mentioned as major reasons for wanting to export by these firms.

3.6 Problems of Marketing

Nearly half of the respondents in the survey perceived the limitation of the local market as a major constraint for further growth of their firms. There was a limitation on local demand for the products, and it is difficult to expand the market outside their own towns or districts. Some firms also had to face with the competition from larger firms producing the same or similar products. But the competition among firms of similar size seemed to be more severe. Large size firms also confronted with the competition with imported products. Among different regions, firms in the North faced with more severe competition from foreign products. Exporters as expected confronted with more severe competition with foreign products compared to those which sell their products exclusively in the domestic market. (see Table 28).

Most respondents of the survey, however, believed that their products were with comparable quality with imported products or with

those produced by larger-sized firms. The number of respondents who stated that their products were with higher quality compared to imported products and those who admitted that their products were with lower quality than imports were about equal. When compared to products of other firms, there were more respondents who believed that their own products were with higher quality than those who admitted that other firms' products were better. The prices charged by responding firms were also mostly found to be comparable with those charged by their competitors.

IV. EMPLOYMENT AND OTHER INPUTS

4.1 Structure of Employment

Together, the 201 firms included in the study generated total employment in 1983 of 4,884 persons or an average of 24.3 persons per firm (see Table 29). This is much smaller than the 49.3 persons per firm of the SMI study in 1976. Although there were larger proportions of smaller size firms in this present study, it was nevertheless found that, in each size class of employment, the average employment level per firm was lower in this study. The exclusion of Greater Bangkok could have a partial bearing on this difference.

Of the samples covered, it was found that the average employment size of a firm was largest in the South at 38 persons and smallest in the North at 14.2 persons. The average size of employment in Central region and the Northeast were 26.2 persons and 20.4 persons, respectively.

Available markets outside of the locality of the firm might have played a key role in determining the size of the firm. Firms with export markets generated an average employment level of 54.5 persons while those with markets in Bangkok generated an average employment level of 32.3 persons. These were in contrast to the average of only 17.3 persons for firms depending entirely on local markets. Nevertheless, since the majority of firms were produced

entirely for the local market, almost half of all employment were generated by such locally-oriented firms. It points out that any major employment policy for small-scale industries in provincial areas must take into account the role of local-market dependent firms.

In terms of industries, those with high average employment levels of over 50 persons per firm include the beverage & tobacco and the rubber & plastic products. Those with fewer than 20 persons per firm include the printing, fabricated metal & machinery, food and transport equipment. (Table 30).

Although firms producing food were rather small in size, they provided the largest number of employment of 18.1 percent due to the very large number of firms. The food industry thus remained a major industry in provincial areas similar to the findings in various other studies.

However, the wood product & furniture industry was found to be much more important in providing employment as compared to the SMI study. This was also the case of non-metallic mineral product industry. Their employment contribution in this study were 18.4 percent and 16.3 percent of total employment, respectively.

On the other hand, the textiles & wearing apparel industry, which was found to provide about 18 percent of total employment in small-scale industries in 1976, contributed only 8.7 percent of total employment in this study.

The other remaining industries which contributed more than 5 percent of total employment in this study include the beverage & tobacco industry with 9.1 percent, the mining industry with 8.1 percent, and the rubber & plastic products with 7.4 percent. This more or less followed results obtained in 1976.

The differences between this study and the SMI study in 1976 as mentioned above could again be partially attributed to the exclusion of Greater Bangkok in this study. For example, the exclusion of textile firms in Bangkok's surrounding provinces might have greatly reduced the significance of the textile industry in terms of employment, sales, and others.

The majority of those employed in this study were male employees. It consisted of 70 percent of total employment which is more or less similar to the result from the Labor Force Survey in the manufacturing sector. (see Table 31) It was, however, higher than the 61.8 percent in the SMI study in 1976.

There does not seem to be much significant difference in the share of female employees by employment size except may be for firms with 100 employees upwards which has an average share somewhat above the other groups of 36.5 percent. Except for those firms with between 20-99 employees, firms in the other sizes were found to have shares of female employment quite similar to the SMI study in 1976.

Female employment was found to be least significant in the South with only 17.8 percent of total employment. This could be related to the fact that a large proportion of population in the South are Muslims.

On the other hand, the North was found to have the highest proportion of female employees at 41.5 percent of total employment.

The employment of female workers was also found to be less in firms producing entirely for the local market. Female employment in this category was only 23.7 percent of all those employed.

Industries found to have relatively low female participation include transport equipment (3.4 percent), fabricated metal & machinery (5.6 percent), mining (13.5 percent), and wood products & furniture (19.4 percent). There were only two industries with at least half being female employees. They are the textiles & wearing apparel industry (70.2 percent) and the beverage & tobacco industry (56.8 percent). Two other industries, which have female participation of less than half of total employment, although still considered to be relatively high, are chemical products (42.9 percent) and printing (39.6 percent). (see Table 32).

Most of the workers in the surveyed firms were from the locality where the firms were situated. There were only about 15 percent of the sampled firms which employed labor from outside of the provinces in which the firms were situated. (see Table 33) The

medium size firms with employees of 50-99 workers has the highest proportion relying on labor outside of the province of 37.5 percent of all firms. The largest and smallest firms size groups depended least on outside of province labor. No firms of 100 employees upwards in the survey relied on such labor while those firms with less than 10 employees which relied on outside of province labor amounted to only 5.4 of all firms in the group. The results seem to indicate that the medium size firms of between 10-99 employees (especially those with 50-99 employees) are the major absorbers of migrant workers from other provinces.

At the regional level, the Southern and Central regions relied more on outside of province labor with the proportion of firms absorbing such labor being 29.8 percent and 20 percent of all firms, respectively.

Firms in the North and especially the Northeast were found not to depend in any significant way on labor outside of the provinces in which the firms were situated. This seems to be in line with the general consensus that these regions are those with large supplies of surplus labor especially during the off-peak season in the agricultural sector.

Another result is that firms which depended on Bangkok as a market tended to rely more on outside workers while firms which depended on export markets and entirely on the local market on the average do not depend that much on migrant workers.

On skill mix of the labor employed of the 186 firms which responded to the question on job category, it was generally found that there was a higher proportion of firms with skilled manpower in the larger size firms. This was found to be consistently true for the cases of department/section manager, sales personnel, engineers, secretaries/typists, and production/factory manager. For accountant/financial employees with bachelor's degree and technical staff/skilled labor with diploma, the proportion of respondents were also found to increase with the size of firms except for those firms with employees of 100 persons upwards. (see Table 34).

At the regional level, it was found that the South tended to have a higher proportion of firms with skilled labor for most high skill job category. This was true in the cases of sales personnel, accountant/financial employees with bachelor's degrees, technical staff, production/factory manager and foreman. On the contrary, the Northeast seemed to have the lowest proportion of firms with high skill job categories. This applies to sales personnel, accountant/financial employees with bachelor's degrees, technical staff, production/factory manager and foreman. The Central region, and to a lesser extent, the North were found to have a larger proportion of firms with laborers classified under low level technical staff.

Among industries, it was found that rubber, beverage & tobacco and wood product & furniture were those which have relatively

higher proportions of firms with available high skill job categories. (Table 35).

Export-oriented firms were found as expected to have a larger proportion of firms with high skill job category. This applies to all categories of high skill labor. Firms depending on Bangkok as a market outlet, on the other hand, were found to have a higher proportion of firms with skilled employees in most high skill job categories over those firms which depended entirely on local markets. These categories include department/section manager, sales personnel, accountant/financial employees with bachelor's degrees and production/factory manager.

4.2 Wage Structure and Other Compensation

In general, it was found that the average monthly salary of female employees was lower than that of male employees irrespective of job category. (see Table 35) Furthermore, larger firms tended to pay higher salaries for their employees especially those with higher skills.

For laborers which made up the largest group of employees, the highest salary was also paid by firms with 100 employees upwards while the lowest salary was paid by firms with less than 10 employees. There do not seem to be much significant salary scales for firms in the other three group sizes of 10-19 employees, 20-49 employees and 50-99 employees. This was different from the SMI study which found

consistently higher salaries for larger firms. The salary of laborers in this study was about 60 percent higher than in 1975 under the SMI study. This implies an average annual increase of 8 percent.

Nevertheless, the wage level obtained of low level technical staff declined with the employment size of firms, that is, if firms with less than 10 employees were excluded.

The salaries paid in the South for most job categories including laborers were generally higher or as high as those paid in other regions. The only job category with a rather low wage scale as compared to other regions was that of low level technical staff.

The other three regions' wage levels for laborers were not significantly different. Among them, the salary scale in the North for skilled employees seemed to be generally higher.

Except for technical staff and foreman, export-oriented firms were found to pay higher than average salaries for the other job categories. However, there were not much differences in the wage rates of laborers among all three categories of firms classified by their markets.

Besides salaries, there were other benefits provided to employees. The most widespread benefits given were medical care, room and board. The proportion of firms providing such benefits were 66 percent and 40 percent, respectively. Annual bonuses accounted for

only 13 percent of the firms covered.

The proportion of firms providing medical care increased with firm size. This was also true in the case of room accommodation for those firms with less than 100 employees.

The South has the highest proportion of firms providing for medical care (89 percent) and room accommodation (72 percent). In terms of boarding, the Northeast consisted of the highest proportion at 58 percent. Firms in the North, however, utilized annual bonuses more than other regions or 32 percent of all firms. The highest proportion of firms not providing for any benefits other than salary were found in the Central and Northern regions.

Among firms with different market orientation, those which relied on export markets consisted of more providing for room accommodation and annual bonuses. However, this group relied much less on boarding as a benefit. Firms relying on the Bangkok market consisted of a higher proportion of firms with no benefits other than salary than the other two groups.

4.3 Employment Trend and Seasonal Nature of Employment

The number of newly employed workers and the number of job quits in 1983 were found to be rather close or 747 persons and 728 persons, respectively. (see Table 36) They were about 15 percent of the total employment in this year. Of the total respondents, about 55

percent hired new workers and about 56 percent experienced job quits in 1983. The turnover of workers as measured by new employment and job quits did not show any clearcut relationship to firm size, although it was found that firms with 100 employees upwards experienced the least turnover problem with the proportions of both categories being much below 10 percent of total employment in 1983.

Regionally, the North was found to have somewhat less of a turnover problem than the other regions. This was also the case for firms with export-orientation.

There seemed to be a close consistency between the rate of new employment and the rate of job quits except for large firms, firms in the North and Northeast, and export-oriented firms. This probably implied that most newly employed workers were hired to replace those who quit.

As could be expected, almost all new employment and job quits were confined to laborers. The major reasons for labor turnover included quitting for better jobs and quitting to go back to the farm during the harvest. The former reason was more widespread with 41 percent of respondents while the latter-accounted for 29 percent. Other reasons were scattered and do not seem to be important.

Some additional noteworthy observations are that the Northeast has the most widespread response of quit due to harvesting in the agricultural sector of 45 percent; the South has a rather large

proportion responding on better job opportunities; and there are relatively more firms experiencing job quits due to better job opportunities for small firms with 10-19 employees and firms relying entirely on local markets.

Categories of firms which experienced a higher rate of new employment than the quit rate in 1983 including large firms with 50 employees upwards, firms in the Northeast and export-oriented firms were also found to be those with high positive growth in average employment per firm between 1978:1983. (see Table 37) Since large firms with 100 employees and export-oriented firms tended to have lower turnover rates in 1983 and high employment growth rates during 1978-1983, this could imply that growing firms or firms with less sluggish growth would generally experience less problem of labor turnover.

The survey found that, in general, the employment level (laborers) of an average firm has gone down slightly. It was 24.8 persons in 1978 and 24.3 persons in 1983, a decline of about 2 percent. This could be due to the severe recession in 1981-1982. Evidently, these firms may not have recovered fully enough in 1983.

The reduction in employment was more severe for smaller firms. Firms with less than 20 employees experienced reductions in employment while firms with 20 employees upwards actually experienced positive increases in employment during 1978-1983.

The reduction in employment were confined to only the Northern region and firms depending entirely on local markets. Average employment levels for these two groups of firms went down 21 percent and 18 percent, respectively.

In the survey, firms were asked to specify whether they would employ any additional workers in the next 2-3 years, and if so, in what job category. As could be expected, the need for additional workers in the next 2-3 years was found to be mainly confined to laborers. There were half of responding firms requiring such employees. For other types of employees, they were all less than 5 percent of the respondents.

Small firms with less than 10 employees, firms relying entirely on local markets and firms in the Northeast were found to have a high proportion which do not require additional employment in the next 2-3 years. This could indicate more widespread pessimistic expectations among firms of these categories concerning general economic conditions.

For those firms requiring additional laborers, the demand was basically only to replace workers who are expected to quit. This accounted for 67 percent of firm response. Another 23 percent required additional laborers mainly for expansion purposes. The remaining 10 percent gave equal weight to the replacement of workers and expansion. On average, the demand for new workers was about 7.5 persons per firm for the next 2-3 years. Regionally, it was highest

in the South at 12.8 persons. The monthly salary that firms are willing to pay for additional laborers were 1,610 baht for male workers and 1,390 baht for female workers which were in fact slightly lower than the averages, found paid in 1983.

4.4 Training Programs for Workers

Since most new employees are laborers who are unskilled, about half of the firms do not in any way test the skills of applicants. This was found to be most prevalent in the smallest firms with less than 10 employees, the firms in the Central region and the firms producing for the Bangkok market.

Furthermore, about 58 percent of the firms do not have any training programs for new workers. Again, the Central region and firms producing for the Bangkok market were found to consist of relatively more of such firms.

Training programs for old employees were also scarce with only 13 percent of such firms among the respondents. Export-oriented firms has the highest proportion at 36 percent.

Of the 79 respondents with training programs for new workers, the average length of training was about 40 days. They were highest for smallest firms of less than 10 employees and firms in the South at about 55-56 days.

Training for old employees was of shorter duration averaging about 11 days for the 23 firms with such programs. Smaller firms tended to have longer duration of training. The Northeastern and export oriented firms were found to have relatively shorter training days of 6 days and 9 days, respectively.

Firms in general do not undertake formal recruitment effort since it was found that laborers were obtained mainly through contacts with acquainted people. There was also no shortage of job applicants for a large proportion of firms.

The majority of firms or 54 percent were unwilling to contribute towards government programs which would help train workers. The reasons cited, ranked according to the number of responses, were that there was no need for training, internal training was much better, and seasonal labor force did not require training.

4.5 Problems of Employment

There were 34 firms out of the 186 firms responding which experienced labor shortage problems in 1983. Of these, the shortage was of the laborer category in 30 firms. There were 10 firms which cited the harvesting season as the major reason for the shortage. Seven of these firms were situated in the Northern region. Twenty-four firms attributed other factors but did not cite them.

Of the 186 respondents, the most serious employment problem is the high seasonality of the labor force. In addition to being the number one problem receiving the highest response of 35 firms, it was also the most widespread problem with 63 firms or 34 percent of all respondents identifying this as one of the four most serious problems. (Table 38)

Other major problems include high absenteeism rate, high labor turnover and difficulty in finding skilled workers. They were identified by 31 percent, 27 percent and 25 percent of all respondents among the four most serious employment problems. Other lesser problems include the lack of labor skills (17 percent), damages caused by workers (15 percent), competition for workers (16 percent), high wage demand (12 percent) and quarrels among workers (4 percent).

The problems of employment of small-scale enterprises found in this study were not much different from those found earlier in the 1976 survey. Small enterprises in provincial areas usually have a close link with the rural sector, and to a significant extent they have to rely on workforce from the rural areas in their production. The employment of rural workers is helpful for those residing in the rural areas since they could make full use of their time and earn additional income during the slack agricultural season. But the fact that industrial firms in provincial towns have to rely on rural workers also impose problems to the firms, since these workers tend to leave for farm work during peak agricultural season. Beside the problem of irregularity in production, the lack of stable workforce may also tend to obstruct the development of skill for workers. However, as pointed

out earlier, high rate of labor turnover and other problems on employment are only one of the problems of small industrial enterprises, and is not necessarily the most serious one.

The minimum wage rate set by the government did not seem to be a major problem for firms covered in the study. There were 77 percent of firms which were not affected by this measure at all. Only 5 percent answered that they were affected a lot. Export-oriented firms were affected more by such a measure than domestic-oriented firms. It is a well known fact that many industrial enterprises pay their workers lower than the minimum wage rate. This may explain the small effect of the minimum wage legislation on most firms covered in the survey. On the other hand, the findings may also imply that if the minimum wage law is to be strictly imposed, many small enterprises in the provincial areas will be seriously affected.

4.6 Physical Capital and Raw Materials

The proportion of firms which employed imported machinery and equipment seemed to increase with firm size. In terms of value, locally made machinery and equipment accounted for 58.9 percent of the total value of machinery and equipment covered in this study. Imported machinery and equipment obtained in the local market made up another 36.1 percent with the remaining 5 percent being imported directly by firms. In this case, it was rather clear that the locally made proportion of machinery and equipment value declined consistently with firm size while that of imported machinery increased with firms

size. (see Table 39).

In terms of regions, the South and Northeast have higher proportions of machinery and equipment value being imported totalling, about half of the total value. The Central and Northern regions, on the other hand, have each about 30 percent of their machinery and equipment being imports.

On raw materials, they study found that slightly above one fifth of the firms covered relied on import raw materials. The value of these foreign raw materials, however, amounted to less one tenth of the total value of raw materials utilized by these firms. This was much lower than the 34 percent found in 1976. Directly imported raw materials of firms were also found to be negligible with most of foreign raw materials being obtained through the local market. Larger firms tended to rely more on foreign raw materials than smaller ones. In terms of the value of local materials, it was also found that larger firms depended less on such materials, although they remained significant. Local raw materials usage still made up of over 80 percent of total raw materials even for those firms with 100 employees. (see Table 40).

For domestic raw materials, about 57 percent of the respondents depended on local materials within the province of firm location. About a quarter of firms depended on raw material supplies from Bangkok with the remaining 18 percent depending on outside provinces other than Bangkok. It can thus be seen that the majority

of firms in this study are resource-oriented ones.

Firms in the South seemed to rely more on raw materials within the province of location. There were 76 percent of all respondents in this region. This is not surprising considering that the South is rich in minerals and consists of large areas of rubber plantations. Such basic industries are relatively more resource-oriented than market-oriented. They thus tended to situate near their source of raw materials. Firms with export markets were also found to consist of more which were resource oriented. Out of 14 firms in this group, there were 12 firms which relied on raw materials within the provinces of firm location. This seems to be consistent with the international trade theory which suggests that countries would tend to export commodities which have a high content of domestic input.

The most widespread complaint concerning raw materials of firms was that they were too expensive. This may imply that a large part of production cost is due to raw materials. To a lesser extent, insufficient supply, uneven quality and poor quality of raw materials, were also cited as problems. The complaint of insufficient supply and poor quality was relatively greater for firms with export-orientation. Three of the seven large firms also complained about insufficient supply of raw materials. (Table 41).

V. CONSTRAINTS TO GROWTH AND PERCEPTIONS
TOWARD GOVERNMENT INTERVENTION

5.1 Constraints to Firm Growth

The most important constraint to firm expansion was found to be local market demand. Approximately 44 percent of firms chose this as the most binding constraint (Table 42). In responses of the top three constraints were considered together, we would find around 67 percent of all firms mentioning this factor as a major problem.

The second most important constraint found to affect firm growth was concerned with finance. A total of 57 percent of the respondents ranked this among the three most binding constraints. There were about 23 percent of the firms who chose this as the most important constraint.

The other constraints cited, according to ranking of importance, were raw materials supply, skilled labor supply and export market demand. Responses obtained from the 3 most important constraints were 41 percent, 23 percent and 10 percent of all firms, respectively. An interesting observation is that government control was not found to be a major constraint to growth.

The smallest size firm group of less than 10 employees consisted of relatively more firms who viewed local market demand as

the major constraint. Approximately 53 percent of these firms considered this as the top constraint.

The local market demand constraint was also found to be most widespread obstacle to growth in the Northeast. There were 72 percent of all firms in this region which chose this as the top constraint. A further 20 percent of all firms in the region which chose this as the second most important constraint.

In terms of industries, the local market demand constraint was found to be most widespread in the tobacco & beverage industry, the printing industry and the rubber & plastic product industry.

As for financial constraints, they were found to be more widespread among firms of smaller sizes. The North and Northeast also seemed to have greater problems of financial constraints limiting growth than the other two regions. Among industries, they were found to be major binding constraints in the fabricated metal & non-electrical machinery industry and transport equipment industry.

In the case of raw materials, the supply constraint seemed to increase with firm size. Large firm groups were found to have higher proportions of firms which chose this factor as a binding constraint as compared to smaller firms.

The region found to have the most response on the raw material constraint was the South. This was consistent with the

response of the mining industry which is mainly situated in the South. As much as 6 firms out of 7 firms in the mining industry chose the raw material supply factor as the number one constraint.

One further observation on the raw material constraint is that it was more widespread among export-oriented firms.

5.2 Source of Financing and Problems on Finance

As problems relating to marketing, employment and raw materials have already been discussed, we will focus here on the problems relating with finance in this subsection. The majority of funds which financed the establishment of the firms studied came from own funds. This accounted for around 93 percent of all capital. Commercial banks provided another 6 percent. (Table 43)

It is interesting to note that small firms with less than 50 employees relied more on commercial bank funds than own funds. Firms in the Central and Northern regions also relied relatively more on commercial bank funds in establishing their businesses with the proportion being 41 percent and 33 percent of total investment, respectively. Another feature was that export-oriented firms and firms producing for the Bangkok market also relied more on commercial banks in their establishment.

The average initial investment found was about 15.5 million baht. The average sum in the South was exceptionally large at 54.8

million baht while it was rather low at 2 million baht in the Central region. The North and Northeast averaged 4.2 million baht and 5.5 million baht, respectively.

In financing their operations, firms studied required about 3.2 million baht on the average. Once again, it was found that own funds was the most significant source with about 58 percent of total operational funds. Nevertheless, this was a much lower dependence as compared to initial investment capital. The implication seemed to be that the difficulty in obtaining financing from other sources was less severe after the successful establishment of the firms. (Table 44)

Most of outside financing were again found to be from commercial banks which together provided about another 36 percent of operational capital. SIFO was found to provide only 6 percent of such needs.

Firm size was not found to be a significant factor which determined the source of operational financing. At the regional level, however, firms in the North relied much less on own funds in financing their operations or only 20 percent of working capital. It is also surprising to note that firms producing entirely for the local market relied less on own funds than the exported-oriented firms and firms producing for the Bangkok market.

The most widespread financial problems among firms is the complaint of high interest rates. There were 52 percent of all firms

mentioning this problem and it was cited as the most significant financial problem by 34 percent of these respondents. This problem was more widespread in the Northern and Central regions and among firms producing for the Bangkok market. (Table 45)

The second most important financial problem was insufficient internal funds to permit the application for loans. About 46 percent responded to such a factor. The response rate was again higher in the Northern and Central regions together with firms producing for the Bangkok market.

Another financial problem is the lack of sufficient collateral in obtaining loans. There were about 39 percent responding on such a problem. Once again, the problem was found to be more widespread in the Central and Northern regions.

Industries which were, in general, found to have relatively more widespread financial problems of one form or the other include beverage & tobacco, textile & wearing apparel, non-metallic mineral product, fabricated metal & machinery and transport equipment.

The average interest rate of borrowing from finance companies was higher than that of commercial bank borrowing which was to be expected. It was 19 percent in the former case and 17 percent in the latter case. This could be a main reason why there were only four firms in the survey which borrowed from finance companies. Of course, it could also be the lack of access to funding of finance companies

since such companies may prefer to lend to larger concerns.

For those who have access to commercial bank credit, it was found that the interest rates charged was lower for large firms and higher for small firms, that is, if firms with 100 employees upwards were excluded from consideration.

The average interest rate of credit obtained from firms which have business contacts was also found to be lower than institutional sources of credit. It was 15 percent per year.

It is also noteworthy that the study found average interest rates in the informal market to be lower than commercial bank's average interest rate. They were 16 percent per year for chit funds, 8 percent per year from relatives and friends, and 6 percent per year for other sources.

Of these 201 firms covered, there were 44 firms with expansion plans. Of these, 34 firms required additional investments. The total amount of additional funds needed for expansion totaled approximately 276 million baht or 8 million baht per firm. Commercial banks were expected to provide about half of this fund requirement while finance companies another 15 percent. It is interesting to note that about 35 percent of these financial needs would be met by other unspecified sources. It seems likely that such funds may come from increases in the registered capital of these firms.

5.3 Access to Governmental Services

There exist several governmental agencies which are supposed to provide assistances to small industrial enterprises in various aspects. Under the Department of Industrial Promotion of the Ministry of Industry, there are several Divisions including the Division of Industrial Service (DIS), the Divisions of Handicraft Promotion (DHP) and the Division of Cottage Industries (DCI) which directly or indirectly provide assistances in rural industries. There are also other official institutions which provide assistance to manufacturers and workers in general, such as the Thailand Management Development and Productivity Center (TMDPC) of the Ministry of Industry and the National Institute for Development of skill Labor (NIDSL) of the Department of Labor, Ministry of Interior. The scopes of operation of most of these institutions, however, are very limited, and only a small number of manufacturers have received services from these institutions.

In the survey, respondents were asked whether they had received any assistance on some of these governmental agencies. The institutions listed include the DIS, TMDPC, NIDSL and the Export service Center (ESC) of the Ministry of Commerce. It turned out that a great majority of respondents had never received services of any kind from these institutions. Only in the case of DIS which appeared that there were more than 10 percent of respondents which had received some services from this institute, and the majority of firms receiving services from the DIS were those located in the North, particularly

those in Chiangmai, where the regional center of the DIS is located. For those who had received services from some of these institutions, most of them revealed that the services rendered were helpful to their business. Only a few expressed that they were very useful or not useful at all.

On financial services, two institutions were listed for comment. They were the Small Industry Finance Office (SIFO), which was set up to provide credit to small and medium scale producers, and the Industrial Finance Corporation of Thailand (IFCT), which caters more for the financial need of larger-sized industrial enterprises. It turned out that 195 firms or 97 percent of the respondents had never received loans from the SIFO, and 198 firms or 98.5 percent of the respondents had never received loans from the IFCT. Out of 6 firms which had received loans from the SIFO at one time or another, 3 were located in the South, 2 in the North and one in the Central. Firms in the Northeast in the sample had never received any loans from the SIFO. For IFCT, the three clients were evenly distributed among the Central, North and South. Again firms in the Northeast had never received any loans from the IFCT. Two out of 3 IFCT clients were export-oriented firms and the remaining one was local-market oriented. In the case of SIFO, there were 3 local-market oriented firms, 2 firms selling to Bangkok and the remaining one was an exporting firm.

The results of this survey confirm the findings in various previous studies that despite its specified objective, SIFO has in fact played a very minor role in financing small scale industries.

Surveyed firms were asked to specify their need for governmental services. The results are shown in Table 46. Most respondents revealed that long-term loans and marketing assistances were much needed, followed by production assistance. Training of workers and training on management, on the other hand, received relatively low ranking in terms of need.

VI. CONCLUSIONS, POLICY IMPLICATIONS AND SUGGESTIONS ON FURTHER STUDIES

6.1 Conclusions

Many of the results obtained from the present study are not much different from those found in the SMI study in 1976. The major characteristics of small industrial enterprises as well as the problems they encountered in 1983 appeared to be quite similar to those in 1975. The present study, however, seems to present a less optimistic picture on the prospect for further growth of small industrial enterprises as compared to the SMI study. It also more clearly reveals various factors constraining the growth of small scale enterprises as compared to the previous study.

No doubt small scale industrial enterprises still play a very important role in Thailand's industrial sector. Their importance is even more in provinces other than Bangkok and its surrounding region, as a great majority of industrial enterprises in rural areas or provincial towns are small scale with less than 50 workers. Small industrial enterprises also possess several properties that are desirable for industrial development in Thailand at this stage. However, they also confront with many problems and there are quite a number of factors at work to limit further growth of some of the small industries. In the present survey, although there were more firms showing positive growth over the last 5 years than those which negative

growth, there were only a mere 15 percent of firms covered in the survey revealing that they would foresee further expansion during the next 2-3 years. The recession experienced in 1981-82 might have influenced the growth prospects as seen by the entrepreneurs. But there are other factors limiting the growth potential of these industries, particularly those on marketing and finance. The exclusion of Greater Bangkok in the present study might have some important bearing on the differences between the present study and the SMI study in 1976. In addition, the present study as contrast to the SMI study which concentrated largely to more industrialized provinces, also covers some less developed provinces (two in each region). The coverage of industrial activities in the present study is thus seen to be much less than those found in the 1976 study, and this may not merely be due to the fact that the sample size of the present study is much smaller than the previous one. Here we see a stronger linkage between industrial enterprises and the local economy. Industrial enterprises covered in the survey used a great proportion of local raw materials, hired mostly workers from the provinces where they are located, and sell a significant portion of output to the local market. The close link with the local economy also lead to various constraints on growth for the industrial enterprises. They are facing with inadequate demand for their products, shortage and variable quality of raw materials, high rate of labor turnover and lack of skilled workers. Obviously small manufacturing enterprises located in rural areas and provincial towns have had many disadvantages compared to those located in Bangkok and its surrounding provinces.

But it is precisely the strong linkages with the local economy that justify the promotion of small industrial enterprises located in rural areas and provincial towns. In Thailand, there is much underemployment in the rural areas and the existence of industrial activities in provincial towns and rural areas provide additional opportunities for more productive use of available manpower. If rural industries grow well, there will be additional sources of income and employment for rural residents, and the rate of migration of workers to the over-congested areas of Bangkok and its adjacent provinces can be effectively reduced.

Although the overall growth prospects for industrial enterprises in provincial areas found in this study is not so bright, there existed firms which showed respectable growth over the past five years, particularly those with more than 10 employees, and those that also sold their products to Bangkok or to the export market. Even for those serving exclusively the local market, 43.8 percent of them showed positive growth (at an average annual rate of 9 percent) over the past 5 years, despite all the complaints on various difficulties they had encountered. It is therefore necessary for policy makers to look into the various problems confronted by these industrial enterprises and find ways and means to help alleviate them so that these enterprises can grow well and can contribute more to the country's overall industrialization effort.

6.2 Policy Recommendations

Up until the present time, measures taken for promotion of small scale industries have been very limited. Industrial enterprises in rural areas are particularly handicapped in getting access to the already scanty governmental services. Although there exist institutions like the Small Industry Finance Office (SIFO) and Division of Industrial Services (DIS) to assist small industries on financial and technical matters, the scopes of operation of these institutions are far too limited. This is confirmed by the present study which find that a great majority of industrial enterprises covered in the survey had never received assistance of any kind from any governmental agencies. At the same time, the demand for government's assistance was high among entrepreneurs of rural industrial enterprises, particularly on the provision of long term finance, and information on marketing and technology. If the government is serious on the promotion of rural industrialization, measures must be found to alleviate the problems confronted by rural industries, particularly those on marketing and finance.

On marketing, although not much can be done to solve the problem of limited local demand in the short run, the government can help in providing information on marketing, and on improvement of the quality and design of products, which will in turn improve the products' marketability. This kind of assistance is particularly helpful to industries with potential to sell their products to Bangkok and other cities, and those with potential to export. Institutions like the Division of Industrial Service and the Export Promotion Center can play an important role for this type of assistance. Up

until the present time, the DIS has confined its services in very limited areas. Besides the head office in Bangkok, the branch office in Chiangmai has been operating for quite some time and has provided valuable assistances to industries in Chiangmai and its nearby provinces. The other branch office in Khon Kaen was set up in 1983 but the scope of operation has still been very limited. Industries in other areas have so far gained no access to such technical assistance. The Export Promotion Center, on the other hand, has been helpful in providing marketing information mainly to industrial enterprises and trading firms located in and around Bangkok, and not much effort has been made to assist rural industries on exporting information.

As industries in provincial areas rely mainly the local market, the increase in income of rural residents will result in increasing the effective demand for the products of the rural enterprises. Efforts made on rural development will certainly be helpful in creating an expanding market for rural industries in the long run. On the other hand, as rural industries have significant linkages with the rural economy, the rural development program should take due consideration the role played by rural industries (including industries located in provincial towns and in villages) in overall development of the rural areas.

The technological aspects of industrial development has long been neglected in Thailand. For efficient operation of small scale industries, their technological capabilities need to be significantly

enhanced. At present, only the Thailand Institute of Scientific and Technological Research (TISTR) has provided assistance on some technological aspects to industrial enterprises. But so far the relationship between the TISTR and the private sector in general has been rather weak, and TISTR also has rather limited capacity in providing technological assistance. It is expected that technology will become a very important element when Thailand gradually approach the stage of semi-industrialized countries and also to launch more industrial products in the world market. The technological capability of the industrial sector needs to be sub-stantially strengthened. This, of course, is not confined to the small industrial sector. But as over 90 percent of the industrial enterprises in the country are small scale with less than 50 employees, any effort made on industrial technology should always take small scale industries into consideration.

On finance, the present scope of operation of SIFO should be greatly expanded. Since the operation of SIFO has been constrained by several structural problems, the reorganization of the institute is necessary. The reorganization of SIFO was in fact been approved by the Cabinet for some time, and plan has been drawn to set up a Small Industrial Finance Corporation of Thailand (SIFCT). But so far no concrete action has been taken. As finance imposes a serious constraint on growth of small industries in rural areas, actions should be taken promptly to tackle problems in this area. The establishment of the SIFCT will help to alleviate some of these problems. But it is unlikely that the problems on finance faced by

small industries could be effectively solved in the near future. Other supplementary measures should thus also be found in order to ensure that the financial services could be extended to industries in provinces far away from Bangkok. If the SIFCT is to be helpful for industrial enterprises in rural areas, co-operation with the Government Savings Bangkok (GSB), Bank for Agricultural and Agricultural Co-operatives (BAAC), or even commercial banks which have extensive branch network throughout the country should also be considered.

As small enterprises are numerous in number and are spread out in all areas of the country, any promotional measures will face with the problems of constraints of budget and manpower. And it is not possible that various types of services can be effectively provided to all of those who need them. An alternative approach is to set up some small training centers catering for the need to some important industries in specific areas at the first stage. For example, traditional garments and pottery in Chiangmai and a few other provinces in the North; silk and certain food products in the Northeast; and rubber products in the South. Ideally, assistances should be provided in a package, including marketing, finance, technology and management. Or if they are to be provided by different agencies, some forms of co-ordination should be designed. At present, there are several divisions in the Ministry of Industry responsible for the promotion of rural industries. There may be a need for reorganization so that all these divisions could be put under a single Department or Institute to ensure more efficient

implementaiton of promotional measures. Indeed, considering the importance of small-scale industries in Thailand, it is advisable that an Institute of Small Scale Industry (or institutions with any other name, but at least should have a status of the level of a Department in the Ministry of Industry) be set up to oversee the planning and implementation of policy measures toward small scale industries.

Besides the setting up of training centers, some short training courses such as those on marketing and management techniques, and basic accounting could be designed in several provincial areas from time to time. As industrial enterprises in provincial areas are mainly established by residents in those areas, assistance of this type in addition to assisting existing entrepreneurs, could also be helpful for the development of potential entrepreneurs, which will in the long run help to faster the growth of rural industries.

6.3 Suggestions for Further Studies

Despite the existence of various studies on small scale industries, the knowledge of small industries in rural areas in Thailand has so far still be very inadequate. Past studies tend to concentrate more in areas where a wide variety of industrial activities could be found, and little is known on the characteristics and problems of industries in less developed areas. The present study, although trying to remedy this shortcoming by incorporating some less developed provinces in the study, and also trying to go a little further in looking into reasons behind various problems

confronted by rural industries. has been constrained by its limited sample size and coverage, and also by the limited time available for the study. Various interesting aspects on rural industries are therefore still left much to be further explored. It is hoped that a more comprehensive study on small scale industries would be done in the near future and factors explaining the existence or non existence of rural industries as well as the relative performance of these industries in different areas can be more fruitfully identified. This proposed study, if successfully carried out, can be of great help to policy makers who are eager to see the dispersion of industrial activities to provincial areas.

Among the many issues on rural industries that worth further exploration are:

1. The factors important on the choice of location of industries. For example, why in some provinces or districts there exist a wide variety of industrial activities, while in some others industrial activities can hardly be found? Why some large scale firms choose to locate their plants in provincial areas and what are the problems they have encountered? Are there any differences in characteristics as well as problems confronted by industrial firms located in different areas of the country? The answer to these questions will undoubtedly have significant implications on policy of rural industrialization.

2. The linkage between large and small industrial enterprises, and between enterprises in Bangkok or other Central provinces and those in other provinces, and the factors explaining the existence or non-existence of such linkage. For example, is there any subcontracting arrangements among industrial enterprises in different regions? What are the important factors leading to such subcontracting arrangements? Are there any difficulties arisen from such arrangement? What are the possible costs and benefits of the subcontracting arrangement to the country's overall industrialization process?

3. The possibility and potential for small industrial enterprises in rural areas to expand their market to Bangkok and other cities, and to the international market. Why some industrial enterprises located in provinces can sell their products to Bangkok or even to the export market while most others cannot? Is it possible to use trading companies as channels for exporting products produced by rural industrial enterprises? What are the obstacles encountered for firms in rural areas which manage to sell their products to Bangkok or to the export market?

4. Long-term development of rural industries. Whether rural industrial enterprises manage to survive for a long time, or many of them vanish as time passes? Whether it is true that rural enterprises confront with increasing competition from larger enterprises located in Bangkok or in other outside regions? What is the rate of increase or decrease of rural enterprises and what is their growth performance over time? Is there any difference in the characteristics of

enterprises and entrepreneurs between the newly established firms and the old ones? In what type of industries where new firms are entering into business and why?

5. A comprehensive evaluation of various services offered by governmental agencies to small industries (such as those by the DIS and SIFO) on the extent and usefulness of such agencies as well as the shortcomings and difficulties involved in such services. The possible role of other institutions so far not so active in promoting small scale industries (such as TISTR, and the Management and Productivity Center) should also be assessed so that ways and means can be found to improve the role played by these institutions on development of small industries.

6. The role of cottage industries or industries in rural villages on income and employment generation in rural areas. The present studies as well as the SMI study in 1976 focus mainly on town-based industries. But there exist numerous cottage industrial establishments in rural areas whose characteristics are significantly different from the town-based industries covered in this and the SMI study. Rural cottage industries have been studied by the Rural Off-Farm Employment Program Sponsored by the USAID some years ago. But there are many important issues of this type of industrial activities remaining unanswered. A follow-up study on various aspects of cottage industries in rural areas will no doubt provide significant insights on the subject of rural development.

Undoubtedly there are many more significant issues on rural industries besides those mentioned above needing to be further explored. Besides the broad issues suggested, focus may be put on some specific areas such as those on marketing, finance, or management; or studies may be made to certain industries in certain areas. The present study, in trying to cover a wide range of issues, tends to miss out the indepth analysis of various factors behind the figures presented in various tables. It may be interesting to pick up some specific issues which are important (such as those relating with marketing and employment) but remain unclear at the present time and conduct some comprehensive studies on these specific issues.

It is expected that small industrial enterprises will continue to play a vital role in Thailand's industrial sector and in the Thai economy as a whole. For the significant objective of generating income and employment in rural areas, small industrial enterprises in provinces should be more effectively promoted. Better understanding on various aspects of rural small industrial enterprises will no doubt be important for the effective planning and implementation of programs aiming at increasing income and employment in the rural areas.

Footnote

- 1/ Saeng Sanguanruang, Somsak Tambunlertchai, and Nit Sammapan, A Study of Small and Medium Scale Industries in Thailand, (in Thai), National Institute of Development Administration and Thammasat University, 1977. (Here after will be referred to as the SMI Study or the 1976 Survey). The findings of this study have been utilized in a number of research reports and papers. Among them are Saeng Sanguanruang, Nisa Xuto, Preeyanuch Saengpassorn, and Chuchae Piputsitee, Development of Small and Medium Manufacturing Enterprises in Thailand, Association of Development Research and Training Institute of Asia and the Pacific (ADIPA) Report, 1978, Somsak Tambunlertchai, "Employment Effects of Small and Medium Scale Industries in Thailand." Research Report Series No.9, Faculty of Economics, Thammasat University, November 1978, and Somsak Tambunlertchai and Chesada Loohawenchit, "Labour Intensive and Small Scale Manufacturing Industries in Thailand", in Rashid Amjad (ed), The Development of Labour Intensive Industry in ASEAN Countries. International Labour Organization (ILO), 1981. In addition, there was also a Rural off Farm Employment Assessment Project carried out by the Faculty of Economics and Business Administration, Kasetsart University, with collaboration from Michigan State University and Ohio State University in the U.S.A. and other Universities in Thailand. This project focused more on industrial activities in rural villages. The project produced many research reports and working papers. A summary of the major finding of this project can be found in Narongchai Akrasanee, et.al. Rural Off-Farm Employment in Thailand. Industrial Management Co., Ltd., Bangkok, 1983.
- 2/ Bangkok, Samutprakarn, Latumtani, and Nontaburi.
- 3/ In the SMI study, small-scale enterprises were defined to be those with 10 to 49 employees, and medium-scale enterprises were those with 50 to 199 employees. The present study tends to focus more on the small scale category.
- 4/ Studies of regional industries by the Industrial Finance Corporation during 1981 and 1982 revealed that if rice mills were excluded, small-scale manufacturing enterprises (with less than 50 employees) in the North, Northeast, and the South comprised of 98.8 percent, 99.2 percent, and 96.4 percent, respectively. These figures were obtained from the regional offices of the Division of Industrial Economics, Ministry of Industry and the proportion of small scale enterprises turned out to be slightly higher than that obtained from the Factory control Division, Ministry of Industry, which also show that small scale enterprises comprised of over 90 percent in all regions of the country.
- 5/ The classification of market orientation here is made such that whichever firms had part or all of their products exported were classified as exporting firms. For the rest, whichever had part or all of their products sold to Bangkok were classified as under the heading of "Bangkok", and the remaining firms were grouped under those exclusively serving the local market.

Table 1

Total Number of Registered Factories in
16 Provinces in 4 Regions as of 1983

Region/Provinces	Number of Factories		
	Rice mills	Others	Total
<u>Central</u>			
Samut Sakorn	46	550	596
Raj Buri	302	881	1,183
Ayudhya	272	319	591
Sara Buri	218	388	606
Sub-total	838	2,138	2,976
<u>North</u>			
Chiang Mai	893	565	1,458
Nakorn Sawan	663	631	1,294
Lum Poon	234	70	304
Pichit	789	170	965
Sub-total	2,579	1,442	4,021
<u>Northeast</u>			
Nakorn Rachasima	2,329	1,597	3,926
Khon Kaen	1,472	746	2,218
Buri Rum	2,261	211	2,472
Udon Thani	1,973	880	2,853
Sub-total	8,035	3,434	11,469
<u>South</u>			
Song Kla	593	741	1,334
Trang	125	205	330
Surat Thani	434	310	744
Ranong	50	86	136
Sub-total	1,202	1,342	2,544
Total	12,654	8,356	21,010

Source: Factory Contest Division, Ministry of Industry.

Table 2

Number of Factories Classified by Size of Employment
and Regions in 1980*

Size of Employment	Bangkok	Central	Northern	North-eastern	Southern	Total	Percentage for each size
1 - 9	10,019 (48.9)	4,935 (24.1)	1,602 (7.8)	2,415 (11.8)	1,526 (7.5)	20,497 (100.0)	63.3 63.3
10 - 49	4,415 (45.2)	2,410 (24.7)	932 (9.5)	1,257 (12.9)	760 (7.8)	9,774 (100.0)	30.2
40 - 199	507 (29.3)	663 (38.3)	169 (9.8)	281 (16.2)	112 (6.5)	1,732 (100.0)	5.3
200 and over	118 (29.6)	118 (47.1)	43 (10.8)	32 (8.0)	18 (4.5)	399 (100.0)	1.2
Total	15,059 (46.5)	8,196 (25.3)	2,746 (8.5)	3,985 (12.3)	2,416 (7.5)	32,402 (100.0)	100.0

* Excluding rice-mills, saw mills, ice-making and printing firms.

Source: Factory Control Division, Ministry of Industry.

Table 3

Distribution of Sample Firms by Industry and Employment Size

Industry	Employment Size					Total
	19,ss than 10	10-19	20-49	50-99	100 and over	
Food	32	19	12	2	-	65
Beverage and Tobacco	-	2	2	1	2	7
Textiles and Wearing Apparels	4	5	2	2	1	14
Wood Products and Furniture	5	5	4	7	2	23
Printing	6	1	-	-	-	7
Chemical Products	-	2	4	-	-	6
Rubber and Plastic Products	1	1	4	-	1	7
Non-metallic Mineral Products	5	6	15	4	-	30
Fabricated Metal and Machinery	14	4	3	1	-	22
Transport equipment	6	2	2	1	-	11
Others	1	1	-	6	1	9
Total	74	48	48	24	7	201

Source: Survey

Table 4

Distribution of Sample Firms by Industry by Region

Industry	Region				
	Central	North	Northeast	South	Total
Food	13	20	18	14	65
Beverage and Tobacco	-	5	1	1	7
Textiles and Wearing Apparels	5	5	3	1	14
Wood Products and Furniture	5	4	7	7	23
Printing	-	4	3	-	7
Chemical Products	2	-	2	2	6
Rubber and Plastic Products	3	-	3	1	7
Non metallic Mineral Products	15	1	6	8	30
Fabricated Metal and Machinery	4	9	5	4	22
Transport Equipment	3	6	1	1	11
Others	-	-	1	8	9
Total	50	54	50	47	201

Source: Survey

Table 5

Distribution of Sample Firms by Employment Size by Region

Region and Province	Employment Size					Total
	Less than 10	10-19	20-49	50-99	100 and over	
<u>Central</u>	18	12	15	3	2	50
Samut Sakorn	9	5	2	-	1	17
Raj Buri	-	5	7	3	1	16
Ayudhya	7	-	2	-	-	9
Sara Buri	2	2	4	-	-	8
<u>North</u>	29	16	8	-	1	54
Chiang Mai	6	6	5	-	1	18
Nakorn Sawan	8	5	2	-	-	15
Lum Poon	4	3	-	-	-	7
Pichit	11	2	1	-	-	14
<u>Northeast</u>	18	15	10	6	1	50
Nakorn Rachasima	7	5	4	3	-	19
Khon Kaen	8	4	4	1	1	18
Buri Rum	-	3	2	1	-	6
Udon Thani	3	3	-	1	-	7
<u>South</u>	9	5	15	15	3	47
Song Kla	-	1	4	1	-	6
Trang	4	1	5	2	-	12
Surat Thani	-	1	3	2	3	9
Pranong	5	2	3	10	-	20
Total	74	48	48	24	7	201

Source: Survey

Table 6

Year of Establishment, Legal Status, and BOI Promotional
Status and Foreign Investment Participation of Sample by
Size of Employment

Attributes	Employment Size					Total
	Less than 10	10-19	20-49	50-99	100 and over	
<u>Year of Establishment</u>						
Before 1950	4	2	4	3	-	13
1950 - 1959	15	13	5	3	1	37
1960 - 1969	29	14	23	5	4	75
1970 - 1979	23	18	14	11	2	68
1980 - 1984	3	1	2	2	-	8
<u>Legal Status</u>						
Single Proprietorship	70	30	19	7	1	127
Ordinary Partnership	1	2	3	5	-	11
Limited Partnership	2	12	14	6	2	36
Company Limited	1	4	12	6	4	27
<u>BOI Promotional Status</u>						
Currently Promoted	-	-	-	1	-	1
Promoted Previously	1	-	-	-	1	2
Never Promoted	73	48	48	23	6	198
<u>Foreign Investment</u>						
Yes	2	1	1	2	1	3
No	74	47	47	24	6	193

Source: Survey

Table 7
Distribution of Entrepreneurs by Educational Level
by Size, Region and Market of Industry

Classification	Level of Education							
	First 4 years of Primary School	5th to 7th year Primary School	High School	Commercial School	Other Vocational School	University Graduate	Master Degree and Higher	Others
<u>Employment Size</u>								
Les than 10	35 (47.3)	9 (12.1)	20 (27.02)	2 (2.7)	5 (6.7)	2 (2.7)	2	1 (1.3)
10 - 19	10 (20.8)	9 (18.8)	14 (29.2)	2 (4.2)	3 (6.3)	9 (18.8)	1 (2.1)	2
20 - 49	10 (20.8)	7 (14.6)	14 (29.2)	3 (6.3)	2 (4.2)	6 (12.5)	4 (8.3)	2 (4.2)
50 - 99	2 (8.3)	2 (8.3)	10 (41.7)	1 (4.2)	4 (16.7)	5 (20.8)	2	2
100 and over	3 (42.9)	-	3 (42.9)	-	-	-	1 (14.3)	-
<u>Region</u>								
Central	22 (44.0)	4 (8.0)	12 (24.0)	3 (6.0)	2 (4.0)	7 (14.0)	-	-
North	16 (29.6)	5 (9.3)	15 (27.8)	3 (5.6)	6 (11.1)	5 (9.3)	4 (7.4)	-
North-east	9 (16.7)	11 (22.0)	23 (46.0)	2 (4.0)	2 (4.0)	3 (6.0)	-	-
South	13 (27.7)	7 (14.9)	11 (23.4)	-	4 (8.5)	8 (17.0)	1 (2.1)	3 (6.4)
<u>Market</u>								
Export	3 (21.4)	4 (28.6)	2 (14.3)	-	-	2 (14.3)	3 (21.4)	-
Bangkok	16 (27.1)	3 (5.1)	21 (35.6)	5 (8.5)	5 (11.8)	7 (1.7)	1 (1.7)	2 (1.7)
Local	41 (32.0)	20 (15.6)	38 (29.7)	3 (2.3)	9 (7.0)	14 (10.9)	1 (0.8)	2 (1.5)
Total	60 (29.8)	27 (13.4)	61 (30.3)	8 (4.0)	14 (7.0)	23 (11.4)	5 (2.5)	3 (1.5)

Source: Survey

Table 8

Reasons for Locating the Firm in Provinces*

by Size, Region and Market of Industry

Classification	Reasons for Locating Firms there							
	Owner was in the area	Owner Conducted business in area for a long time	Availability of raw material in the area	Good Market potential	Familiar with or having business connection in the area	Availability of skilled labor	Recommended by family/friends/relatives	Others
<u>Employment Size</u>								
Less than 10	40 (54.1)	39 (52.7)	8 (10.8)	5 (6.8)	3 (4.1)	1 (1.4)	-	5 (6.8)
10 - 19	31 (64.6)	24 (50.0)	7 (14.6)	3 (6.3)	1 (2.1)	2 (4.2)	-	2 (4.2)
20 - 49	26 (54.2)	20 (41.7)	11 (22.9)	4 (8.3)	2 (4.2)	2 (4.2)	3 (6.3)	7 (14.6)
50 - 99	11 (45.8)	7 (29.2)	7 (29.2)	4 (16.7)	-	1 (4.2)	1 (4.2)	2 (8.3)
100 and over	4 (57.1)	4 (57.1)	1 (14.3)	-	1 (14.3)	1 (14.3)	-	2 (28.6)
<u>Region</u>								
Central	28 (48.3)	21 (36.2)	8 (13.8)	8 (13.8)	3 (5.2)	2 (3.4)	1 (1.7)	5 (8.6)
North	27 (50.0)	31 (57.4)	12 (22.2)	1 (1.9)	2 (3.7)	3 (5.6)	1 (1.9)	3 (5.6)
North-east	34 (68.0)	22 (44.0)	-	1 (2.0)	-	1 (2.0)	-	-
South	23 (48.9)	20 (42.6)	14 (29.8)	6 (12.8)	2 (4.3)	1 (2.1)	2 (4.3)	10 (21.3)
<u>Market</u>								
Export	9 (64.3)	8 (57.1)	3 (21.4)	1 (7.1)	1 (7.1)	3 (21.4)	1 (7.1)	2 (14.3)
Bangkok	32 (54.2)	28 (47.5)	16 (27.1)	5 (8.5)	1 (1.7)	1 (1.7)	2 (3.4)	8 (13.6)
Local	71 (55.5)	58 (45.3)	15 (11.7)	10 (7.8)	5 (3.9)	3 (2.3)	1 (0.8)	8 (6.3)
Total	112 (55.7)	94 (46.8)	34 (16.9)	16 (8.0)	7 (3.5)	7 (3.5)	4 (2.0)	18 (9.0)

* More than one reason could be cited. Figures in parentheses are percentage of reply in total respondents.

Source: Survey.

Table 9

Distribution of Sample Firms by Major Type of Business
by Size and Industry

Classification	Major Types of Business					
	Finished Products	Parts and Components	Input for other Firms	Repairing or other Services	Assembly of Parts and Components	Others
Employment Size						
Less than 10	39 (52.7)	8 (10.8)	3 (4.1)	10 (13.5)	4 (5.4)	10 (13.5)
10 - 19	25 (54.2)	4 (8.3)	9 (18.8)	2 (4.2)	3 (6.3)	5 (10.4)
20 - 49	26 (54.2)	11 (22.9)	5 (10.4)	2 (4.2)	-	4 (8.3)
50 - 99	14 (58.3)	1 (4.2)	6 (25.0)	-	3 (12.5)	-
100 and over	5 (71.4)	-	1 (14.3)	-	1 (14.3)	-
Industry						
Food	43 (66.2)	4 (6.2)	9 (13.8)	-	1 (1.5)	8 (12.3)
Beverand and Tobacco	3 (42.9)	-	4 (57.1)	-	-	-
Textiles and Wearing Apparels	9 (64.3)	1 (7.1)	1 (7.1)	-	-	3 (21.4)
Wood Products and Furniture	17 (73.9)	3 (13.0)	-	-	-	3 (13.0)
Printing	3 (42.9)	1 (14.3)	-	-	1 (14.3)	2 (28.6)
Chemical Products	4 (66.7)	1 (16.7)	1 (16.7)	-	-	-
Rubber and Plastic Products	3 (42.9)	3 (42.9)	-	-	-	1 (14.3)
Non-metallic Mineral Products	20 (66.7)	6 (20.0)	4 (13.3)	-	-	-
Fabricated Metal and Machinery	4 (18.2)	2 (9.1)	3 (15.6)	9 (40.9)	3 (13.6)	1 (4.5)
Transport equipment	1 (9.1)	3 (27.3)	-	5 (45.5)	1 (9.1)	1 (9.1)
Others	2 (22.2)	-	2 (22.2)	-	5 (55.6)	-
Total	109 (54.2)	24 (11.9)	24 (11.9)	14 (7.0)	11 (5.5)	19 (9.5)

Source: Survey.

Table 10

Regularity of Production Over the Year
by Size, Region and Market of Industry

Classification	Regularity of Production	
	Regular	Irregular
<u>Employment Size</u>		
Less than 10	21 (28.4)	53 (71.6)
10 - 19	12 (25.0)	36 (75.0)
20 - 49	14 (29.2)	34 (70.8)
50 - 99	13 (54.2)	11 (45.8)
100 and over	3 (42.9)	4 (57.1)
<u>Region</u>		
Central	19 (38.0)	31 (62.0)
North	10 (18.5)	44 (81.5)
North-east	17 (34.0)	33 (66.0)
South	17 (36.2)	30 (63.8)
<u>Market</u>		
Export	-	14 (100.0)
Bangkok	22 (37.3)	37 (62.7)
Local	41 (32.0)	87 (68.0)
Total	63 (31.3)	138 (68.7)

Source : Survey

Table 11

Regularity of Production Over the Year by Industry

Industry	Regular	Irregular
Food	16 (24.6)	49 (75.4)
Beverage and Tobacco	1 (14.3)	6 (85.7)
Textiles and Wearing Apparels	4 (28.6)	10 (71.4)
Wood Products and Furniture	9 (39.1)	14 (60.9)
Printing	4 (57.1)	3 (42.9)
Chemical Products	3 (50.0)	3 (50.0)
Rubber and Plastic Products	2 (28.6)	5 (71.4)
Non-metallic Mineral Products	6 (20.0)	24 (80.0)
Fabricated Metal and Machinery	8 (36.4)	14 (63.6)
Transport Equipment	5 (45.5)	6 (54.5)
Others	5 (55.6)	4 (44.4)
Total	63 (31.3)	138 (68.7)

Source : Survey

Table 12.

Most Important Reason for Irregular Production
by Size, Region and Market of Industry

Classification	Reason				
	Seasonal availability of raw material	Seasonal demand for products	Seasonal labour supply	Overall production process seasonal	Others
<u>Employment Size</u>					
Less than 10	3 (5.9)	35 (68.6)	-	9 (17.6)	1 (7.8)
10 - 19	8 (22.2)	14 (38.9)	6 (16.7)	5 (13.9)	3 (8.3)
20 - 49	5 (16.1)	9 (29.0)	1 (3.2)	13 (41.9)	3 (9.7)
50 - 99	1 (11.1)	3 (33.3)	-	5 (55.6)	-
100 and over	-	2 (50.0)	-	2 (50.0)	-
<u>Region</u>					
Central	4 (12.9)	12 (38.7)	3 (9.7)	10 (32.3)	2 (6.4)
North	7 (15.9)	25 (56.8)	3 (6.8)	7 (15.9)	2 (4.8)
North-east	2 (6.4)	22 (71.0)	1 (3.2)	6 (19.4)	-
South	4 (16.0)	4 (16.0)	-	11 (44.0)	6 (24.0)
<u>Market</u>					
Export	4 (33.3)	2 (16.7)	-	5 (41.7)	1 (6.3)
Bangkok	6 (16.7)	11 (30.6)	6 (16.7)	11 (30.6)	2 (5.6)
Local	7 (8.4)	50 (60.2)	1 (1.2)	18 (21.7)	7 (8.4)
Total	17 (13.0)	63 (48.1)	7 (5.3)	34 (26.0)	10 (7.6)

Source : Survey

Table 13

Capacity Utilization by Size, Region and Market of Industry

Classification	At full capacity	At less than full capacity	Rate of capacity utilization
<u>Employment Size</u>			
Less than 10	27 (36.5)	47 (63.5)	69.98
10 - 19	21 (43.8)	27 (56.2)	75.61
20 - 49	28 (58.3)	20 (41.7)	79.05
50 - 99	15 (15.5)	9 (37.5)	67.36
100 and over	4 (57.1)	3 (42.9)	58.01
<u>Region</u>			
Central	26 (52.0)	24 (48.0)	64.88
North	17 (31.5)	37 (68.5)	76.95
North-east	20 (40.0)	30 (60.0)	64.81
South	32 (68.1)	15 (31.9)	80.77
<u>Market</u>			
Export	6 (42.9)	8 (57.1)	75.58
Bangkok	30 (57.8)	29 (49.2)	68.67
Local	59 (46.1)	69 (53.9)	76.68
Total	95 (47.3)	106 (52.7)	73.96

Source : Survey

Table 14

Capacity Utilization by Industry

Industry	Utilization at full capacity	At less than full capacity	Rate of capacity Utilization
Food	26 (40.0)	39 (60.0)	72.27
Beverage and tobacco	1 (14.3)	6 (85.7)	80.72
Textiles and wearing apparels	5 (35.7)	9 (64.3)	63.88
Wood products and apparels	11 (47.8)	12 (52.2)	62.96
Printing	2 (28.6)	5 (71.4)	60.36
Chemical products	2 (33.3)	4 (66.7)	68.99
Rubber and plastic products	3 (42.9)	4 (57.1)	63.98
Non-metallic mineral products	21 (70.0)	9 (30.0)	94.43
Fabricated metal and machinery	10 (45.5)	12 (54.5)	78.45
Transport equipment	7 (63.6)	4 (36.4)	83.27
Others	7 (77.8)	2 (22.2)	63.16
Overall average	95 (47.3)	106 (52.7)	73.96

Source : Survey

Average Increase or Decrease in Production Between
1978 - 1983 by Size, Region and Market of Industry

Classification	With Increased Production		With decreased Production	
	Number of firms	Average percentage per year	Number of firms	Average percentage per year
<u>Employment Size</u>				
Less than 10	25 (33.8)*	10.0	21 (28.4)	11.0
10 - 19	28 (58.3)	10.3	15 (31.3)	6.3
20 - 49	29 (60.4)	11.1	8 (16.7)	4.6
50 - 99	14 (58.3)	10.7	7 (29.2)	7.4
100 and over	4 (57.1)	5.5	1 (14.3)	6.0
<u>Region</u>				
Central	24 (48.0)	10.1	7 (14.0)	5.8
North	30 (55.6)	13.3	12 (22.2)	13.3
North-east	29 (58.0)	7.2	12 (24.0)	5.9
South	17 (36.1)	9.6	21 (44.7)	7.1
<u>Market</u>				
Export	8 (57.1)	12.0	5 (35.7)	5.6
Bangkok	36 (61.0)	11.8	8 (13.6)	7.8
Local	56 (43.8)	9.1	39 (30.5)	8.4
Total	100 (49.8)	10.3	52 (25.9)	8.1

* Figures in parentheses are percentage of reply to total respondents

Source : Survey.

Table 16

Average Increase or Decrease in Production Between 1978-1983 by Industry

Industry	Increase		Decrease	
	No. of Firms	% Increase Per year	No. of Firms	% decrease per year
Food	27 (41.5)*	11.6	18 (27.7)	6.4
Beverage and tobacco	2 (28.6)	5.0	4 (57.1)	5.8
Textiles and wearing apparels	6 (42.9)	12.8	4 (23.6)	13.0
Wood products and furniture	16 (69.6)	6.8	3 (13.0)	5.7
Printing	5 (71.4)	20.0	-	-
Chemical products	2 (33.3)	3.5	2 (33.3)	4.5
Rubber and plastic products	7 (100.0)	8.9	-	-
Non-metallic mineral products	19 (63.3)	10.9	3 (10.0)	5.7
Fabricated metal and machinery	9 (40.9)	8.1	10 (45.5)	13.0
Transport equipment	5 (45.5)	7.4	1 (9.1)	4
Others	2 (22.2)	17.0	7 (77.8)	7.4
Total	100 (49.8)	10.3	52 (25.9)	8.1

* Percentage of reply in total respondents.

Source : Survey

Table 17

Plan for Expansion in Next 2-3 Years
by Size, Region and Market of Industry

Classification	Plan for Expansion		
	Yes	No.	Uncertain
<u>Employment Size</u>			
Less than 10	10 (13.5)	57 (77.0)	7 (9.5)
10 - 19	5 (10.4)	37 (77.1)	6 (12.5)
20 - 49	8 (16.7)	36 (75.0)	4 (8.3)
50 - 99	7 (27.2)	13 (54.2)	4 (16.7)
100 and over	1 (14.3)	5 (71.4)	1 (14.3)
<u>Region</u>			
Central	9 (18.0)	38 (76.0)	3 (6.0)
North	11 (20.4)	39 (72.2)	4 (7.4)
North-east	6 (12.0)	37 (74.0)	7 (14.0)
South	5 (17.6)	34 (72.3)	8 (17.0)
<u>Market</u>			
Export	3 (21.4)	7 (50.0)	4 (28.6)
Bangkok	12 (20.3)	41 (69.5)	6 (10.2)
Local	16 (12.5)	100 (78.1)	12 (9.4)
Total	31 (15.4)	148 (73.6)	22 (10.6)

Source : Survey

Table 18

Plan for Expansion in Next 2-3 Years by Industry

Industry	Plan Expansion		
	Yes	No	Uncertain
Food	7 (10.8)	50 (76.9)	8 (12.3)
Beverage and tobacco	1 (14.3)	5 (71.4)	1 (14.3)
Textile and wearing apparels	-	12 (85.7)	2 (14.3)
Wood products and furniture	4 (17.4)	16 (69.6)	- (13.0)
Printing	1 (14.3)	6 (85.7)	-
Chemical products	3 (50.0)	3 (50.0)	-
Rubber and plastic products	2 (28.6)	5 (71.4)	-
Non-metallic mineral products	6 (20.0)	21 (70.0)	3 (10.0)
Fabricated metal and machinery	4 (18.2)	16 (72.7)	2 (9.1)
Transport and equipment	3 (27.3)	8 (72.7)	-
Others	-	6 (66.7)	3 (33.3)
Total	31 (15.4)	148 (73.6)	22 (11.0)

Source : Survey

Table 19

Most Important Reason for Expansion in Next 2-3 Year

by Size, Region and Market of Industry

Classification	Reason					
	Local market is expanding	Better financial status	Increased supply of raw materials	Decreased competition	Increased export	Others
<u>Employment Size</u>						
Less than 10	5 (50.0)	1 (10.0)	-	2 (20.0)	-	2 (20.0)
10 - 19	2 (40.0)	1 (20.0)	2 (40.0)	-	-	-
20 - 49	1 (12.5)	5 (62.5)	1 (12.5)	-	-	1 (12.5)
50 - 99	7 (100.0)	-	-	-	-	-
100 and over	-	-	-	-	1 (100.0)	-
<u>Region</u>						
Central	3 (33.3)	3 (33.3)	1 (11.1)	1 (11.1)	-	1 (11.1)
North	4 (36.4)	2 (18.2)	1 (9.1)	1 (9.1)	1 (9.1)	2 (18.2)
North-East	5 (83.3)	1 (16.7)	-	-	-	-
South	3 (60.0)	1 (20.0)	1 (20.0)	-	-	-
<u>Market</u>						
Export	-	1 (33.3)	1 (33.3)	-	1 (33.3)	-
Bangkok	8 (66.7)	2 (16.7)	-	1 (8.3)	-	1 (8.3)
Local	7 (43.8)	4 (25.0)	2 (12.5)	1 (6.3)	-	2 (12.5)
Total	15 (48.4)	7 (22.6)	3 (9.7)	2 (6.5)	1 (3.2)	3 (9.7)

Source : Survey

Most Important Reason for Not Expanding
by Size, Region and Market of Industry

Classification	Reason							
	Saturated local market	Worse financial status	Increased competition	Shortage of raw material	Poor health of entrepreneurs	Need too much investment	Decreased exports	Others
<u>Employment Size</u>								
Less than 10	17 (29.8)	11 (19.3)	8 (14.0)	3 (5.2)	3 (5.3)	-	-	15 (26.3)
10 - 19	12 (32.4)	7 (18.9)	6 (16.2)	2 (5.4)	1 (2.7)	2 (5.4)	1 (2.7)	6 (16.2)
20 - 49	11 (30.5)	7 (19.4)	6 (16.6)	4 (11.1)	-	2 (5.5)	1 (2.8)	5 (13.9)
50 - 99	3 (23.1)	-	1 (7.7)	6 (16.2)	-	-	-	3 (23.1)
100 and over	1 (20.0)	-	1 (20.0)	1 (20.0)	1 (20.0)	-	-	1 (20.0)
<u>Region</u>								
Central	10 (26.3)	8 (21.1)	7 (18.4)	1 (2.6)	3 (7.9)	2 (5.3)	-	7 (18.4)
North	12 (30.8)	7 (17.9)	7 (17.9)	-	2 (5.1)	-	2 (5.1)	9 (23.0)
North-east	15 (40.5)	9 (24.3)	5 (13.5)	1 (2.7)	-	-	-	7 (18.3)
South	7 (20.6)	1 (2.9)	3 (8.8)	14 (41.2)	-	2 (5.9)	-	7 (20.6)
<u>Market</u>								
Export	2 (28.6)	2 (28.6)	-	-	-	-	2 (28.6)	1 (14.3)
Bangkok	11 (26.8)	4 (9.8)	7 (17.1)	5 (12.2)	3 (7.3)	2 (4.9)	-	9 (22.0)
Local	31 (31.0)	19 (19.0)	15 (15.0)	11 (11.0)	2 (2.0)	2 (2.0)	-	20 (20.0)
Total	44 (29.7)	25 (16.9)	22 (14.9)	16 (10.8)	5 (3.4)	4 (2.7)	2 (1.4)	30 (20.3)

Source : Survey

Table 21

Most Important Source of Production Technology
by Size and by Industry

Classification	Source of Production Technology							
	Own Design	Copy from other factories	Purchase from abroad	Adapt foreign design	Copy foreign product	Aid from government agencies	Foreign investing companies	Others
<u>Employment Size</u>								
Less than 10	52 (70.3)	13 (17.6)	2 (2.7)	1 (1.4)	1 (1.4)	-	-	5 (6.8)
10 - 19	28 (58.3)	2 (4.2)	5 (10.4)	5 (10.4)	-	2 (4.2)	-	6 (12.5)
20 - 49	31 (64.6)	3 (6.3)	6 (12.5)	3 (6.3)	-	1 (2.1)	-	4 (8.3)
50 - 99	12 (50.0)	1 (4.2)	4 (16.7)	2 (8.3)	1 (4.2)	3 (12.5)	1 (4.2)	-
100 and over	6 (85.7)	-	-	-	-	-	1 (14.3)	-
<u>Industry</u>								
Food	41 (63.1)	11 (16.9)	5 (7.7)	6 (9.2)	-	1 (1.5)	-	1 (1.5)
Beverage and Tobacco	2 (28.6)	-	2 (28.5)	1 (14.3)	-	-	1 (14.3)	1 (14.3)
Textiles and Wearing Apparels	7 (50.0)	-	-	-	-	-	1 (7.1)	6 (42.9)
Wood Products and Furniture	13 (56.5)	2 (8.7)	2 (8.7)	2 (4.3)	1 (8.7)	2	-	1 (4.3)
Printing	4 (57.1)	1 (14.3)	1 (14.3)	-	-	-	-	1 (14.3)
Chemical Products	6 (100.0)	-	-	-	-	-	-	-
Rubber and Plastic	5 (71.4)	-	1 (14.3)	1 (14.3)	-	-	-	-
Non-metallic Mineral Products	22 (73.3)	3 (10.0)	1 (3.3)	1 (3.3)	-	1 (3.3)	-	2 (6.7)
Fabricated Metal and Machinery	16 (72.7)	1 (4.5)	3 (13.6)	-	1 (4.5)	-	-	1 (4.5)
Transport	8 (72.7)	1 (9.1)	-	-	-	-	-	2 (18.2)
Others	5 (55.6)	-	2 (22.2)	-	-	2 (22.2)	-	-
Total	129 (64.2)	19 (9.5)	17 (8.5)	11 (5.5)	2 (1.0)	6 (3.0)	2 (1.0)	15 (7.5)

Source: Survey.

Table 22

Improvement in Production Technology by Size and by Industry

Classification	Improvement in Technology		Type of Improvement				
	Yes	No	Use of new Machinery/Equipment	Improved product quality	Improved quality control	Increased mechanization	Others
Employment Size							
Less than 10	22 (29.7)	52 (70.3)	7 (35.0)	4 (20.0)	3 (15.0)	3 (15.0)	4 (20.0)
10 - 19	17 (35.4)	31 (64.6)	7 (31.2)	7 (41.2)	2 (11.8)	2 (11.8)	1 (5.9)
20 - 49	22 (45.8)	26 (54.2)	16 (72.7)	2 (9.1)	1 (4.5)	1 (4.5)	4 (18.2)
50 - 99	12 (50.0)	12 (50.0)	3 (27.3)	2 (18.2)	1 (9.1)	3 (27.3)	2 (18.2)
100 and over	1 (14.3)	6 (85.7)	1 (100.0)	-	-	-	-
Industry							
Food	26 (40.0)	39 (60.0)	8 (33.3)	4 (16.7)	4 (16.7)	3 (12.5)	7 (29.2)
Beverage and Tobacco	-	7 (100.0)	-	-	-	-	-
Textiles and Wearing Apparels	3 (21.4)	11 (78.6)	2 (66.7)	1 (33.3)	-	-	-
Wood Products	9 (39.1)	14 (16.4)	5 (50.0)	2 (20.0)	1 (10.0)	1 (10.0)	1 (10.0)
Printing	-	7 (100.0)	-	-	-	-	-
Chemical Products	3 (50.0)	3 (50.0)	1 (25.0)	1 (25.0)	-	2 (50.0)	-
Rubber and Plastic	5 (71.4)	2 (28.6)	4 (80.0)	1 (20.0)	-	-	-
Non-metallic	9 (30.0)	21 (70.0)	6 (66.7)	1 (11.1)	-	1 (11.1)	1 (11.1)
Fabricated Metal and Machinery	11 (50.0)	11 (50.0)	6 (60.0)	2 (20.0)	1 (10.0)	-	1 (10.0)
Transport	4 (36.4)	7 (63.6)	2 (40.0)	2 (40.0)	-	-	1 (20.0)
Others	4 (44.4)	5 (55.6)	-	-	1 (25.0)	2 (50.0)	1 (25.0)
Total	4 (36.8)	5 (63.2)	- (16.9)	- (3.5)	1 (4.5)	2 (7.5)	1 (5.5)

Source: Survey.

Table 23

Expected Source of Information on Technology
by Size, Region and Market of Industry

Classification	Expected Source of Information on Technology							
	Within own firm	Other firms	Friends/Relatives	Government agency	Research institute	University	Foreign sources	Other
<u>Employment Size</u>								
Less than 10	29 (39.2)	12 (16.2)	21 (28.4)	6 (8.1)	1 (1.4)	3 (4.1)	7 (9.5)	19 (25.7)
10 - 19	22 (45.8)	7 (14.6)	9 (18.8)	5 (10.4)	6 (12.5)	2 (4.2)	7 (14.6)	13 (27.1)
20 - 49	12 (25.0)	11 (22.9)	6 (12.5)	8 (16.7)	4 (8.3)	1 (2.1)	9 (18.8)	17 (35.4)
50 - 99	5 (20.8)	7 (29.2)	2 (8.3)	4 (16.7)	1 (4.2)	-	1 (4.2)	8 (33.3)
100 and over	2 (28.6)	3 (42.9)	1 (14.3)	-	-	-	1 (14.3)	3 (42.9)
<u>Region</u>								
Central	9 (18.0)	7 (14.0)	9 (18.0)	6 (12.0)	1 (2.0)	-	4 (8.0)	26 (52.0)
North	30 (55.6)	9 (16.7)	21 (38.9)	10 (18.5)	9 (16.7)	6 (11.1)	14 (25.9)	9 (16.7)
North-east	27 (54.0)	8 (16.0)	4 (8.0)	1 (2.0)	-	-	3 (6.0)	7 (14.0)
South	4 (8.5)	16 (34.0)	5 (10.6)	6 (12.8)	2 (4.3)	-	4 (8.5)	18 (38.3)
<u>Market</u>								
Export	6 (42.9)	4 (28.6)	3 (21.4)	2 (14.3)	3 (21.4)	2 (14.3)	5 (35.7)	2 (14.3)
Bangkok	11 (18.6)	13 (22.0)	13 (22.0)	8 (13.6)	2 (3.4)	1 (1.7)	5 (8.5)	26 (44.1)
Local	53 (41.4)	23 (18.0)	23 (18.0)	13 (10.2)	7 (5.5)	3 (2.3)	15 (11.7)	32 (25.0)
Total	70 (34.8)	40 (19.9)	39 (19.4)	23 (11.4)	12 (6.0)	6 (3.0)	25 (12.4)	60 (29.9)

Source: Survey.

Table 24
 Total and Average Sales of Sample' Firms
 by Size, Region and Market of Industry

Classification	Number of Firms	Total Sales (Thousand baht)	Average Sales per firm (thousand baht)
<u>Employment Size</u>			
Less than 10	73	82,928	1,136
10 - 19	45	206,325	4,585
20 - 49	47	238,948	5,084
50 - 99	24	160,104	6,671
100 and over	7	350,447	50,921
<u>Region</u>			
Central	48	323,280	6,735
North	52	171,496	3,298
North-east	50	198,400	3,968
South	46	351,486	7,641
<u>Market</u>			
Export	13	265,460	20,420
Bangkok	56	395,136	7,056
Local	127	384,084	3,024
Total	196	1,044,680	5,330

Source : Survey

Table 25

Total and Average Sales of Sample Firms by Industry

Industry	No. of Firms	Total Sales (thousand baht)	Average Sales (thousand baht)
Food	63	162,918	2,586
Beverage and Tobacco	7	127,645	18,235
Textiles and Wearing Apparels	12	40,217	3,351
Wood Products and Furniture	23	193,315	8,405
Printing	7	2,884	412
Chemical Products	6	64,878	10,813
Rubber and Plastic Products	7	106,498	15,214
Non-metallic Mineral Product	29	187,920	6,480
Fabricated Metal and Machinery	22	27,434	1,247
Transport Equipment	11	6,556	596
Others	9	124,436	13,826
Total	196	1,044,680	5,330

Source : Survey

Table 26

Major Marketing Method by Size, Region,
and Market of Industry

Classification	Marketing Method			
	Find own markets	Sell to regular customers	Sell on contract	Others
<u>Size of Employment</u>				
Less than 10	14 (18.9)	59 (79.7)	1 (1.4)	-
10 - 19	17 (32.6)	31 (59.6)	1 (1.9)	3 (5.8)
20 - 49	11 (22.4)	34 (69.4)	2 (4.1)	2 (4.1)
50 - 99	6 (24.0)	19 (76.0)	-	-
100 and over	5 (52.5)	3 (37.5)	-	-
<u>Region</u>				
Central	17 (31.5)	36 (66.7)	1 (1.8)	-
North	15 (26.3)	37 (64.9)	2 (3.5)	3 (5.3)
North-east	12 (24.0)	38 (76.0)	-	-
South	9 (19.1)	35 (74.5)	1 (2.1)	2 (4.3)
<u>Market</u>				
Export	6 (40.0)	7 (46.7)	-	2 (13.3)
Bangkok	21 (32.8)	42 (65.6)	1 (1.6)	-
Local	26 (20.2)	97 (75.2)	3 (2.3)	3 (2.3)
Total	53 (25.5)	146 (70.2)	4 (1.9)	5 (2.4)

Source: Survey.

Table 27

Export Sales by Employment Size, Region, and Industry

Classification	Number of firms without export sales	Number of firms with export sales	Percentage of export to total sales
<u>Employment size</u>			
Less than 10	74	-	-
10 - 19	44	4	1.2
20 - 49	42	6	3.1
50 - 99	23	1	0.01
100 and over	4	3	14.0
<u>Region</u>			
Central	48	2	0.3
North	49	6	4.3
North-east	48	2	0.7
South	42	4	14.2
<u>Industry</u>			
Food	60	5	0.9
Beverage and tobacco	3	4	5.7
Textiles and wearing apparels	14	-	-
Wood products and furniture	23	-	-
Printing	7	-	-
Chemical products	5	1	0.002
Rubber and plastic products	5	2	2.5
Non-metallic mineral products	29	1	0.5
Fabricated metal and machinery	22	-	-
Transport equipment	11	-	-
Others	8	1	40.2
Total	187	14	5.7

Source: Survey.

Table 28

Major Source of Competition by Size, Region and
Market of Industry

Classification	Major Source of Competition			
	Competition from foreign products	Competition from larger local producers	Competition from equal/smaller sized local producers	None
<u>Employment Size</u>				
Less than 10	2 (2.7)	39 (52.7)	41 (55.4)	8 (10.8)
10 - 19	3 (6.2)	18 (37.5)	30 (62.5)	9 (18.7)
20 - 49	6 (12.5)	26 (41.6)	28 (58.3)	8 (16.6)
50 - 99	1 (4.2)	7 (29.1)	8 (33.3)	11 (35.8)
100 and over	3 (42.8)	2 (28.6)	1 (14.3)	4 (57.1)
<u>Region</u>				
Central	2 (4.0)	21 (42.2)	38 (76.0)	7 (14.0)
North	7 (12.9)	28 (51.8)	30 (55.5)	6 (11.1)
North-east	3 (6.0)	21 (42.0)	17 (34.0)	10 (20.0)
South	3 (6.4)	16 (34.0)	23 (48.9)	17 (36.2)
<u>Market</u>				
Export	9 (64.3)	5 (35.7)	7 (50.0)	1 (7.1)
Bangkok	3 (5.1)	24 (40.7)	35 (59.3)	13 (22.0)
Local	3 (2.3)	57 (44.5)	66 (51.5)	26 (20.3)
Total	15 (7.4)	86 (42.8)	108 (53.7)	40 (19.9)

Source: Survey.

Table 29

Total and Average Employment by Firm Size, Region and
Market of Industry

Classification	No. of Firms	Total Employment (persons)	Average Employment (persons)
<u>Employment Size</u>			
Less than 10	74	414	5.6
10 - 19	48	634	13.2
20 - 49	48	1,368	28.5
50 - 99	24	1,404	58.5
100 and over	7	1,064	152.3
<u>Region</u>			
Central	50	1,311	26.2
North	54	767	14.2
North-east	50	1,020	20.4
South	47	1,786	38.0
<u>Market</u>			
Export	14	764	54.5
Bangkok	59	1,906	32.3
Local	128	2,214	17.3
Total	201	4,884	24.3

Source : Survey

Table 30

Total and Average Employment by Industry

Industry	No. of Firms	Total Employment	Average Employment
Food	65	844 (18.1)	12.6
Beverage and tobacco	7	444 (9.1)	63.4
Textiles and wearing apparel	14	426 (8.7)	30.4
Wood products and furniture	23	897 (18.4)	39.0
Printing	7	33 (0.7)	4.7
Chemical products	6	126 (2.6)	21.0
Rubber and plastic products	7	360 (7.4)	51.4
Non-metallic mineral products	30	798 (16.3)	26.6
Fabricated metal and machinery	22	277 (5.7)	12.6
Transport equipment	11	193 (4.0)	17.5
Mining	7	395 (8.1)	56.4
Others	2	54 (1.1)	27.0
Total	201	4,384 (100.0)	24.3

Source : Survey

Table 31

Share of Male and Female Employment by Firm Size,
Region and Market of Industry

Classification	Share of Employment		
	Male	Female	No. of Workers
<u>Employment Size</u>			
Less than 10	75.0	25.0	414
10 - 19	70.5	29.5	634
20 - 49	71.6	28.4	1,368
50 - 99	70.9	29.1	1,404
100 and over	63.5	36.5	1,066
<u>Region</u>			
Central	61.1	38.9	1,310
North	58.5	41.5	767
Northeast	67.6	32.4	1,020
South	92.2	17.8	1,786
<u>Market</u>			
Export	67.2	32.8	763
Bangkok	63.5	36.5	1,906
Local	76.3	23.7	2,214
Total	70.0	30.0	4,884

Source : Survey

Table 32

Share of Male and Female Employees by Industry

Industry	Male	Female	No. of Workers
Food	74.3	25.7	884
Beverage and tobacco	43.2	56.8	444
Textiles and wearing apparel	29.8	70.2	426
Wood products and furniture	90.6	19.4	897
Printing	60.4	39.6	33
Chemical products	57.1	42.9	126
Rubber and plastic products	77.5	22.5	360
Non-metallic mineral products	65.8	34.2	798
Fabricated metal and machinery	94.4	5.6	277
Transport equipment	96.6	3.4	193
Mining	86.5	13.5	395
Others	50.0	50.0	54
Total	70.0	30.0	4,884

Source : Survey

Table 33

Major Source of Workers Employed by Size, Region
and Market of Industry

Classification	Major Source of Workers			
	Within same provinces	Nearby provinces	Distant provinces	No outside workers employed
<u>Employment Size</u>				
Less than 10	55 (74.3)	3 (4.1)	1 (1.3)	15 (20.3)
10 - 19	39 (81.8)	2 (4.4)	7 (14.8)	-
20 - 49	40 (83.3)	3 (6.2)	5 (10.4)	-
50 - 99	15 (62.4)	4 (16.7)	5 (20.8)	-
100 and over	7 (100.0)	-	-	-
<u>Region</u>				
Central	35 (70.0)	1 (2.0)	8 (16.0)	5 (10.0)
North	40 (74.0)	4 (7.4)	-	10 (18.6)
North-east	48 (96.0)	-	2 (4.0)	-
South	33 (70.2)	7 (14.9)	7 (14.9)	-
<u>Market</u>				
Export	13 (92.8)	-	1 (7.1)	-
Bandkok	46 (77.9)	4 (6.8)	9 (15.2)	-
Local	97 (75.8)	8 (6.2)	8 (6.2)	15 (11.7)
Total	156 (77.6)	12 (5.9)	18 (8.9)	15 (7.5)

Source: Survey.

Table 34

Number of Firm with Employment in Each Job Category
by Employment Size of the Firm

Number of Responding Firm/ Job Category	Number of Firms with Employment in Each Job Category					Total
	Less than 10	10-19	20-49	50-99	100 and Over	
Number of responding firm	59	48	48	24	7	186
General Manager/Managing director	58	45	46	22	7	178
Department/Section manager	1	3	11	8	5	28
Sales personal	7	4	6	4	3	24
Engineers	-	-	1	2	1	4
Chemist/pharmacists	-	-	3	-	2	5
Accountants	-	2	2	5	1	10
Other employees with bachelor degree	1	-	2	-	-	3
Secretaries/typists	2	10	14	9	3	38
Technical staff with diploma	-	1	7	5	1	14
Low level technical staff	3	5	6	2	1	17
Production/factory manager	8	8	14	9	4	43
Foreman	14	8	18	13	3	56
Labourers	57	47	47	23	7	181
Others	3	3	9	3	1	24

Source : Survey

Table 35

Average Monthly Salary of Male and Female Employees
by Job Category and Firm Size*

(baht)

Job Category	Employment Size					Overall Average
	Less than 10	10-19	20-49	50-99	100 and over	
General Manager	1,250 (300)	2,080 (1,000)	3,540 (4,400)	5,030 (-)	8,500 (-)	2,820 (1,340)
Dept./Section manager	- (-)	3,170 (-)	6,390 (-)	4,810 (5,000)	5,140 (-)	5,290 (1,670)
Sales personnel	930 (1,260)	1,770 (-)	2,980 (1,600)	6,830 (2,170)	5,500 (-)	3,710 (1,310)
Accountant/Financial employees with degree	- (-)	- (2,500)	- (3,900)	3,750 (-)	- 9,000	3,750 (3,630)
Secretaries/Typists	2,000 (-)	2,580 (2,070)	2,690 (2,540)	3,380 (2,580)	3,000 (3,250)	2,860 (2,480)
Technical staff	- (-)	3,000 (-)	3,630 (-)	2,700 (-)	6,000 (-)	3,040 (-)
Production/Factory manager	990 (-)	1,590 (-)	3,650 (2,000)	3,680 (-)	5,880 (-)	2,970 (2,000)
Foreman	1,640 (-)	2,360 (1,900)	2,700 (1,700)	3,440 (-)	3,170 (3,500)	2,580 (2,140)
Laborers	1,460 (1,160)	1,720 (1,470)	1,710 (1,500)	1,690 (1,530)	2,000 (1,860)	1,640 (1,440)
Low level technical staff	2,170 (-)	3,100 (-)	2,600 (1,800)	2,250 (-)	1,900 ()	2,590 (1,800)

* Figures in parenthesis are monthly salary for female employees.

Source: Survey.

Table 36

New Employment and Job Quits in 1983 by Firm Size,
Region and Market of Industry
(persons)

Classification	Average Employment		Job Quits	
	Number	% of total	Number	% of total
<u>Employment Size</u>				
Less than 10	105	25	106	26
10 - 19	101	16	108	17
20 - 49	165	12	190	14
50 - 99	306	22	288	21
100 and over	70	7	41	4
<u>Region</u>				
Central	233	18	231	18
North	58	8	90	12
Northeast	171	17	119	12
South	290	16	208	16
<u>Market</u>				
Export	83	11	64	8
Bangkok	285	15	300	16
Local	384	17	365	17
Total	747	15	728	15

Source : Survey

Table 37

Increase/Decrease in Employment During 1978-1983
by Employment Size of the Firm

Increase/Decrease	Employment Size					Total
	Less than 10	10-19	20-49	50-99	100 and Over	
Firms with increase in employment	10	14	19	9	5	57
<u>Number of increased workers</u>						
1-4	10	12	8	1	-	31
5-9	-	-	6	3	1	10
10-19	-	2	5	2	1	10
20 and over	-	-	-	3	3	6
Average increase per firm	1.7	3.5	6.8	14.0	21.8	7.5
Firms with decreased in employment	9	12	9	7	-	37
<u>Number of decreased workers</u>						
1-4	6	5	4	1	-	16
5-9	3	3	1	4	-	11
10-19	-	1	-	1	-	2
20 and over	-	3	4	1	-	8
Average decrease per firm	3.8	9.8	17.3	12.3	-	10.6

Source : Survey

Table 38

Most Serious Problems on Employees by Size,

Classifications	Problems								
	High seasonality of labor force	High rate of labor turnover	Skilled workers are hard to find	High absenteeism rate	Skilled workers bidded away competitors	High wage demand by workers	Labor not skilled enough	Damage cause by workers	Others
<u>Size of Employment</u>									
Less than 10	15 (36.6)	7 (17.1)	9 (22.0)	3 (7.3)	2 (4.9)	1 (2.4)	3 (7.3)	-	1 (2.4)
10 - 19	10 (26.3)	6 (15.8)	6 (15.8)	7 (8.4)	3 (7.9)	3 (7.9)	1 (2.6)	2 (5.3)	-
20 - 49	5 (13.9)	3 (25.0)	6 (16.7)	7 (19.4)	2 (5.6)	2 (5.6)	3 (8.3)	2 (5.6)	-
50 - 99	4 (22.2)	9 (50.0)	2 (11.1)	-	1 (5.6)	1 (5.6)	-	1 (5.6)	-
100 and over	1 (20.0)	1 (20.0)	2 (40.0)	1 (20.0)	-	-	-	-	-
<u>Region</u>									
Central	3 (8.6)	15 (42.9)	4 (11.4)	6 (17.1)	1 (2.9)	1 (2.9)	3 (8.6)	1 (2.9)	1 (2.9)
North	15 (38.5)	4 (10.3)	11 (28.2)	3 (7.7)	-	3 (7.7)	3 (7.7)	1	1
North-east	17 (47.2)	1 (2.8)	5 (13.9)	5 (13.9)	5 (13.9)	2 (5.6)	-	1 (2.8)	-
South	-	12 (42.9)	5 (17.8)	4 (14.3)	2 (7.1)	1 (3.6)	1 (3.6)	3 (10.7)	-
<u>Market</u>									
Export	4 (40.0)	2 (20.0)	2 (20.0)	2 (20.0)	-	-	-	-	-
Bangkok	6 (13.0)	15 (32.6)	10 (21.7)	8 (17.4)	1 (2.1)	4 (8.7)	2 (4.3)	-	-
Local	25 (30.5)	15 (18.3)	13 (15.8)	8 (9.8)	7 (8.5)	3 (3.7)	5 (6.1)	5 (6.1)	1 (1.2)
Total	35 (25.4)	32 (23.2)	25 (18.1)	18 (13.0)	8 (5.8)	7 (5.1)	7 (5.1)	5 (3.6)	1 (0.7)

Source: Survey

Table 39

Source of Machinery Equipment by Size,
Region and Market of Industry

Classification	Percent of total value		
	Produced Locally	Imported Directly	Imported Products Bought Locally
<u>Employment Size</u>			
Less than 10	69.5	2.1	28.4
10 - 19	57.6	2.6	39.8
20 - 49	51.8	10.7	37.5
50 - 99	48.3	-	51.7
100 and over	45.7	28.5	25.8
<u>Region</u>			
Central	69.3	4.7	26.0
North	69.1	7.1	23.7
North-east	50.0	1.6	48.4
South	46.1	6.4	47.5
<u>Market of Industry</u>			
Export	57.0	20.0	23.0
Bangkok	56.2	21.2	22.6
Local	32.6	6.1	61.3
Total	58.9	5.0	36.1

Source : Survey

Table 40

Source of Raw Materials by Size, Region and Market of Industry

(Percent)

Classification	Local	Source of Raw Materials	
		Imported Directly	Imported Bought Locally
<u>Employment Size</u>			
Less than 10	91.8	-	8.2
10 - 19	89.1	1.1	9.8
20 - 49	89.1	0.7	10.2
50 - 99	89.3	-	11.7
100 and over	83.6	1.4	15.0
<u>Region</u>			
Central	94.1	-	5.9
North	83.1	1.1	15.8
North-east	91.4	-	8.6
South	90.8	0.7	8.5
<u>Market</u>			
Export	93.3	0.7	6.0
Bangkok	91.8	-	8.2
Local	87.9	1.4	10.7
Total	90.9	0.5	8.6

Source : Survey

Table 41

Most Important Problem on Raw Materials by Size,
Region and Market of Industry

Classification	Problems					
	Too expensive	Insufficient supply	Irregular quality	Poor quality	Others	None
<u>Employment Size</u>						
Less than 10	31 (41.9)	12 (16.2)	7 (9.4)	7 (.94)	-	17 (23.0)
10 - 19	18 (37.5)	7 (14.6)	9 (18.7)	3 (6.2)	2 (4.1)	9 (18.7)
20 - 49	17 (14.6)	12 (25.0)	1 (2.1)	5 (10.4)	3 (6.2)	10 (20.8)
50 - 99	5 (20.8)	5 (20.8)	4 16.6	2 (8.3)	1 (4.1)	7 (29.2)
100 and over	2 (28.6)	3 (42.8)	1 (14.3)	1 (14.3)	-	-
<u>Region</u>						
Central	21 (42.0)	5 (10.0)	9 (18.0)	4 (8.0)	3 (6.0)	8 (16.0)
North	26 (48.1)	9 (16.7)	7 (12.9)	8 (14.8)	1 (1.8)	3 (5.6)
North-east	13 (26.0)	14 (28.0)	2 (4.0)	5 (10.0)	1 (2.0)	15 (30.0)
South	13 (27.6)	11 (23.4)	4 (8.5)	1 (2.1)	1 (2.1)	17 (36.2)
<u>Market</u>						
Export	4 (28.6)	4 (28.6)	-	5 (35.7)	- (7.1)	1
Bangkok	22 (37.3)	13 (22.0)	10 (16.9)	3 (5.1)	3 (5.1)	8 (13.6)
Local	47 (36.7)	22 (17.2)	12 (9.4)	10 (7.8)	3 (2.3)	34 (26.6)
Total	73 (36.3)	39 (19.4)	22 (10.9)	18 (8.9)	6 (3.0)	43 (21.4)

Source: Survey.

Table 42

Most Important Constraints to Growth by Size, Region
and Market of Industry

Classification	Constraining Factor					
	Limited local market	Finance	Raw material supplies	Lack of skilled workers	Limited export demand	Others
<u>Employment Size</u>						
Less than 10	39 (52.7)	24 (32.4)	5 (6.8)	2 (2.8)	2 (2.8)	2 (2.8)
10 - 19	21 (43.7)	14 (29.2)	6 (12.5)	2 (4.2)	1 (2.1)	4 (8.3)
20 - 49	16 (33.3)	6 (12.9)	15 (31.3)	4 (8.3)	3 (6.3)	4 (8.3)
50 - 99	10 (43.5)	2 (8.7)	10 (43.5)	-	-	4 (4.3)
100 and over	2 (28.6)	-	5 (71.4)	-	-	-
<u>Region</u>						
Central	20 (40.0)	12 (24.0)	11 (22.0)	1 (2.0)	2 (4.0)	4 (8.0)
North	19 (35.1)	18 (33.3)	8 (14.8)	3 (5.6)	3 (5.6)	3 (5.6)
North-east	36 (22.0)	10 (20.0)	1 (2.0)	2 (4.0)	1 (2.0)	-
South	13 (28.3)	6 (13.0)	21 (45.9)	2 (4.3)	-	4 (8.7)
<u>Market</u>						
Export	3 (21.4)	1 (7.1)	6 (42.9)	-	3 (21.5)	1 (7.1)
Bangkok	22 (37.2)	9 (15.3)	20 (33.9)	2 (3.4)	2 (3.4)	4 (6.8)
Local	63 (49.6)	36 (28.4)	15 (11.8)	6 (4.7)	1 (0.8)	6 (4.7)
Total	88 (44.0)	46 (23.0)	41 (20.5)	8 (4.0)	6 (3.0)	11 (5.5)

Source : Survey

Table 43

Source of Finance at Time of Establishment*
by Size, Region and Market of Industry

(Percent)

Classification	Own Funds	Organized Market				Unorganized Market			
		Commercial banks	Finance companies	SIFO	IFCT	Relatives and friends	Chit funds	Firms with business contact	Others
<u>Employment Size</u>									
Less than 10	71.6	20.7	-	-	-	3.9	1.3	1.5	1.0
10 - 19	36.9	52.5	7.4	0.2	-	2.2	0.8	-	-
20 - 49	46.4	36.2	-	-	2.0	2.4	1.3	1.8	9.9
50 - 99	98.8	1.2	-	-	-	-	-	-	-
100 and over	83.3	9.7	-	-	6.2	-	-	0.8	-
<u>Region</u>									
Central	53.6	40.8	-	-	-	3.9	1.5	-	0.2
North	52.4	26.2	3.6	0.1	10.3	0.8	0.1	0.1	6.4
Northeast	76.2	21.9	-	-	-	0.2	0.6	1.0	-
South	98.3	1.2	-	-	0.1	0.1	-	0.1	0.1
<u>Market</u>									
Export	54.0	34.9	-	-	9.3	0.7	-	1.2	-
Bangkok	65.9	27.1	-	0.2	-	2.3	1.0	-	3.5
Local	96.3	2.6	0.3	-	0.1	0.1	0.1	0.1	0.6
Total	91.4	6.3	0.3	-	0.9	0.3	0.1	0.2	0.6

* Average for all firms

Source: Survey.

Source of Finance for Operations* by Size,
Region and Market of Industry

(Percent)

Classification	Own Funds	Organized Market				Unorganized Market			
		Commercial banks	Finance companies	SIFO	IFCT	Relatives and friends	Chit funds	Firms with business contact	Others
<u>Employment Size</u>									
Less than 10	75.8	20.8	-	-	-	1.6	1.7	0.3	0.3
10 - 19	21.1	63.2	14.5	-	-	1.0	0.2	-	-
20 - 49	66.3	19.4	0.7	-	-	1.0	1.2	0.1	11.3
50 - 99	70.4	27.7	-	1.7	-	-	0.2	-	-
100 and over	83.0	10.1	-	-	3.4	-	-	2.7	-
<u>Region</u>									
Central	68.2	26.2	1.2	-	-	2.3	1.1	-	-
North	19.8	58.1	13.3	-	2.2	0.4	0.2	0.1	5.9
North-east	78.6	20.1	-	-	-	0.6	0.7	-	-
South	86.6	9.5	-	-	0.1	0.1	-	3.7	0.1
<u>Market of Industry</u>									
Export	74.4	21.0	-	-	0.5	-	0.1	3.9	-
Bangkok	67.2	25.3	1.0	0.8	-	0.7	0.8	-	4.1
Local	45.2	42.1	8.9	-	-	0.9	0.3	0.1	2.4
Total	55.2	34.1	5.4	0.2	0.9	0.7	0.4	0.7	2.3

* Average for all terms.

Source: Survey

Table 45

Most Important Problem on Finance by Size, Region
and Market of Industry

Classification	Problem			
	High interest	Lack of funds	Lack of collateral	None
<u>Employment Size</u>				
Less than 10	37 (50.0)	32 (43.2)	29 (39.2)	30 (40.5)
10 - 19	30 (62.5)	25 (52.1)	22 (45.8)	15 (31.3)
20 - 49	26 (54.2)	23 (47.9)	20 (41.7)	19 (39.6)
50 - 99	7 (29.2)	8 (33.3)	3 (12.5)	13 (54.2)
100 and over	5 (71.4)	4 (57.1)	5 (71.4)	2 (28.6)
<u>Region</u>				
Central	33 (66.0)	25 (50.0)	31 (62.0)	17 (34.0)
North	39 (72.2)	33 (61.1)	33 (61.1)	13 (24.1)
North-east	18 (36.0)	12 (24.0)	6 (12.0)	25 (50.0)
South	5 (31.9)	18 (38.3)	9 (19.1)	24 (51.1)
<u>Market</u>				
Export	8 (57.1)	6 (42.9)	7 (50.0)	5 (35.7)
Bangkok	36 (61.0)	35 (59.3)	32 (54.2)	18 (30.5)
Local	59 (46.1)	51 (39.8)	40 (31.3)	56 (43.8)
Total	105 (52.2)	92 (45.8)	79 (39.3)	79 (39.3)

* Each firm may supply more than one answer. Figures in parenthesis are percentage of reply in total respondents.

Source: Survey.

Table 46

Need for Possible Government Services

Type of Service	Degree of Need			Total
	Much	Some	Little	
Long-term loans	93	43	58	194
Advices on production	53	73	65	191
Advices on marketing	88	45	56	189
Training of workers	25	48	112	185
Trianing on management	24	45	117	186

Source : Survey